As filed with the Securities and Exchange Commission on May 7, 2021.

Registration No. 333-

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM S-1
REGISTRATION STATEMENT
Under
The Securities Act of 1933

SINGULAR GENOMICS SYSTEMS, INC.
(Exact name of Registrant as specified in its charter)

Delaware	3826	81-2948451
(State or other jurisdiction of incorporation or organization)	(Primary Standard Industrial Classification Code Number)	(I.R.S. Employer Identification Number)

10931 N. Torrey Pines Road
Suite #100
La Jolla, CA 92037
(858) 333-7830
(Address, including zip code, and telephone number, including area code, of Registrant's principal executive offices)

Andrew Spaventa
Chief Executive Officer
and Chairperson of the Board
Singular Genomics Systems, Inc.
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Approximate date of commencement of proposed sale to the public: As soon as practicable after the effective date of this registration statement.

If any of the securities being registered on this form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act of 1933, check the following box. ☐

If this form is filed to register additional securities for an offering pursuant to Rule 462(b) under the Securities Act, please check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. ☐

If this form is a post-effective amendment filed pursuant to Rule 462(c) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. ☐

If this form is a post-effective amendment filed pursuant to Rule 462(d) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. ☐

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company," and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer ☐ Accelerated filer ☐ Non-accelerated filer ☒ Smaller reporting company ☐

Emerging growth company ☒

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 7(a)(2)(B) of the Securities Act. ☐

CALCULATION OF REGISTRATION FEE

Title of Each Class of Securities to be Registered	Proposed Maximum Aggregate Offering Price(1)(2)	Amount of Registration Fee
Common Stock, $0.0001 par value per share	$100,000,000	$10,910

(1) Estimated pursuant to Rule 457(o) under the Securities Act of 1933, as amended.
(2) Includes the aggregate offering price of additional shares that the underwriters have the option to purchase.

The Registrant hereby amends this Registration Statement on such date or dates as may be necessary to delay its effective date until the Registrant shall file a further amendment which specifically states that this Registration Statement shall thereafter become effective in accordance with Section 8(a) of the Securities Act of 1933, as amended, or until the Registration Statement shall become effective on such date as the Commission, acting pursuant to said Section 8(a), may determine.

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The information in this preliminary prospectus is not complete and may be changed. These securities may not be sold until the registration statement filed with the Securities and Exchange Commission is effective. This preliminary prospectus is not an offer to sell nor does it seek an offer to buy these securities in any jurisdiction where the offer or sale is not permitted.

SUBJECT TO COMPLETION, DATED , 2021

Shares

SINGULAR GENOMICS

Common Stock

This is the initial public offering of shares of common stock of Singular Genomics Systems, Inc.

We are offering shares of our common stock. Prior to this offering, there has been no public market for our common stock. It is currently estimated that the initial public offering price per share will be between $ and $. We have applied to list our common stock on the Nasdaq Global Market under the symbol "OMIC."

We are an emerging growth company under the federal securities laws and, as such, have elected to comply with certain reduced public company reporting requirements.

Investing in our common stock involves a high degree of risk. See "Risk Factors" beginning on page 19.

	Per Share	Total
Initial public offering price	$	$
Underwriting discounts and commissions(1)	$	$
Proceeds, before expenses, to us	$	$

(1) See "Underwriting" for additional disclosure regarding the estimated underwriting discounts and commissions and estimated offering expenses.

We have granted the underwriters an option for a period of 30 days to purchase up to additional shares of our common stock.

The underwriters expect to deliver the shares against payment in New York, New York on , 2021.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or determined if this prospectus is truthful or complete. Any representation to the contrary is a criminal offense.

J.P. Morgan **Goldman Sachs & Co. LLC** **BofA Securities** **Cowen** **UBS Investment Bank**

, 2021

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Until , 2021 (25 days after the date of this prospectus), all dealers that effect transactions in these securities, whether or not participating in this offering, may be required to deliver a prospectus. This is in addition to a dealer's obligation to deliver a prospectus when acting as an underwriter and with respect to an unsold allotment or subscription.

Neither we nor the underwriters have authorized anyone to provide any information or to make any representations other than those contained in this prospectus, any amendment or supplement to this prospectus or in any free writing prospectuses prepared by or on behalf of us or to which we have referred you. We and the underwriters take no responsibility for, and can provide no assurance as to the reliability of, any other information that others may give you. This prospectus is an offer to sell only the shares offered hereby, but only under circumstances and in jurisdictions where it is lawful to do so. The information contained in this prospectus or in any applicable free writing prospectus is current only as of its date, regardless of its time of delivery or any sale of shares of our common stock. Our business, financial condition, results of operations and prospects may have changed since that date.

Neither we nor the underwriters have done anything that would permit this offering or possession or distribution of this prospectus or any free writing prospectus we may provide to you in connection with this offering in any jurisdiction where action for that purpose is required, other than in the United States. You are required to inform yourselves about and to observe any restrictions relating to this offering and the distribution of this prospectus and any such free writing prospectus outside of the United States.

PROSPECTUS SUMMARY

This summary highlights selected information contained elsewhere in this prospectus and is qualified in its entirety by the more detailed information and financial statements included elsewhere in this prospectus. It does not contain all of the information that may be important to you and your investment decision. You should carefully read this entire prospectus, including the sections titled "Risk Factors" and "Management's Discussion and Analysis of Financial Condition and Results of Operations" and our financial statements and related notes included elsewhere in this prospectus. In this prospectus, unless context requires otherwise, references to "we," "us," "our," "Singular," or the "Company" refer to Singular Genomics Systems, Inc.

Company Overview

Our Mission

Our mission is to accelerate genomics for the advancement of science and medicine. The genomic tools and technologies developed over the last two decades since the first sequencing of the human genome have greatly improved our understanding of biology, empowered the development of novel therapies and advanced clinical diagnostics. And yet the transformative potential of genomics is just starting to be realized. For example, in oncology, we are just at the beginning of an era in which cancer can be detected early, analyzed at the molecular level, treated with targeted therapies, and monitored through blood tests able to detect and profile minimal residual disease. Today's sequencing technologies and products have made a significant impact, but real limitations remain to incorporate these tools into routine clinical practice: long analysis times, labor intensive protocols, sample batching requirements and high cost. We are developing fast, powerful, efficient, flexible sequencing platforms, along with novel applications and sample-to-result workflows to solve these challenges.

We believe the next generation of biological discovery and translational medicine will be powered by even more advanced molecular technologies. These technologies can enable a high resolution view of DNA, RNA and proteins in individual cells, along with their spatial arrangement. This multiomics view will enable greater insight into the function of both cells and tissues. We are building these new technologies by leveraging our core DNA sequencing engine as a universal detection method of biological information. We take advantage of the vast combinatorial range of DNA bases as a nature inspired barcode and combine it with powerful molecular biology techniques and the latest advances in high speed, high resolution imaging. Our goal is to unleash the full power of sequencing as a universal reader of biology, which we believe will ultimately open new frontiers in research and medicine.

Overview

We are a life science technology company that is leveraging novel next generation sequencing (NGS) and multiomics technologies to build products that empower researchers and clinicians. We developed a unique and proprietary NGS technology, which we refer to as our Sequencing Engine. This Sequencing Engine is the foundational platform technology that forms the basis of our products in development and our core product tenets: accuracy, speed, flexibility and scale. We are currently developing two integrated solutions that are purpose built to target specific applications in which these core product tenets matter most. Our first integrated solution is targeted at the NGS market and comprises an instrument (the G4 Instrument) and an associated menu of consumable kits, which we refer to collectively as our G4 Integrated Solution. The G4 Instrument is a benchtop next generation sequencer designed to produce fast and accurate genetic sequencing results. The integrated purpose built kits that run on the G4 Instrument address specific applications in fast growing markets including oncology and immune profiling. We have completed our beta pilot program (which is our first external third-party evaluation) and anticipate initiating an early access program followed by a commercial launch of the G4 Integrated Solution by the end of 2021, with intentions for units to ship in the first half of 2022. Our second

integrated solution in development comprises an instrument (the PX Instrument) and an associated menu of consumable kits, which we refer to collectively as our PX Integrated Solution. Leveraging sequencing as a universal readout, the PX Integrated Solution combines single cell analysis, spatial analysis, genomics and proteomics in one integrated instrument providing a versatile multiomics solution. We anticipate commercial launch of the PX Integrated Solution in 2023.

The core of our Sequencing Engine is comprised of unique and proprietary chemistry, including novel chemical compounds, polymers and enzymes. This chemistry is designed to produce high sequencing accuracy and rapid cycle times that we believe can drive improvements in NGS. To take full advantage of the proprietary chemistry, we are developing purpose built instrumentation consisting of high speed, high resolution imaging and innovative fluidic design. We believe that our Sequencing Engine, together with our proprietary innovations in molecular biology techniques, will enable differentiated applications in fast growing markets. These innovations are supported by our intellectual property portfolio.

Each of our two integrated solutions in development consists of an instrument that incorporates our Sequencing Engine and associated consumables that are used exclusively on each instrument. The G4 Integrated Solution is designed to target the NGS market, in particular, applications that require accuracy, speed, flexibility and scale. We are focused on oncology where there is an increasing need for higher sensitivity technology such as rare variant detection in liquid biopsy. Another area of focus is immunology where there is a need to better understand and harness the immune system in infectious disease, autoimmune disorders and cancer immunotherapy. We aim to execute a three step commercialization plan for our G4 Integrated Solution consisting of: (1) collaborating with select partners to conduct beta pilot tests, which we have completed, (2) expanding collaborations with additional potential customers in an early access program and (3) offering our G4 Integrated Solution broadly to the market, with commercial launch by the end of 2021 and shipping units in the first half of 2022.

The PX Integrated Solution is our second product in development and is a multiomics platform designed to target the markets for single cell, spatial analysis and proteomics. The PX Integrated Solution will leverage our Sequencing Engine as a readout mechanism to provide a high-resolution view of biology at the single cell and tissue level. We believe the PX Integrated Solution, when launched, will be a high-throughput, versatile platform capable of measuring levels of RNA transcription, protein expression and sequence specific information directly in cells and tissues. We believe the PX Integrated Solution will have broad application across many areas of biology. We are initially focused on applications in oncology and immunology, with future expansion into other applications such as neurology. We are currently in an advanced prototype development stage for the PX Integrated Solution and expect to begin an early access program in 2022 and full commercial launch in 2023. We believe that our G4 and PX Integrated Solutions can unleash the full power of sequencing as a universal reader of biology, and open new frontiers in research and medicine.

Our Foundational Technology

We have developed a novel and proprietary Sequencing Engine that is a foundational technology for our products in development. The core of our Sequencing Engine is a unique and proprietary chemistry that enables high sequencing accuracy and rapid cycle times that we believe can drive improvements in NGS technology and enable performance of highly accurate and massively parallel sequencing at speed. We aim to deploy our foundational technology as a universal reader of biology, which can ultimately open new frontiers in research and medicine.

We built our Sequencing Engine from the ground up, and it incorporates the following innovations:

- *Cluster amplification*: We have developed an optimized cluster amplification method that is designed to ensure generation of high quality and high density clusters with minimal sequence bias and high signal-to-background ratios. This enables high accuracy sequencing regardless of the type of genetic input material.

- *Paired end equivalent sequencing*: We are developing a novel method to achieve an accurate paired end equivalent sequencing. We believe our method will be fast and efficient with reagent usage, while still providing the critical value of efficient mapping and detection of gene rearrangements, higher quality data and single cell genomics.

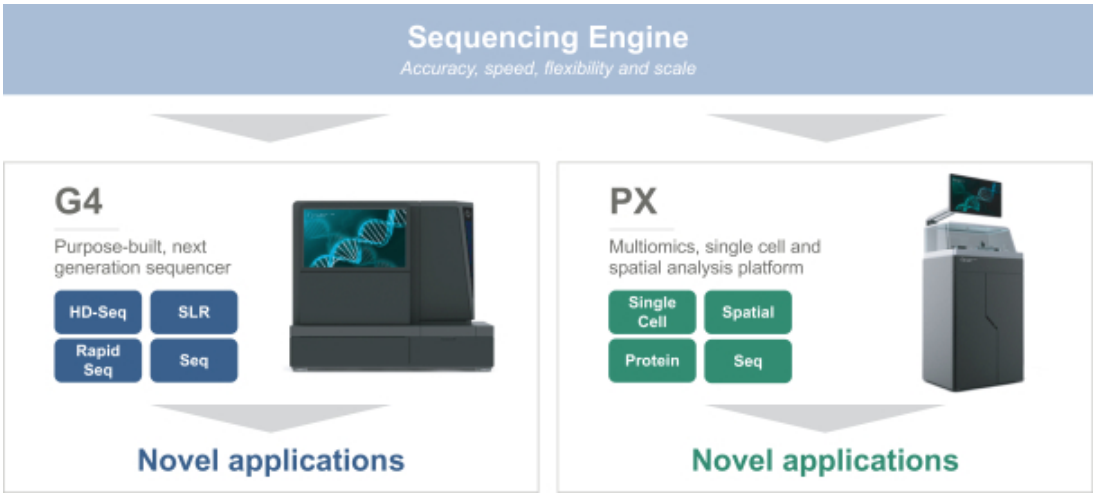
- *Sequencing chemistry*: We have recognized that chemistry has historically been a particularly challenging area to improve in the sequencing process. Therefore, we developed a new and proprietary sequencing chemistry. This chemistry includes novel enzymes and nucleotides. We have also designed and synthesized our own dyes to optimize performance. This new and proprietary chemistry enables fast sequencing cycle times.

- *Detection technology*: We have developed a proprietary high speed and high resolution imaging system. The imaging system has been designed to optimize throughput, cycle time, accuracy and efficiency.

While the above comprises the technology used in our Sequencing Engine, we also incorporate additional technologies into our G4 Instrument and PX Instrument. For example, our G4 Instrument includes a unique flow cell design to improve workflow flexibility for the user and our PX Instrument includes a well-plate format intended to push the boundaries of throughput for both single cell and spatial analysis applications.

Our Integrated Solutions

Our product development pipeline comprises two initial integrated solutions, each designed to leverage our Sequencing Engine and purpose built to address different applications. Our G4 Integrated Solution is designed to target the NGS market. Our PX Integrated Solution is designed to target the single cell, spatial analysis and proteomics markets. Each integrated solution consists of an instrument that incorporates our Sequencing Engine and associated consumables that are used exclusively on each instrument.



G4 Integrated Solution

We surveyed numerous labs and key opinion leaders (KOLs) while developing our G4 Integrated Solution to listen to their needs and to identify the limitations of current solutions. In parallel, we engineered an

instrument around our Sequencing Engine to address those real-world needs. Our G4 Integrated Solution is designed to seamlessly fit into existing workflows, including library preparation and bioinformatics. It is also designed to provide flexibility in terms of sample batching and number of flow cells in a sequencing run. We believe this design will enable customers to better manage a wide range of daily sample volume demands without sacrificing turnaround times or incurring extra expenses from inefficient reagent kit use. We are targeting applications for which we believe accuracy, speed, flexibility and scale matter, and where our novel molecular biology methods offer unique advantages.

Capabilities of the G4 Integrated Solution

We believe there are several key criteria that have determined the commercial success of sequencers, including accuracy, speed, flexibility and scale. In addition, read length and the ability to sequence DNA from both ends of the fragment, commonly referred to as paired end sequencing, are important factors. We designed the G4 Integrated Solution to have the following characteristics to address these key criteria:

- *High accuracy:* Sequencing accuracy is critical to correctly determining the order of bases present in DNA. Errors can be introduced in the sequencing process itself, or in the upstream steps involved in sample processing and library preparation. Base calling accuracy, measured by the Phred quality score (Q score), is the most common metric used to assess the accuracy of a sequencing platform. It indicates the probability that a given base is called correctly by the sequencer. We believe that a sequencer must have at least Q30 accuracy (i.e., 1 in 1000 probability of calling a base incorrectly) to be commercially successful. We have internally demonstrated Q30 accuracy on greater than 70% of base calls. This gives a demonstrated accuracy of 99.7% on 150 base reads. In our two beta pilot tests, our third-party external partners demonstrated Q30 or higher accuracy on greater than 70% of base calls. One third-party external partner conducted standard RNA sequencing, and the other conducted testing with single-cell RNA sequencing using paired-end reads consistent with the methods it currently uses. In both cases, the gene expression levels measured by these third-parties in their tests utilizing our G4 Integrated Solution correlated strongly to the independent reference data these third-parties generated with their current commercially available sequencing methods. For our commercial G4 Instrument, we are targeting Q30 for greater than 80% of base calls for 150 base reads, which we believe we can achieve through continually optimizing multiple parameters in clustering, sequencing, imaging and signal processing. Additionally, we have demonstrated uniform guanine-cytosine (G/C) coverage over the range of 20-70% G/C content. We believe this high accuracy is competitive with what customers are accustomed to with current sequencing solutions.
- *Speed of sequencing:* Dramatically decreasing the chemistry time needed for each base to be detected means that the overall sequencing time can be significantly faster, resulting in more samples being run in a day on a given platform. Cycle time is the measurement of time needed to add one nucleotide, image and prepare the elongating strand for the next nucleotide and the start of the next sequencing cycle. We are targeting a 2.5 minute cycle time for each base sequenced. We expect that this will give us a sequencing time of approximately 16 hours to complete a 2x150 base run. For other run modes such as RNA-Seq, we are targeting run times of approximately five hours. Currently, we are running a 4.0 minute cycle time, with previous demonstration of high quality sequencing with a 2.7 minute cycle time on our previous prototype. In our two beta pilot tests, our third-party external partners demonstrated a 4.0 minute cycle time. We anticipate that future versions of our chemistry will allow us to reduce the cycle time even further. Speed also gives our G4 Instrument the capacity for higher throughput as our fast runtime will facilitate the possibility of processing multiple runs in a day.
- *High, independent, flexible throughput:* Every sequencing run requires reagents and disposable parts, including flow cells. Our G4 Integrated Solution has flow cells with independent lanes, enabling

libraries to be kept separate in each lane while still retaining high throughput capacity. We believe this allows for easier and more convenient processing of samples, thus enabling the G4 Integrated Solution to cover a wide range of throughput requirements. Alternative sequencing technologies that do not have this flexibility in throughput may require customers with different volume requirements across different experiments to have multiple instruments in their lab or encounter a slow turnaround time with a backlog of projects. We have internally demonstrated the capability to produce 150 million reads per flow cell. In our two beta pilot tests, our third-party external partners demonstrated average throughput of greater than 150 million reads per flow cell for single-end reads, and an average throughput of greater than 100 million reads for paired-end reads. If all four flow cells are utilized in a sequencing run and with a full read length of 150 bases, our G4 Integrated Solution can generate 600 million reads per sequencing run. We are targeting 330 million reads per flow cell at commercial launch for a total of 1,320 million reads if all four flow cells were utilized in a sequencing run, which we believe we can achieve through ongoing upgrades to the G4 Instrument's optical system, which will allow for higher resolution imaging and cluster density.

- *Paired end equivalent sequencing:* In some applications, users value the ability to perform paired end reads and tune the system to different read lengths. Paired end sequencing is a technique involving reading from both ends of DNA fragments. This technology can (1) enable longer reads, which allows for more efficient mapping and detection of gene rearrangements for better genome assembly; (2) overlap reads for higher quality data; (3) support single cell genomics and other barcode enabled applications; and (4) enable the ability to detect insertions and deletions (indels) and inversions. We are developing and plan to offer a novel way to achieve paired end equivalent sequencing such as 2x150. We believe that this is just the starting point of our capabilities for paired end equivalent sequencing and that we will be able to improve this metric further as our technology develops.
- *Read lengths:* We are developing kits with read lengths of 50 bases to 150 bases. We also plan to extend read length beyond 150 bases in our G4 Integrated Solution with synthetic long read (SLR) kits.
- *Workflow:* We have designed our G4 Integrated Solution for customers to efficiently switch to our products and platform as the upstream workflow and downstream analysis will be compatible with current NGS processes.

Applications for the G4 Integrated Solution

We believe that our G4 Integrated Solution has broad potential application across research and clinical markets. While we believe that the G4 Integrated Solution will be able to run a wide variety of available sequencing applications that are currently available on the market today, we specifically designed our G4 Integrated Solution to excel with applications that benefit from accuracy, speed, flexibility and scale. Our initial targeted applications for our G4 Integrated Solution include rare variant detection with High Definition Sequencing (HD-Seq) and SLR. These applications target large markets across oncology, including liquid biopsy detection of cell-free DNA (cfDNA) and immunology.

- *Rare variant detection with HD-Seq:* We designed our G4 Integrated Solution to support HD-Seq, a unique library prep kit and sequencing method for double-stranded DNA, which we are designing to provide higher accuracy than standard single-strand NGS sequencing methods (including ours), and is expected to enable rare variant detection with higher efficiency and lower costs. HD-Seq is intended to achieve accuracy levels of Q50, which can help differentiate a real mutation from random errors. In our internal testing, we have demonstrated 99.99% accuracy for 100 base reads with our current methodology, and we anticipate that we will be able to reach 99.999% accuracy for greater than 100 base reads. This internal testing involved using commercial reference materials for cfDNA and preparing sequencing libraries using our HD-Seq methodology. We then clustered and sequenced the library, with bi-directional readout of 100 bases in one direction and 150 bases in the other direction.

To assess accuracy, we analyzed overlapped regions of 100 bases. For HD-Seq, the base call was only made if there was agreement in the base calls on the complementary strands. The accuracy of the HD-Seq base calls was 99.99%. Accuracy is especially important in oncology for the detection of somatic mutations, including rare single-nucleotide polymorphisms. It is also critical in liquid biopsy where the frequency of mutations in a sample is extremely low. With the accuracy that our HD-Seq could provide, we anticipate that customers will be able to achieve high accuracy in a cost-effective manner relative to other commercially available technologies.

- *Synthetic long reads (SLR):* We also plan to offer proprietary specialized library prep kits for targeted SLR, which we expect to facilitate reads of up to 2,000 to 3,000 base pairs using our G4 Integrated Solution. We have currently demonstrated approximately 450 base reads with B cells for VDJ sequencing. We expect this to be a key capability for applications requiring long sequencing reads. We believe that our G4 Integrated Solution will be able to deliver the throughput, accuracy and read lengths required to support comprehensive analysis of the immune system, especially the adaptive immune response which consists of B and T cells. We believe that a high throughput, high accuracy, cost effective solution for reading these longer gene sequences can advance the understanding of the immune system and ultimately improve the diagnosis and monitoring of blood cancers, provide new insights into immunotherapy for cancer, facilitate therapeutic antibody and T cell discovery and accelerate the development of vaccines for infectious disease.

Expansion of the G4 Product Suite

We anticipate that there will be customers who have high volumes who will still need the flexibility to batch less while still maintaining high throughput. Examples of these types of customers would include:

- Laboratories that do not want to batch together hundreds or thousands of samples onto one sequencing flow cell because of the risk that one failure might ruin data from all samples in the run; or
- Laboratories with high sample volumes of diverse sample types and/or run modes which would make it difficult to combine those samples together on one sequencing flow cell.

For these specific types of customers, which include commercial laboratories and academic laboratories, we plan to offer an expansion of our G4 Instrument in a configuration that we have named the G4x4. This special four instrument configuration will be designed to address a different part of the NGS market for those needing high sequencing output while maintaining speed and flexibility of the G4 Integrated Solution.

PX Integrated Solution

Our PX Integrated Solution is focused on the single cell and spatial analysis markets, and consists of our PX Instrument and associated consumables. The PX Instrument leverages our Sequencing Engine to enable multiomics analysis of single cells and tissues as both a universal detection method and in situ sequencing. Importantly, the PX Instrument is designed to provide high throughput analysis of nucleic acids and proteins, while also generating high resolution images of cellular morphology to enable computer-vision based analysis of cellular phenotype. This design reflects an appreciation of the tremendous potential for machine learning based image analysis to serve as a rich source of biomarker information for cancer and autoimmune disease translational research. We believe our PX Integrated Solution will eliminate the need for customers to employ multiple systems over several day workflows, which is required by existing commercial methods. Ultimately, we believe this will enable researchers to perform large scale experiments that may fundamentally advance our understanding of biology, and, in turn, advance human health.

Current challenges in single cell and spatial analysis

In recent years, systems have been developed for targeted gene sequencing in single cells, and for measuring levels of gene transcription in individual cells by sequencing readout. These tools have yielded new information that is not available from bulk sequencing measurements. However, current commercial methods have significant limitations. One limitation is that cells are broke open and tagged with DNA barcodes in droplets, then pooled together into a sequencing run, thus losing information about cell morphology. Another limitation is the number of cells and samples that can be processed in an experiment. Finally, current methods struggle to achieve multiomics readout, with only limited ability to measure proteins along with DNA or RNA, while maintaining cellular morphology.

For spatial analysis of tissue, the capabilities of current genomic technologies are even more limited. Most genomic analysis of tissue is done on a bulk basis, with no spatial resolution. Recently, several spatial analysis platforms have been developed and introduced commercially. However, we believe that these technologies currently have several limitations. First, we believe most of these platforms currently have limited resolution, unable to provide detailed information at the level of individual single cells, including subcellular localization, and information about how the cells are organized in space within the tissue. Second, we believe current commercial platforms are unable to provide high throughput. Experiments are limited to less than 20 samples per run, and in some cases just one sample per run, which limits the ability of users to conduct large scale experiments.

Although the single cell and spatial analysis fields are still in their infancy, we anticipate that the following elements will be critical for determining success in the future:

- *Cell capacity*: Historically, instruments that have been able to analyze the highest number of single cells have shown the most success. We believe this will continue to be an important success factor.
- *Resolution*: We believe that the ability to provide genomic and proteomics data at the single cell level, and even resolve subcellular features, will be informative to researchers.
- *Throughput*: Similar to NGS, we believe that researchers will continue to push the boundaries of research to understand biology and instruments will need to handle more samples to stay relevant.
- *Multiomics capabilities*: We believe that having the ability to measure multiple types of analytes (e.g. RNA transcripts and cellular proteins) from the same cell will be invaluable in piecing together how different genes and proteins interact within a spatial context. We believe that machine learning based image analysis will serve as an increasingly critical component of multiomics based discovery.
- *Tissue sample type*: 80% of translational research studies that involve tissue analysis utilize formalin-fixed paraffin-embedded (FFPE) preserved tissue. Thus, it will be critical for an instrument to be compatible with this sample type.
- *Cost*: We believe researchers want to continue to push towards larger scale single cell studies requiring millions of cells. Without integration of the cell preparation and the sequencing into one platform, we believe that the cost will become too high using current methods.

Capabilities of the PX Integrated Solution

We are designing the PX Integrated Solution to have the following characteristics, which we believe are important differentiating characteristics of single cell and spatial analysis approaches:

- *Multiomics detection*: We are developing the PX Integrated Solution to identify specific RNA and proteins (through the use of oligo-conjugated antibodies) using our core Sequencing Engine either as a

universal detection method or for in situ sequencing along with cellular morphology and tissue organization. We believe this provides significantly more information than is available today with current commercial single cell technologies. The addition of the cellular morphology along with spatial organization of biomolecules within the tissue microenvironment can provide a data rich solution across many research applications to better understand cell development, maturation and pathogenesis. We believe that the combination of these useful datasets from individual cells will provide a more complete cellular picture as it will combine both phenotypic data along with detailed molecular characterization.

- *High throughput and large scale:* We are designing the PX Integrated Solution to be high throughput in order to enable researchers to perform large scale studies that are currently inaccessible but are needed for a more complete characterization and understanding of cells, and therefore biology. Current commercially available single cell technologies detect 10,000 to 100,000 cells in an experiment. Our PX Instrument will use a well-plate approach (either with a 96 or 384-well consumable plate) designed to process 10,000 to 100,000 cells per well at a throughput of 1 million to 10 million cells in a 96 well plate. We believe that this will meet the growing need in this market for millions of cells and the large scale that is currently unattainable today. Current commercially available spatial analysis instruments can run an experiment involving only 4 to 20 tissue samples. With our PX Integrated Solution, we expect to run up to 96 tissue samples per run.

- *High resolution:* The PX Integrated Solution will be designed to resolve molecules at the single cell level including subcellular localization of targets. We anticipate that this will enable researchers to differentiate between single cells to truly understand cellular characterization.

- *Targeted panels*: We believe that current discovery efforts with bulk sequencing will lead to translational panels that are targeted on the key genes of interest. Our PX Integrated Solution will be designed for larger scale studies that will process a higher number of samples with these focused panels.

Applications for the PX Integrated Solution

We are developing our PX Integrated Solution to have a broad set of applications in single cell and tissue analysis. Examples of applications for our PX Integrated Solution may include but are not limited to the following:

- *Single cell RNA counting for differential gene expression:* Targeted gene panels (with customization available) for specific research areas and diagnostic applications to measure the gene expression within each cell. It is anticipated that the imaging readout will also provide cell morphology information.
- *Single cell proteomics:* Targeted protein panels for specific research areas and diagnostic applications to measure intracellular and surface proteins.
- *Single cell RNA sequencing for variant detection:* In situ sequencing of selected gene targets directly within each cell while also simultaneously providing phenotype data for each cell, such as binding of antigens to B cells.
- *Spatial RNA and proteomics applications for tissue in development:* Targeted panels (with customization available) for specific basic and translational research applications to measure gene transcription and protein expression within tissue and then link this information to additional phenotypic data to help provide biological context.

Key disease areas for the PX Integrated Solution

We are designing our PX Integrated Solution to have broad applicability across multiple large disease areas. Although our initial applications will focus on indications across oncology and immunology, we are designing

our PX Integrated Solution to possess the foundational technology and capabilities to address additional areas, including neurology and developmental biology. We believe that key existing biological challenges can be addressed through improved multiomics information, higher resolution and enhanced spatial context, which we are designing our PX Integrated Solution to provide. The following large disease areas are examples of where we are designing our PX Integrated Solution to address significant challenges.

- *Oncology*: We believe the PX Instrument will be ideally suited to study blood cancers initially. We are designing the PX Instrument to enable the mapping of the progression of blood cancers as they develop, pre and post treatment, to fully characterize them across multiple molecular markers. The cellular phenotype, including morphology, could be valuable in helping to further characterize these cancer cells along with the molecular data of gene expression. We anticipate that the coupling of molecular data with the cellular phenotype and morphology can help to drive further understanding and identification of different types of cancer as well as provide the ability to interpret biological function.
- *Immunology*: We anticipate that our single cell sequencing will be valuable for identifying the paired receptor data (light and heavy chains in B-cell or alpha and beta chains in T cell) that is currently lacking at scale today. By having a high throughput method that will sequence and retain the linkage of the two chains of the immune receptors, we believe researchers will be able to study in more depth the immune repertoire while also correlating each cell with its cellular phenotype. Additionally, we believe that we will be able to use a DNA conjugated antibody that recognizes the antigen to confirm the immune cell is binding to a specific antigen. We anticipate this combination of data can provide powerful information to interpret biological function as well as to further characterize immune cell types.

We believe that using our three-step commercialization plan will allow us to build our sales and marketing organization and customer support services to support the commercial launch of our G4 Integrated Solution. We are also investing in our manufacturing operations to be prepared for the commercial launch of our G4 Integrated Solution and our planned PX Integrated Solution. As we have not yet commercially launched our G4 Integrated Solution and as our PX Integrated Solution is still in the development stage, we have limited sales and marketing and customer support experience and although we have some limited manufacturing experience, we have no experience manufacturing our products at commercial scale.

Markets

We believe our product pipeline targets multiple market opportunities across life sciences. Due to the comprehensive capability to analyze biology that we are designing into our products, we anticipate that much of this opportunity will ultimately be available to us. We estimate that the products we have currently under development in the G4 and the PX Integrated Solutions target substantial market opportunities such as: NGS, single cell, spatial analysis, proteomics and potential new markets based on our estimates that these markets are underserved by existing genomics products and technologies and our target customers will recognize the value proposition offered by our products.

NGS market: According to Allied Market Research, the global NGS market is expected to grow to approximately $18.6 billion in 2026 at a compound annual growth rate (CAGR) of approximately 19.2% between 2020 and 2026. According to DeciBio, the NGS market in 2020 consisted of 58% basic research and translational medicine and 42% clinical applications, and in 2021, the basic research and translational medicine market was estimated to be approximately $4 billion and the clinical applications market was estimated to be approximately $3 billion, which we believe we can access based on the capabilities of our G4 Integrated Solution and assuming that target customers will view our G4 Integrated Solution as a competitive alternative to existing tools and technologies. The current landscape of NGS instruments available in the market today are comprised of lower and medium throughput benchtop platforms, and production scale high throughput platforms. We purposely

designed our G4 Integrated Solution to target specific applications and to be capable of competing with other instruments across a range of throughput levels, particularly in the medium throughput segment. We also believe the G4 Integrated Solution can capture market share from both the lower throughput applications but also some of the higher throughput applications given its speed and cost capabilities.

Single cell, spatial analysis and proteomics markets: We are building our PX Integrated Solution to address the single cell and spatial analysis markets, which we estimate to be approximately $17 billion in 2021 based on available market data. We believe that the single cell capabilities of our G4 and PX Integrated Solutions will address an estimated global market opportunity of approximately $15 billion. According to DeciBio, the spatial analysis market, which will be addressed by our PX Integrated Solution, has a total addressable market of more than $2 billion of which less than 10% has been penetrated as of 2020. According to Allied Market Research, the life sciences research portion of the global proteomics market, which will be addressed by our PX Integrated Solution, was estimated at approximately $20 billion in 2020. We believe we can access these markets based on the capabilities we have designed for our PX Integrated Solution and assuming that target customers will view our PX Integrated Solution as a competitive alternative to existing tools and technologies.

New markets: Both of our integrated solutions can be used in many different and diverse market segments, including basic biology, oncology, immunology, neurology, genetic diseases, infectious diseases, the human microbiome and many others. Therefore, we believe that the capabilities offered by our integrated solutions and future products may potentially lead to new end markets, applications and business models that complement our current addressable markets, and will expand our market opportunity.

These markets are characterized by rapid technological changes, frequent new product introductions, established and emerging competition, extensive intellectual property disputes and litigation, price competition, aggressive marketing practices, evolving industry standards and changing customer preferences. Accordingly, our prospects must be considered in light of the uncertainties, risks, expenses, and difficulties frequently encountered by new companies operating in rapidly changing and competitive markets.

We plan to sell and market our products for research use only (RUO) to academic institutions, life sciences and research laboratories that conduct research, and biopharmaceutical and biotechnology companies for non-diagnostic and non-clinical purposes. Additionally, CLIA-certified laboratories have the ability to develop laboratory developed tests (LDTs) using RUO products, and we believe that the capabilities of our products may enable our customers to use them in clinical applications as LDTs. In fact, today a significant majority of NGS-based diagnostic tests are performed as LDTs on DNA sequencers that are labeled for RUO. Over the near term, references in this prospectus to clinicians, clinical markets and clinical practice all refer to the potential use of our RUO labeled products for LDTs. While our initial products are intended for RUO, our longer-term plans include seeking FDA clearance for IVD products, and corresponding clearances in other countries.

Competitive Strengths

To address the challenges of sequencing, single cell, spatial and proteomics we aim to bring together the following unique capabilities:

- We are developing innovative purpose built products to address underserved applications.
- Our Sequencing Engine is a foundational platform technology that optimizes key performance characteristics for our products.
- Our integrated solutions are built around customer needs and have or are designed to have strong performance relative to key performance metrics.

- Our innovative assays in development are designed to support novel applications in oncology and immunology.
- Our complementary product portfolio can serve multiple customer needs.

Our Growth Strategy

Our goal is to establish our Sequencing Engine as the standard for genomics and proteomics detection and to drive adoption of our platforms. Our growth strategy includes the following key elements:

- Drive commercial adoption and utilization of the G4 Integrated Solution.
- Complete development and drive commercial adoption of our PX Integrated Solution.
- Create an ecosystem of customers, partners and collaborators whose expertise and offerings complement and enhance the capabilities and utility of our integrated solutions.
- Expand the G4 and PX Integrated Solutions beyond initial applications.
- Expand our commercial geographic presence.

Risks Related to Our Business

Our ability to execute our business strategy is subject to numerous risks, as more fully described in the section titled “Risk Factors” immediately following this prospectus summary. These risks include, among others:

- Our limited operating history makes it difficult to evaluate our future prospects and the risks and challenges we may encounter.
- We have incurred significant losses since inception, we expect to incur significant losses in the future and we may not be able to generate sufficient revenue to achieve and maintain profitability.
- We have no history commercializing our products or technology, which makes it difficult to evaluate our prospects and predict our future performance.
- The life sciences technology market is highly competitive. If we fail to compete effectively, our business and operating results will suffer.
- If we are sued for infringing, misappropriating or otherwise violating intellectual property rights of third parties, such litigation could be costly and time consuming and could prevent or delay us from developing or commercializing our product candidates.
- If our products fail to achieve early customer and scientific acceptance, we may not be able to achieve broader market acceptance for our products, and our revenues and prospects may be harmed.
- We expect to be highly dependent upon revenue generated from the sale of our G4 Integrated Solution, and any delay or failure by us to finalize the development and to begin to commercialize our G4 Integrated Solution will have a substantial adverse effect on our business and results of operations.
- Our business will depend significantly on research and development spending by academic institutions and other research institutions, and any reduction in spending could limit demand for our products and adversely affect our business, results of operations, financial condition and prospects.
- Our operating results may fluctuate significantly in the future, which makes our future operating results difficult to predict and could cause our operating results to fall below expectations or any guidance we may provide.
- The COVID-19 pandemic and efforts to reduce its spread have adversely impacted, and are expected to continue to materially and adversely impact, our business and operations.

- We have not commercially launched any products, and we may not be able to successfully commercially launch our G4 Integrated Solution or planned PX Integrated Solution as planned.
- If we are unable to obtain and maintain sufficient intellectual property protection for our products and technology, or if the scope of the intellectual property protection obtained is not sufficiently broad, our competitors could develop and commercialize products similar or identical to ours, and our ability to successfully commercialize our products may be impaired.
- We may require substantial additional funding, which may not be available to us on acceptable terms, or at all, and, if not available, may require us to delay, scale back, or cease our product development programs or operations.

Corporate Information

We were incorporated in Delaware in 2016. Our principal executive offices are located at 10931 North Torrey Pines Road, Suite #100, La Jolla, California 92037. Our telephone number is (858) 333-7830. Our website address is www.singulargenomics.com. Information contained on the website is not incorporated by reference into this prospectus. We have included our website address in this prospectus solely as an inactive textual reference.

Singular Genomics, the Singular Genomics logo and our other registered or common law trademarks appearing in this prospectus are the property of Singular Genomics Systems, Inc. This prospectus contains references to our trademarks and service marks and to those belonging to other entities. Solely for convenience, trademarks and trade names referred to in this prospectus, including logos, artwork and other visual displays, may appear without the ®, TM or SM symbols, but such references are not intended to indicate in any way that we will not assert, to the fullest extent under applicable law, our rights or the rights of the applicable licensor to these trademarks and trade names. We do not intend our use or display of other entities' trade names, trademarks or service marks to imply a relationship with, or endorsement or sponsorship of us by, any other entity.

Recent Developments

2021 Notes Financing

In February 2021, we sold and issued approximately $130.5 million aggregate principal amount of convertible promissory notes (the 2021 Notes) in a private placement transaction. The 2021 Notes accrue 6% interest per annum and will automatically convert into shares of our common stock in connection with the completion of this offering at a conversion price equal to the lower of (i) 80% of the initial public offering price per share and (ii) the price per share obtained by dividing $1.5 billion by the fully-diluted capitalization of our Company prior to the completion of this offering. In connection with this offering, assuming an initial public offering price of $ per share, which is the midpoint of the price range set forth on the cover page of this prospectus, we anticipate the 2021 Notes will convert into an aggregate of shares of our common stock. For further information regarding the Note Conversion, see the section titled "Capitalization—2021 Notes".

Implications of Being an Emerging Growth Company

We are an "emerging growth company" as defined in the Jumpstart Our Business Startups Act of 2012, as amended, or the JOBS Act. We will remain an emerging growth company until the earliest to occur of: (i) the last day of the fiscal year in which we have more than $1.07 billion in annual gross revenue; (ii) the date we qualify as a "large accelerated filer" as defined in Rule 12b-2 under the Exchange Act, with at least $700 million of equity securities held by non-affiliates; (iii) the issuance, in any three-year period, by us of more than $1.0 billion in non-convertible debt securities; or (iv) the last day of the fiscal year ending after the fifth anniversary of our

initial public offering. As a result of this status, we have taken advantage of certain exemptions from various reporting requirements in this prospectus that are applicable to other publicly-traded entities that are not emerging growth companies and may elect to take advantage of other exemptions from reporting requirements in our future filings with the SEC. In particular, in this prospectus, these exemptions include:

- the option to present only two years of audited financial statements and only two years of Management's Discussion and Analysis of Financial Condition and Results of Operations;
- not being required to comply with the auditor attestation requirements of Section 404(b) of the Sarbanes-Oxley Act of 2002, as amended, or the Sarbanes Oxley Act;
- not being required to submit certain executive compensation matters to stockholder advisory votes, such as "say-on-pay," "say-on-frequency," and "say-on-golden parachutes;" and
- not being required to disclose certain executive compensation-related items such as the correlation between executive compensation and performance and comparisons of the chief executive officer's compensation to median employee compensation.

As a result, we do not know if some investors will find our common stock less attractive. The result may be a less active trading market for our common stock, and the price of our common stock may become more volatile.

In addition, Section 107 of the JOBS Act provides that an emerging growth company can take advantage of an extended transition period for complying with new or revised accounting standards, delaying the adoption of these accounting standards until they would apply to private companies. We have elected to avail ourselves of this exemption and, as a result, we will adopt new or revised accounting standards on the relevant dates on which adoption of such standards is required for private companies. Accordingly, the information contained herein may be different than the information you receive from other public companies in which you hold stock.

THE OFFERING

Common stock offered by us	shares.
Option to purchase additional shares	We have granted the underwriters an option for a period of 30 days to purchase up to additional shares of our common stock.
Common stock to be outstanding immediately after this offering	shares (or shares if the underwriters exercise their option to purchase additional shares in full).
Use of proceeds	We estimate that the net proceeds from this offering will be approximately $ million (or $ million if the underwriters exercise their option to purchase additional shares in full), based on the assumed initial public offering price of $ per share, which is the midpoint of the price range set forth on the cover page of this prospectus, and after deducting the estimated underwriting discounts and commissions and estimated offerings expenses payable by us. We currently intend to use the net proceeds from this offering, together with our existing cash and cash equivalents and short-term investments, to finalize the development and commercialization of our G4 Integrated Solution; to fund the product development and commercialization of our PX Integrated Solution; and the remainder, if any, for other development work associated with advancing the integration of our core sequencing engine into other platforms and kits, working capital and other general corporate purposes. In addition, we may use a portion of the net proceeds to acquire complementary businesses, products, services, or technologies. However, we have no current understandings, agreements or commitments for any specific material acquisitions at this time. See the section titled “Use of Proceeds” for additional information.
Directed share program	At our request, the underwriters have reserved up to 5% of the common stock being offered by this prospectus for sale at the initial public offering price to our directors, officers, employees and other individuals associated with us and members of their families. The sales will be made by UBS Financial Services Inc., a selected dealer affiliated with UBS Securities LLC, an underwriter of this offering, through a directed share program. We do not know if these persons will choose to purchase all or any

	portion of these reserved shares, but any purchases they do make will reduce the number of shares available to the general public. Any reserved shares not so purchased will be offered by the underwriters to the general public on the same terms as the other shares of common stock. Participants in the directed share program who purchase more than $1 million of shares shall be subject to a 25-day lock-up with respect to any shares sold to them pursuant to that program. This lock-up will have similar restrictions and an identical extension provision to the lock-up agreements described below. Any shares sold in the directed share program to our directors or executive officers shall be subject to the lock-up agreements described below.
Risk Factors	See the section titled "Risk Factors" and the other information included in this prospectus for a discussion of factors you should consider carefully before deciding to invest in our common stock.
Proposed Nasdaq trading symbol	"OMIC"

The number of shares of our common stock to be outstanding after this offering is based on shares of our common stock outstanding as of March 31, 2021 and reflects shares of our common stock issuable upon conversion of the 2021 Notes assuming an initial public offering price of $ per share, which is the midpoint of the price range set forth on the cover page of this prospectus (the Note Conversion). For further information regarding the Note Conversion, see the section titled "Capitalization—2021 Convertible Notes." The number of shares of our common stock to be outstanding after this offering excludes the following:

- 4,475,799 shares of common stock issuable upon the exercise of stock options outstanding as of March 31, 2021, with a weighted-average exercise price of $3.05 per share;
- shares of common stock issuable upon the exercise of stock options granted after March 31, 2021, with a weighted-average exercise price of $ per share;
- 3,202,996 shares of common stock issued as of March 31, 2021 upon the early exercise of certain stock options, but not deemed outstanding as they are subject to a right of repurchase;
- 129,156 shares of our common stock issuable upon the exercise of an outstanding warrant held by Silicon Valley Bank to purchase shares of our Series B convertible preferred stock (the SVB warrant) (which will convert into a warrant to purchase 129,156 shares of our common stock immediately prior to the completion of this offering) with an exercise price of $2.32 per share;
- 934,124 shares of common stock reserved for future issuance under our 2016 Stock Plan (the 2016 Plan), as of March 31, 2021, which shares will be added to the shares to be reserved under our 2021 Equity Incentive Plan (the 2021 Plan) upon its effectiveness;
- shares of common stock reserved for future issuance under our 2021 Plan, which will become effective on the business day immediately prior to the date of effectiveness of the registration statement of which this prospectus forms a part, as well as any automatic increases in the number of shares of common stock reserved for future issuance under this plan; and
- shares of common stock reserved for issuance under our 2021 Employee Stock Purchase Plan (the 2021 ESPP), which will become effective on the business day immediately prior to the date of

effectiveness of the registration statement of which this prospectus forms a part, as well as any automatic increases in the number of shares of common stock reserved for future issuance under this plan.

Unless otherwise indicated, all information in this prospectus assumes or gives effect to:

- no exercise of the outstanding stock options and warrant described above;
- a -for- reverse stock split of our common stock, which was effected on , 2021;
- the automatic conversion of the SVB warrant to purchase 129,156 shares of our convertible preferred stock described above into a warrant to purchase an aggregate of 129,156 shares of our common stock immediately prior to the completion of this offering;
- the automatic conversion of all outstanding shares of our convertible preferred stock into 38,826,388 shares of our common stock immediately prior to the completion of this offering;
- the conversion of the 2021 Notes into shares of our common stock immediately prior to the completion of this offering;
- the filing of our amended and restated certificate of incorporation (certificate of incorporation), and the adoption of our amended and restated bylaws (bylaws), immediately prior to the completion of this offering; and
- no exercise by the underwriters of their option to purchase up to an additional shares of our common stock.

SUMMARY FINANCIAL DATA

The following tables set forth a summary of our historical financial data as of, and for the periods ended on, the dates indicated. The statements of operations data for the years ended December 31, 2019 and 2020 are derived from our audited financial statements and related notes included elsewhere in this prospectus. The statements of operations data for the three months ended March 31, 2020 and 2021 are derived from our unaudited financial statements and related notes included elsewhere in this prospectus. Our historical results are not necessarily indicative of results that may be expected in the future and the results for the three months ended March 31, 2021, are not necessarily indicative of results that may be expected for the full year or any other period. You should read these data together with our financial statements and related notes appearing elsewhere in this prospectus and the information in the section titled "Management's Discussion and Analysis of Financial Condition and Results of Operations." Our historical results are not necessarily indicative of the results to be expected in the future.

	Year Ended December 31,		Three Months Ended March 31,	
	2019	2020	2020	2021
			(unaudited)	
	(in thousands, except share and per share data)			
Statements of Operations and Comprehensive Loss				
Operating expenses:				
Research and development	$ 10,484	$ 21,247	$ 4,026	$ 6,608
General and administrative	2,286	6,287	1,377	3,654
Total operating expenses	$ 12,770	$ 27,534	$ 5,403	$ 10,262
Loss from operations	(12,770)	(27,534)	(5,403)	(10,262)
Other income (expense):				
Interest and other income	463	505	216	131
Interest expense	(17)	(718)	(66)	(188)
Change in fair value of convertible promissory notes	—	—	—	(11,400)
Change in fair value of warrant liability	—	(198)	—	(2,202)
Total other income (expense)	501	(370)	150	(13,659)
Net loss	$ (12,324)	$ (27,945)	$ (5,253)	$ (23,921)
Other comprehensive loss:				
Unrealized gain on available-for-sale securities	48	3	(542)	(49)
Comprehensive loss	$ (12,276)	$ (27,942)	$ (5,795)	$ (23,970)
Net loss per share attributable to common stockholders:				
Basic and diluted	$ (1.43)	$ (2.64)	$ (0.52)	$ (2.05)
Weighted-average shares of common stock outstanding:				
Basic and diluted	8,620,121	10,575,941	10,191,923	11,652,998
Pro forma net loss per share, basic and diluted (unaudited)(1)		$		$
Pro forma weighted-average shares of common stock outstanding, basic and diluted (unaudited)(1)				

(1) For the calculation of our basic and diluted net loss per share, basic and diluted pro forma net loss per share and weighted-average number of shares used in the computation of the per share amounts, see Note 2 to our financial statements included elsewhere in this prospectus.

	As of March 31, 2021		
	Actual	Pro Forma(1) (unaudited) (in thousands)	Pro Forma As Adjusted(2)(3)
Balance Sheet Data			
Cash and cash equivalents	$45,526	$	$
Short-term investments	104,595		
Working capital(4)	143,600		
Total assets	155,623		
Convertible Promissory Notes	130,500		
Long-term debt, net of debt discount	9,473		
Convertible preferred stock	69,184		
Total stockholders' (deficit) equity	(73,342)		

(1) The pro forma balance sheet data gives effect to (i) the conversion of all outstanding shares of our convertible preferred stock as of March 31, 2021 into an aggregate of shares of common stock, which will occur immediately prior to the completion of this offering and the filing and effectiveness of our amended and restated certificate of incorporation, (ii) the automatic conversion of our outstanding warrant to purchase convertible preferred stock into a warrant to purchase shares of our common stock, (iii) the conversion of the 2021 Notes into shares of our common stock and a charge to accumulated deficit of $ million related to the conversion of the 2021 Notes , assuming an initial public offering price of $ per share, which is the midpoint of the price range set forth on the cover page of this prospectus, in connection with the closing of this offering (which is reflected in pro forma cash and cash equivalents, short-term investments and additional paid in capital) and (iv) the filing and effectiveness of our amended and restated certificate of incorporation, which will be in effect immediately prior to the completion of this offering.

(2) The pro forma as adjusted balance sheet data gives effect to: (i) the pro forma adjustments described in footnote (1) above and (ii) to the issuance and sale of shares of common stock in this offering at the assumed initial public offering price of $ per share, which is the midpoint of the price range set forth on the cover page of this prospectus, after deducting the estimated underwriting discounts and commissions and estimated offering expenses payable by us.

(3) Each $1.00 increase or decrease in the assumed initial public offering price of $ per share, which is the midpoint of the offering price range set forth on the cover page of this prospectus, would increase or decrease, as applicable, the pro forma as adjusted amount of each of our cash and cash equivalents, short-term investments, working capital, total assets, and total stockholders' (deficit) equity by approximately $ million, assuming that the number of shares offered by us, as set forth on the cover page of this prospectus, remains the same and after deducting the estimated underwriting discounts and commissions and estimated offering expenses payable by us. Similarly, each increase or decrease of 1.0 million shares in the number of shares offered by us at the assumed initial public offering price after deducting the estimated underwriting discounts and commissions and estimated offering expenses payable by us would increase or decrease, as applicable, each of our cash and cash equivalents, short-term investments, working capital, total assets and total stockholders' (deficit) equity by approximately $ million. The pro forma information discussed above is illustrative only and will be adjusted based on the actual initial public offering price and other terms of our initial public offering determined at pricing.

(4) Working capital is defined as current assets less current liabilities. See our financial statements and the related notes included elsewhere in this prospectus for further details regarding our current assets and current liabilities.

RISK FACTORS

Investing in our common stock is speculative and involves a high degree of risk. Before investing in our common stock, you should consider carefully the risks described below, together with the other information contained in this prospectus, including our consolidated financial statements and the related notes appearing at the end of this prospectus and the section titled "Management's Discussion and Analysis of Financial Condition and Results of Operations" in this prospectus. If any of the following risks occur, our business, financial condition, results of operations and future growth prospects could be materially and adversely affected. In these circumstances, the market price of our common stock could decline, and you may lose all or part of your investment. This prospectus also contains forward-looking statements that involve risks and uncertainties. Our actual results could differ materially from those anticipated in the forward-looking statements as a result of a number of factors, including the risks described below.

Risks Related to Our Business and Industry

Our limited operating history makes it difficult to evaluate our future prospects and the risks and challenges we may encounter.

We operate in a highly competitive market characterized by rapid technological advances, frequent new product introductions, evolving industry standards and changing customer preferences. Our limited operating history makes it difficult to evaluate our future prospects and our ability to respond to our competitors, changes in our market and the risks and challenges we may encounter as we expand our business operations. If we fail to address the risks, uncertainties and difficulties that we face, including those described elsewhere in this "Risk Factors" section, our business, financial condition and results of operations could be adversely affected. We have encountered in the past, and will encounter in the future, risks and uncertainties frequently experienced by companies developing and introducing new products in competitive and rapidly changing markets. If our assumptions regarding these risks and uncertainties, which we use to plan and operate our business, are incorrect or change, or if we do not address these risks and uncertainties successfully, our results of operations could differ materially from our expectations and our business, financial condition and results of operations could be adversely affected.

We have incurred significant losses since inception, we expect to incur significant losses in the future and we may not be able to generate sufficient revenue to achieve and maintain profitability.

We are a pre-revenue life science technology company and have incurred significant losses since we were formed in 2016. We expect to continue to incur significant losses for the foreseeable future as we expand our business operations, continue to develop our products and implement our business plans and strategies. Our net loss for the years ended December 31, 2019 and 2020 was $12.3 million and $27.9 million, respectively. During the three months ended March 31, 2021, we incurred a net loss of $23.9 million. As of March 31, 2021, we had an accumulated deficit of $77.0 million. We expect that our losses will continue for the foreseeable future as we continue to invest significant additional funds toward ongoing research and development and toward the timely commercialization of our products. We have experienced these losses and accumulated deficit primarily due to the investments we have made in developing our proprietary technologies and products, building our team and manufacturing capabilities and preparing for the commercial launch of our first product, the G4 Integrated Solution. Over the next several years, we expect to continue to incur significant expenses as we continue our research and development activities, finalize the development of our G4 and PX Integrated Solutions, continue to build our sales and marketing organization and increase our manufacturing and commercialization capabilities. These efforts may prove to be more costly, or take longer, than we currently anticipate. Additionally, we may encounter unforeseen expenses, product development or manufacturing delays, declines in revenue or other unknown factors that may result in losses in future periods. We have not generated any product revenue, and we may never generate revenue sufficient to offset our expenses, or at all. In addition, as a public company, we will incur significant legal, accounting, administrative, insurance and other expenses that we did not incur as a private

company. To date, we have financed our operations principally from the sale of convertible preferred stock, convertible notes and the incurrence of other indebtedness. There can be no assurance that our revenue and gross profit will increase sufficiently such that our net losses decrease, or that we attain profitability, in the future. Further, our limited operating history makes it difficult to effectively plan for and model our operating expenses and our ability to generate revenue. Our ability to achieve and then sustain profitability is based on numerous factors, many of which are beyond our control, including the impact of market acceptance of our products, product development results and timing, offerings or actions taken by our competitors, our market penetration and margins and current and future litigation. We may never be able to generate sufficient revenue to achieve or sustain profitability, which could negatively impact the value of our common stock.

We are a pre-revenue life science technology company in the development stage and have no history commercializing our products or technology, which makes it difficult to evaluate our prospects and predict our future performance.

We have not finalized the development or commercialized any of our products or technology and have not generated any revenue to date. There can be no assurance that we will be able to generate sufficient revenue in the future to support our operations and plans. Our operations to date have been focused on developing our technologies and products, including our G4 Integrated Solution. We have completed our beta pilot program for our G4 Integrated Solution and anticipate initiating an early access program followed by a commercial launch of our G4 Integrated Solution by the end of 2021, with intentions for units to ship in the first half of 2022. The performance of our integrated solutions in our beta pilot program and early access program may not be indicative of the performance our customers experience following commercial launch and may prove to be inaccurate. There can be no assurance that we will be able to timely finalize the development of or achieve market acceptance for our G4 Integrated Solution in the future. In particular, it is possible that customers in the early access program may form negative impressions of our G4 Integrated Solution, encounter errors in results or otherwise believe that our G4 Integrated Solution does not compare favorably to competing systems. Further, we have not finalized the development of our G4 Integrated Solution or manufactured our G4 Integrated Solution in commercial quantities, conducted sales and marketing activities at scale or managed customer support at the commercial level. Consequently, predictions about our future success or viability are highly uncertain and hard to predict as a result of our limited operating history, the development stage of our products and our lack of any history commercializing our technologies or products. Our prospects must be considered in light of the uncertainties, risks, expenses, and difficulties frequently encountered by companies in their early stages of operations.

Further, we will eventually need to transition from a company with a focus on research and development to a company capable of supporting both research and development and robust manufacturing and commercial activities, and we may not be successful in such a transition. We have encountered in the past, and will encounter in the future, risks and uncertainties, delays and scientific setbacks frequently experienced by development stage companies with limited operating histories in competitive and rapidly changing industries, such as the genomics industry. If our assumptions regarding these risks and uncertainties, which we use to plan and operate our business, manufacturing and commercialization activities, are incorrect or change, or if we do not address these risks, delays or uncertainties successfully, our results of operations could differ materially from our expectations, and our business, financial condition and results of operations could be adversely affected.

The life sciences technology market is highly competitive. If we fail to compete effectively, our business and operating results will suffer.

We face significant competition in the life sciences technology market. More specifically, the NGS market is characterized by rapid technological changes, frequent new product introductions, established and emerging competition, extensive intellectual property disputes and litigation, price competition, aggressive marketing practices, evolving industry standards and changing customer preferences. Our primary competitors are large publicly-traded companies, or are divisions of large publicly-traded companies, including 10x Genomics Inc.,

Becton, Dickinson and Company, Bio-Rad Laboratories, Inc., Illumina Inc., MissionBio Inc., and Nanostring Technologies, Inc., Oxford Nanopore Technologies Inc., Pacific Biosciences Inc., and Thermo Fisher Scientific Inc. There are other companies, both established and early-stage, that have indicated that they are designing and plan to manufacture and offer NGS technologies and products to our target customers. We also face competition from companies and research institutes developing their own products or applications for omics research. This is particularly true for the largest research centers and laboratories who are continually testing and trying new technologies, whether from a third-party vendor or developed internally.

Our current competitors, including those who are large publicly-traded companies, or are divisions of large publicly-traded companies, enjoy a number of competitive advantages over us, including:

- greater name and brand recognition;
- greater financial and human resources;
- established and trusted commercial relationships with our target customers;
- broader product lines;
- greater pricing flexibility, including the ability to offer significant discounts and to bundle products and services;
- larger sales and customer service forces and more established distributor networks;
- substantial intellectual property portfolios;
- exclusive and/or long-term supply agreements with our target customers;
- approvals with the U.S. Food and Drug Administration (the FDA) that allow our competitors to market their products for additional uses;
- numerous scientific papers and publications supporting their technologies and product claims; and
- better established, larger scale and lower cost manufacturing capabilities.

We cannot assure investors that we can successfully compete with these competitors or that our G4 Integrated Solution, our planned PX Integrated Solution or any other technologies and products we develop can compete favorably with the offerings from such competitors. We also cannot assure investors that we can successfully defend our technologies and products from lawsuits filed by our competitors without significant expenses, the requirement to complete additional product and technology development, potential commercialization delays, or at all. Further, we cannot assure investors that we will be successful in the face of increasing competition from products and technologies introduced by our existing or future competitors, or developed by our customers internally. In addition, we cannot assure investors that our competitors do not have or will not develop products or technologies that currently or in the future will enable them to offer products with greater capabilities or at lower costs than ours or that are able to run comparable experiments at a lower total experiment costs. Many of our competitors have also been able to enter into long-term, exclusive agreements with major potential customers, often by offering favorable pricing and other terms. Until these agreements expire, our ability to place our integrated solutions with these customers will be limited. Even after exclusive agreements expire, we may not be able to compete with the terms offered by our competitors in their efforts to extend exclusive relationships with these major potential customers. Any failure to compete effectively could materially and adversely affect our business, financial condition and operating results.

If our products fail to achieve early customer and scientific acceptance, we may not be able to achieve broader market acceptance for our products, and our revenue and prospects may be harmed.

We cannot guarantee that customer experiences or reviews of our G4 Integrated Solution from our early access program will be favorable. The customers in these programs may not use our G4 Integrated Solution as we

intend, interpret results incorrectly or may experience breakdowns, manufacturing defects, errors or bugs common with beta and early access product introductions, which could negatively impact their perception of our G4 Integrated Solution regardless of its actual capabilities. Initial negative perception of our G4 Integrated Solution by customers in our early access program could irreparably damage our reputation and ability to later successfully commercialize our G4 Integrated Solution, our planned PX Integrated Solution or any of our other future products. Further, the life sciences scientific community is comprised of a small number of early adopters and key opinion leaders (KOLs) who significantly influence the rest of the community and the marketplace in general. The success of life sciences products is due, in large part, to acceptance by the scientific community and their adoption of certain products as best practice in the applicable field of research. The current system of academic and scientific research views publishing in a peer-reviewed journal as a measure of success. In such journal publications, the researchers will describe not only their discoveries, but also the methods and typically the products used to fuel such discoveries. Mentions in peer-reviewed journal publications are a good barometer for the general acceptance of our products as best practices. Ensuring that early adopters and KOLs publish research involving the use of our products is critical to ensuring our products gain widespread acceptance and market growth. Continuing to maintain good relationships with such KOLs is vital to growing the acceptance of our products in the marketplace. If early adopters and KOLs do not favorably describe the use of our products, do not compare our products favorably to existing products and technologies, or negatively describe the use and operation of our products in publications, it may drive potential customers away from our products and prevent broader market acceptance of our products, which could harm our business, financial condition and results of operations.

We expect to be highly dependent upon revenue generated from the sale of our G4 Integrated Solution, and any delay or failure by us to finalize the development and to begin to commercialize our G4 Integrated Solution will have a substantial adverse effect on our business and results of operations.

We have completed our beta pilot program for our G4 Integrated Solution and anticipate initiating an early access program followed by a commercial launch of our G4 Integrated Solution and its first associated products by the end of 2021, with intentions for units to ship in the first half of 2022. Our second planned product, the PX Integrated Solution, is still under development, and we do not anticipate the commercial launch of our PX Integrated Solution and its first associated products until 2023. As a result, we expect to generate substantially all of our revenue in the near term from the sale of our G4 Integrated Solution. There can be no assurance that we will finalize the development of our G4 Integrated Solution on a timely basis, that our G4 Integrated Solution will meet our targeted performance metrics, that the G4 Integrated Solution will meet the expectations of our customers or otherwise gain market acceptance, that we can manufacture our G4 Integrated Solution in commercial quantities, that we will be able to successfully commercialize our G4 Integrated Solution or that we will be able to service and maintain our G4 Integrated Solutions that we have sold. Further, there is no assurance that we will be able to successfully complete the development of, or commercialize, our planned PX Integrated Solution, or any other future products or product enhancements we elect to pursue. To date, we have no experience simultaneously designing, testing, manufacturing and selling products and there can be no assurances we will be successful in doing so. In addition, as technologies change in the life sciences research tools marketplace in general, and in the omics technologies marketplace specifically, we will be expected to upgrade or adapt our products in order to keep up with the latest technology. Further, our competitors may offer or develop products or technologies that cause our G4 Integrated Solution or our planned PX Integrated Solution to not be commercially attractive to our customers

Our future financial performance will be dependent upon our ability to increase penetration and utilization in our existing markets.

Our financial performance will be driven by, and a key factor to our future success will be, the rate of commercial adoption of our G4 Integrated Solution and planned PX Integrated Solution. In addition, our financial performance will be dependent on our ability to increase customer utilization of our integrated solutions, and thereby, increase sales of our consumables and any other associated products and services we

offer. There is no assurance that we will be successful in demonstrating our product performance claims and value proposition to potential customers. There also is no assurance that our direct sales and marketing organization in the United States or our direct or distributor sales and marketing efforts in markets outside the United States will drive broad customer adoption of our integrated solutions. Further, we may not be successful in increasing our customers' usage of our integrated solutions, or their associated purchase of our consumables and other products and services. Any failure to establish a broad installed base of our G4 Integrated Solution and our planned PX Integrated Solution solutions among our target customers, or failure to increase the usage of our integrated solutions and the associated sales of our consumables and other products and services, will limit our revenue growth and harm our results of operations and financial performance.

Our business will depend significantly on research and development spending by academic institutions and other research institutions, and any reduction in spending could limit demand for our products and adversely affect our business, results of operations, financial condition and prospects.

We plan to initially target customers who are already familiar with genomic analysis, including academic institutions, genomic research centers/core labs and government laboratories, as well as pharmaceutical, clinical research organizations (CROs), biotechnology, consumer genomics, commercial molecular diagnostic laboratories, and agrigenomics companies. However, we believe that a substantial amount of our sales revenue in the near term will be generated from sales to academic and other research institutions. Therefore, we expect much of these customers' funding will be, in turn, provided by various state, federal and international governmental agencies. As a result, the demand for our G4 Integrated Solution, our planned PX Integrated Solution and any other product or product enhancements we elect to develop in the future may depend in part upon the research and development budgets of these customers, which are impacted by factors beyond our control, such as:

- decreases in government funding of research and development;
- changes to programs that provide funding to research laboratories and institutions, including changes in the amount of funds allocated to different areas of research or changes that have the effect of increasing the length of the funding process;
- macroeconomic conditions and the political climate;
- scientists' and customers' opinions of the utility of new products or services;
- researchers' opinions of the utility of our G4 Integrated Solution, our planned PX Integrated Solution or any other product or product enhancements we elect to develop in the future;
- citation of our G4 Integrated Solution and planned PX Integrated Solution in published research;
- potential changes in the regulatory environment;
- differences in budgetary cycles, especially government- or grant-funded customers, whose cycles often coincide with government fiscal year ends;
- competitor product offerings or pricing;
- market acceptance of new technologies; and
- market driven pressures to consolidate operations and reduce costs.

In addition, various state, federal and international agencies that provide grants and other funding may be subject to stringent budgetary constraints that could result in spending reductions, reduced grant making, reduced allocations or budget cutbacks, which could jeopardize the ability of these customers, or the customers to whom they provide funding, to purchase our products. For example, congressional appropriations to the National Institutes of Health (the NIH) have generally increased year-over-year for the last 20 years, but the NIH also experiences occasional year-over-year decreases in appropriations, including as recently as 2013. There is no

guarantee that NIH appropriations will not decrease in the future. A decrease in the amount of, or delay in the approval of, appropriations to NIH or other similar United States or international organizations, such as the Medical Research Council in the United Kingdom, could result in fewer grants benefiting life sciences research. These reductions or delays could also result in a decrease in the aggregate amount of grants awarded for life sciences research or the redirection of existing funding to other projects or priorities, any of which in turn could cause our customers and potential customers to reduce or delay purchases of our products. Our operating results may fluctuate substantially due to any such reductions and delays. Any decrease in our customers' budgets or expenditures, or in the size, scope or frequency of their capital or operating expenditures, could materially and adversely affect our business, results of operations, financial condition and prospects.

Our operating results may fluctuate significantly in the future, which makes our future operating results difficult to predict and could cause our operating results to fall below expectations or any guidance we may provide.

We have very limited operating history in manufacturing, commercializing and providing customer support for our first product, the G4 Integrated Solution. As a result, our quarterly and annual operating results may fluctuate significantly as we finalize the development of G4 Integrated Solution and begin these new manufacturing, commercialization and customer support activities, which makes it difficult for us to predict our future operating results. These fluctuations may occur due to a variety of factors, many of which are outside of our control, including but not limited to:

- our ability to finalize the development and successfully manufacture and commercialize our products and technologies, including our G4 Integrated Solution and our planned PX Integrated Solution, on our anticipated timelines and costs;
- the timing and cost of, and level of investment in, research and development, manufacturing and commercialization activities relating to our products and technologies, which may change from time to time;
- the level of demand for any products or product enhancements we are able to commercialize, particularly our G4 Integrated Solution and our planned PX Integrated Solution, which may vary significantly from period to period;
- market acceptance of our products, especially by early adopters and KOLs;
- our ability to drive adoption of our products and technologies, including our G4 Integrated Solution and our planned PX Integrated Solution, in our target markets and our ability to expand into any future target markets;
- the prices at which we will be able to sell our products and technologies;
- our ability to lower the cost of manufacturing our products and product enhancements;
- the availability and cost of components and raw materials;
- actions taken by our competitors, including new product introductions, pricing changes, product bundling and aggressive marketing practices;
- intellectual property disputes and litigation;
- the outcomes of and related rulings in litigation and administrative proceedings in which we may in the future become involved in;
- the operating performance and financial results of our competitors;
- the volume and mix of our sales between our G4 Integrated Solution and our planned PX Integrated Solution and other products and technologies, or changes in the manufacturing or sales costs related to our products;

- the utilization of our instruments and the volume and mix of the sales of our consumables;
- the length of time of the sales cycle for purchases of our products and technologies, including our G4 Integrated Solution and our planned PX Integrated Solution;
- the timing and amount of expenditures that we may incur to develop, commercialize or acquire additional products and technologies or for other purposes, such as the expansion of our facilities;
- changes in governmental funding of life sciences research and development or changes that impact budgets or budget cycles;
- the timing of when we recognize any revenue;
- future accounting pronouncements or changes in our accounting policies;
- the outcome of any future governmental investigations involving us, our industry or both;
- higher than anticipated service, replacement and warranty costs;
- the impact of the COVID-19 pandemic on the economy, our business and operations, investment in life sciences and research industries, and resources and operations of our customers, suppliers, and distributors;
- general industry, economic and market conditions and other factors, including factors unrelated to our operating performance or the operating performance of our competitors; and
- the other factors described in this "Risk Factors" section.

The cumulative effects of the factors discussed above could result in large fluctuations and unpredictability in our quarterly and annual operating results. As a result, comparing our operating results on a period-to-period basis may not be meaningful. Investors should not rely on our past results as an indication of our future performance. This variability and unpredictability could also result in our failing to meet the expectations of industry or financial analysts or investors for any period. If we are unable to commercialize products or generate revenue, or if our operating results fall below the expectations of analysts or investors or below any guidance we may provide, or if the guidance we provide is below the expectations of analysts or investors, it could cause the market price of our common stock to decline.

We expect to continue to incur substantial operating expenses in the future, which will negatively impact our ability to achieve or maintain profitability.

We have experienced net losses and negative cash flows from operations since our formation in 2016. As of March 31, 2021, we had an accumulated deficit of $77.0 million. Over the next several years, we expect to continue to incur significant expenses as we continue our research and development activities, finalize the development of our integrated solutions, continue to build our sales and marketing organization and increase our manufacturing and commercialization capabilities. These efforts may prove to be more costly, or take longer, than we currently anticipate. In addition, as a public company, we will incur significant legal, accounting, administrative, insurance and other expenses that we did not incur as a private company. We have not generated any product revenue, and we may never generate revenue sufficient to offset our expenses, or at all. If our revenue does not eventually grow to a level that exceeds our expenses, we will not be able to achieve or maintain profitability. Additionally, we may encounter unexpected development delays, unforeseen expenses, operating delays, declines in revenue or other unknown factors that may result in losses in future periods. If we are unable to achieve and maintain sustained profitability, our business, results of operations, financial condition and prospects will be materially harmed.

The COVID-19 pandemic and efforts to reduce its spread have adversely impacted, and are expected to continue to materially and adversely impact, our business and operations.

The COVID-19 pandemic has spread worldwide, has caused many governments to implement measures to slow the spread of the outbreak through quarantines, travel restrictions, heightened border scrutiny and other

measures. In addition, in response to the COVID-19 pandemic, many state, local and foreign governments have put in place quarantines, executive orders, shelter-in-place orders and similar government orders and restrictions in order to control the spread of the disease. Such orders or restrictions, and the perception that such orders or restrictions could continue or, after being lifted, be reinstated for a period of time, have resulted in business closures, work stoppages, slowdowns and delays, work-from-home policies, travel restrictions and cancellation of events, among other effects that have impacted, and we expect them to continue to impact, our business, personnel and personnel at third-party manufacturing facilities in the United States and other countries, and the availability or cost of materials, which would disrupt or delay our receipt of instruments, components and supplies from the third parties we rely on to, among other things, produce our products.

For instance, there have been standing "stay-at-home" orders in California, and specifically in San Diego County, where our headquarters is located. We have continued to operate within the rules applicable to our business; however, an extended implementation of these governmental mandates or reinstitution of additional more stringer mandates could further impact our ability to operate effectively and conduct ongoing research and development or other activities. Additionally, we have experienced longer lead times from our suppliers of components used in our product development and manufacturing operations. Pandemic precautions and preventative measures may also impact our commercialization plans due to restrictions on our customers' ability to access laboratories, causing delays in the delivery and installation of our products, training such customers on our products, and their ability to conduct research. The ongoing build-out of our new headquarters and manufacturing facilities may also be delayed by COVID-19 related restrictions. The COVID-19 pandemic has also had an adverse effect on our ability to attract, recruit, interview and hire at the pace we would typically expect to support our rapidly expanding operations. To the extent that any governmental authority imposes additional regulatory requirements or changes existing laws, regulations, and policies that apply to our business and operations, such as additional workplace safety measures, our product development plans may be delayed, and we may incur further costs in bringing our business and operations into compliance with changing or new laws, regulations, and policies.

In the near term, we expect that a substantial amount of our revenue will be derived from sales of our G4 Integrated Solution to academic and research institutions. Our ability to drive the adoption of our products will depend upon our ability to visit customer sites, the ability of our customers to access laboratories, install and train on our G4 Integrated Solution and conduct research in light of the COVID-19 pandemic. Additionally, the research and development budgets of these customers, the ability of such customers to receive funding for research, and the ability of such customers to receive instrument installations and visitors to their facilities and to travel to our facilities, other laboratories and industry events, will become increasingly important to the adoption of our G4 Integrated Solution. All of these activities are impacted by the COVID-19 pandemic in multiple ways, such as:

- reductions in capacity or shutdowns of laboratories and other institutions as well as other impacts stemming from the COVID-19 pandemic, such as reduced or delayed spending on instruments or consumables as a result of such shutdowns and delays before re-opened laboratories and institutions resume previous levels of research activities that require new purchases of our instruments or consumables;
- re-allocation of resources by potential customers towards COVID-19 research, testing or treatment;
- delays in obtaining supplies and materials used to produce our products;
- decreases in government funding of research and development; and
- changes to programs that provide funding to research laboratories and institutions, including changes in the amount of funds allocated to different areas of research, changes that have the effect of increasing the length of the funding process or the impact of the COVID-19 pandemic on our customers and potential customers and their funding sources.

The ultimate impact of the COVID-19 pandemic is highly uncertain and subject to sudden change. This impact could have a material, adverse impact on our liquidity, capital resources, operations and business and those of the third parties on which we rely, and could worsen over time. The extent to which the COVID-19 pandemic impacts our results will depend on future developments, which are highly uncertain and cannot be predicted, including new information which may emerge concerning the severity of COVID-19 and the actions to contain COVID-19 or treat its impact, among others. While we do not yet know the full extent of the potential future impacts on our business, any of these occurrences could significantly harm our business, results of operations and financial condition.

Further, the COVID-19 pandemic has resulted in, and may continue to result in, extreme volatility and disruptions in the capital and credit markets, reducing our ability to raise additional capital through equity, equity-linked or debt financings, which could negatively impact our short-term and long-term liquidity and our ability to operate in accordance with our operating plan, or at all. Additionally, our results of operations could be adversely affected by general conditions in the global economy and financial markets. A severe or prolonged economic downturn could result in a variety of risks to our business, including weakened demand for our products and technologies and our ability to raise additional capital when needed on favorable terms, if at all. A weak or declining economy could strain our customers' budgets or cause delays in their payments to us. Any of the foregoing could harm our business, and we cannot anticipate all of the ways in which the current economic climate and financial market conditions could adversely impact our ability to raise capital, business, results of operations and financial condition.

Risks Related to the Development and Commercialization of Our Products

We have not commercially launched any products, and our efforts to finalize the development and commercially launch our G4 Integrated Solution or our planned PX Integrated Solution may not be successful.

We have not commercially launched any product. With respect to our G4 Integrated Solution, we have completed our beta pilot program and anticipate initiating an early access program followed by a commercial launch of the G4 Integrated Solution and its first associated products by the end of 2021, with intentions for units to ship in the first half of 2022. With respect to our planned PX Integrated Solution, we are currently in an advanced prototype development stage for the initial products and expect to begin an early access program in 2022 and full commercial launch in 2023. Our product development and commercial launch plans may not progress as planned or may not be successful due to:

- potential delays in finalizing development and internal validation of our products, including the failure to meet targeted performance metrics;
- our inability to commercialize our G4 Integrated Solution and/or planned PX Integrated Solution without first being required to change the specifications, design and performance of such products, including the associated reagents and consumables;
- our inability to establish the capabilities and value proposition of our G4 Integrated Solution or our planned PX Integrated Solution with KOLs and early adopters in a timely fashion, including through information included in scientific publications and presentations;
- our inability to establish broad scientific acceptance of our G4 Integrated Solution or planned PX Integrated Solution;
- potential litigation brought by our competitors against our products, technology or intellectual property;
- our inability to overcome the long-term relationships, including exclusive agreements, that our competitors have established with our target customers;
- actions taken by our competitors, including new product introductions and the ability to offer significant discounts and to bundle products and services to our target customers;

- our customers' willingness and ability to adopt new products and workflows, including in light of commercial pressures applied by our competitors and pre-existing long-term contracts with our competitors;
- our ability to demonstrate that our G4 Integrated Solution and our planned PX Integrated Solution provide meaningful advantages over competing products and technologies;
- the prices we charge for our G4 Integrated Solution and planned PX Integrated Solution and other products and technologies;
- our ability to develop new products and workflows and solutions for customers, and the impact of our investments in product innovation and commercial growth;
- our ability to provide service and maintain the products we have sold; and
- changing industry or market conditions, customer expectations or requirements;
- delays in building out our sales, customer support and marketing organization as needed for our commercial launch plan;
- delays in ramping up manufacturing, including obtaining required materials and components from third-party suppliers, to meet expected or actual demand for our products; and
- the continued effect and lasting impact of the COVID-19 pandemic.

We cannot assure you that we will be successful in addressing each of the risks and uncertainties that might affect the development and market acceptance of any products we commercialize, particularly our G4 Integrated Solution. For example, we cannot guarantee that we will finalize the development of our G4 Integrated Solution on a timely basis, meet our targeted performance metrics for the G4 Integrated Solution or that customer experiences or reviews of our G4 Integrated Solution from our early access program will be favorable. The customers in the program may not use our G4 Integrated Solution as we intend or interpret results incorrectly, or may experience breakdowns, manufacturing defects, errors or bugs common with beta and early access product introductions, which could negatively impact their perception of our G4 Integrated Solution regardless of its actual capabilities. Initial negative perception of our G4 Integrated Solution by customers in our early access program could irreparably damage our reputation and ability to later successfully commercialize our G4 Integrated Solution or our planned PX Integrated Solution or future systems or products. In addition, as we begin to commercialize our G4 Integrated Solution we will also need to make corresponding improvements to other operational functions, such as our customer support, service and billing systems, compliance programs and our internal quality assurance programs. We cannot assure you that any increases in scale, required manufacturing improvements and quality assurance will be successfully implemented or that appropriate personnel will be available. To the extent any of our commercial launch plans and related activities are delayed, unsuccessful or more expensive than we currently anticipate, our financial results will be adversely impacted and we may never generate sufficient revenue to achieve and maintain profitability.

If we are unable to establish sales and marketing capabilities, we may not be successful in commercializing our G4 Integrated Solution or our planned PX Integrated Solution.

We have no experience commercializing our products, and our ability to achieve profitability depends on being able to successfully commercialize our G4 Integrated Solution and our planned PX Integrated Solution. Although members of our management team have considerable industry experience, we are in the process of expanding our sales, marketing, distribution and customer service and support capabilities with the appropriate technical expertise prior to the broad commercial launch of our first product, the G4 Integrated Solution. To perform sales, marketing, distribution, and customer service and support successfully, we will face a number of risks, including:

- our ability to attract, train, retain and manage the sales, marketing and customer service and support force necessary to commercialize and gain market acceptance for our products and train and support our customers in the use of our systems;

- our ability to develop marketing materials;
- our ability to adopt successful marketing and pricing strategies;
- the time and cost of establishing a specialized sales, marketing and customer service and support force; and
- our sales, marketing and customer service and support force may be unable to initiate and execute successful commercialization activities.

We may seek to enlist one or more third parties to assist with sales, distribution and customer service and support globally or in certain regions of the world. There is no guarantee, if we do seek to enter into such arrangements, that we will be successful in attracting desirable sales and distribution partners or that we will be able to enter into such arrangements on favorable terms. If our sales and marketing efforts, or those of any third-party sales and distribution partners, are not successful, our G4 Integrated Solution or our planned PX Integrated Solution, may not gain market acceptance, which could materially impact our business and results of operations.

Our Sequencing Engine and Integrated Solutions could fail to achieve key performance metrics we are targeting and our prospects could be harmed.

We believe our Sequencing Engine can impart commercially marketable capabilities to our products, including high accuracy, speed, flexibility and scale. To successfully commercialize our Integrated Solutions, we are targeting certain performance metrics, including cycle times for each base, accuracy for base reads, quality scores and the number of independent flow cells that can run concurrently. While we have preliminarily achieved certain of our targeted metrics for our G4 Integrated Solution in early testing, we have not yet achieved certain targeted metrics and, as a result, we will need to continue our product development efforts and enhance the performance of our G4 Integrated Solution prior to our planned commercial launch. If our Sequencing Engine or Integrated Solutions are unable to meet and to consistently achieve these key performance metrics, including once commercially deployed, or, if the data supporting our preliminary achievement of certain key performance metrics are incorrect or not viewed favorably by KOLs or potential customers, demand for our G4 Integrated Solution and planned PX Integrated Solution may not develop as anticipated, which could adversely affect our revenue and our results of operations.

If we fail to finalize the development of our G4 Integrated Solution and complete the development of our PX Integrated Solution our revenue and our prospects could be harmed.

Our G4 Integrated Solution has completed the beta pilot program of our commercialization plan. While we believe the development of our G4 Integrated Solution is nearly final, our collaborators in our beta pilot or early access programs may request certain design or other modifications that could cause us to modify or attempt to further improve our G4 Integrated Solution, which could delay or prevent its commercial launch. Further, we are working to develop and enhance the performance of our G4 Integrated Solution to meet targeted performance metrics that we believe are necessary to support its broad commercial adoption. Any delay or failure by us to successfully develop, release, enhance, commercialize and support our G4 Integrated Solution will have a substantial adverse effect on our business and results of operations.

Our planned PX Integrated Solution is in the development phase, and is subject to all the risks and uncertainties associated with product development of highly complex and novel life sciences instruments. We have not met a number of technical and performance metrics that we believe will be necessary to achieve prior to commercialization. If we do not achieve the required technical specifications and performance metrics for our planned PX Integrated Solution or if development work is not performed according to our planned schedule, then we may not be successful in finalizing our planned PX Integrated Solution and its commercial launch may be adversely affected, delayed or not occur at all. Additionally, our planned PX Integrated Solution could be subject to redesign or further improvements, and result in delays in finalizing development and commencing

commercialization, after feedback from beta collaborators and KOLs. Any delay or failure by us to successfully develop, release, commercialize and maintain our PX Integrated Solution will have a substantial adverse effect on our business and results of operations.

If we fail to continue to improve our planned products or, introduce compelling new products, product enhancements or product configurations, our revenue and our prospects could be harmed.

Even if we are able to commercially launch our G4 Integrated Solution, and successfully develop and commercialize our planned PX Integrated Solution, our ability to attract new customers and increase revenue from existing customers will depend in large part on our ability to continue to enhance and improve our products and to introduce compelling new products and product capabilities. The success of any enhancements to our G4 Integrated Solution or our planned PX Integrated Solution, or the introduction of any new products and product capabilities depends on several factors, including timely completion and delivery of such enhancements and products, competitive pricing, adequate quality testing, integration with existing products and technologies, appropriately timed and staged introduction, overall market acceptance and our ability to properly service and maintain these products. Any new products or enhancements that we develop may not be introduced in a timely or cost effective manner, may contain defects, errors, vulnerabilities or bugs, or may not achieve the market acceptance necessary to increase our revenue and improve our operating results. Further, if we are unable to successfully develop any new products, enhance the capabilities of our existing products to meet evolving customer requirements and demands, compete with alternative products and technologies, or otherwise gain and maintain market acceptance, our business, results of operations and financial condition could be harmed.

The sizes of the markets for our products and technologies may be smaller or grow slower than we estimate, and new markets may not develop as quickly as we expect, or at all, limiting our ability to successfully sell our products.

The market for NGS, single cell, spatial and proteomics products and technologies is evolving, making it difficult to predict with any accuracy the market opportunity for our current and future products and technologies. Our estimates of the total addressable market for our current and future products and technologies are based on a number of internal and third-party estimates and assumptions. In particular, while we believe that our target markets may be underserved by existing genomics products and technologies and that our target customers will recognize the value proposition offered by our products, we cannot be certain that our target customers will recognize enough value from our products to purchase our products in place of, or in addition to, tools and technologies they already use. Further, we cannot be certain that our target customers will view our products as competitive alternatives to existing tools and technologies in our target markets, especially given that our competitors have long relationships, including exclusive arrangements, with our target customers and may be able to offer significant discounts and/or buddle products or offerings to our target customers.

While we believe our assumptions and the data underlying our estimates of the total annual addressable market for our products and technologies are reasonable, these assumptions and estimates may not be correct and the conditions supporting our assumptions or estimates, or those underlying the third-party data we have used, may change at any time, thereby reducing the accuracy of our estimates. As a result, our estimates of the annual total addressable market for our products and technologies may be incorrect. Further, the future growth of the market for our current and future products depends on many factors beyond our control, and if the markets for our current and future products are smaller than estimated or do not develop as we expect, our growth may be limited and our business, financial condition and operational results of operations could be adversely affected.

We expect to commercialize our G4 Integrated Solution and our planned PX Integrated Solution outside of the United States, which could expose us to business, regulatory, political, operational, financial and economic risks associated with doing business outside of the United States.

Engaging in international business inherently involves a number of difficulties and risks, including:

- required compliance with existing and changing foreign regulatory requirements and laws that are or may be applicable to our business in the future, such as the European Union's General Data Protection Regulation (GDPR) and other data privacy requirements, labor and employment regulations, anti-competition regulations, the U.K. Bribery Act of 2010 and other anti-corruption laws, regulations relating to the use of certain hazardous substances or chemicals in commercial products, and require the collection, reuse, and recycling of waste from products we manufacture;
- required compliance with U.S. laws such as the Foreign Corrupt Practices Act, and other U.S. federal laws and regulations established by the office of Foreign Asset Control;
- export requirements and import or trade restrictions;
- laws and business practices favoring local companies;
- foreign currency exchange, longer payment cycles and difficulties in enforcing agreements and collecting receivables through certain foreign legal systems;
- changes in social, economic, and political conditions or in laws, regulations and policies governing foreign trade, manufacturing, research and development, and investment both domestically as well as in the other countries and jurisdictions in which we operate and into which we may sell our products including as a result of the separation of the United Kingdom from the European Union (Brexit);
- potentially adverse tax consequences, tariffs, customs charges, bureaucratic requirements, and other trade barriers;
- difficulties and costs of staffing and managing foreign operations; and
- difficulties protecting, maintaining, enforcing or procuring intellectual property rights.

If one or more of these risks occurs, it could require us to dedicate significant resources to remedy such occurrence, and if we are unsuccessful in finding a solution, our financial results will suffer.

Risks Related to Our Financial Position and Need for Additional Capital

We may require substantial additional funding, which may not be available to us on acceptable terms, or at all, and, if not available, may require us to delay, scale back, or cease our product development or commercialization activities.

Based on our current plans, we believe that our current cash and cash equivalents, short-term investments and anticipated cash flow from operations, if any, will be sufficient to (i) meet our anticipated cash requirements for at least 12 months from the date of this prospectus and, (ii) with the additional funds from the net proceeds of this offering, to finalize the development and to commence commercializing our G4 Integrated Solution and to complete the development of our planned PX Integrated Solution. If our available cash resources, net proceeds from this offering and anticipated cash flows from operations, if any, are insufficient to satisfy our liquidity requirements, we may be required to raise significant additional capital to support our continued operations and the implementation of our business plans. Our future funding requirements will depend on many factors, including but not limited to:

- our rate of progress in finalizing development, launching, commercializing and scaling the manufacturing of our G4 Integrated Solution;
- the costs of the sales and marketing activities associated with establishing adoption of our G4 Integrated Solution;

- the effect of competing technological and market developments, including our requirement to provide discounts for G4 Integrated Solution in light of competitive pressures;
- litigation expenses we incur to defend against claims that we infringe the intellectual property of others or judgments we must pay to satisfy such claims;
- our rate of progress in developing, launching and commercializing our planned PX Integrated Solution, and any new products or product enhancements we elect to pursue;
- our ability to control our manufacturing and operating costs;
- our ability to satisfy our outstanding debt obligations; and
- the costs of responding to the other risks and uncertainties described in this prospectus.

We will also be required to raise additional capital in the future to expand our business and operations, to pursue strategic investments, or for other reasons, including but not limited to:

- increasing our sales and marketing and other commercialization efforts to drive market adoption of our G4 Integrated Solution;
- commercializing our planned PX Integrated Solution;
- scaling up our manufacturing and customer support capabilities;
- funding development and marketing efforts of our other future products and product enhancements;
- expanding our technologies into additional markets;
- acquiring, licensing or investing in technologies and other intellectual property rights;
- acquiring or investing in complementary businesses or assets; and
- financing capital expenditures and general and administrative expenses.

We may seek required funding through issuances of equity or convertible debt securities, entering into additional loan facilities or drawing down additional funds under our current loan agreement with Silicon Valley Bank (the Loan Agreement). Each of the various ways we could raise additional capital carry potential risks. If we raise funds by issuing equity securities, dilution to our stockholders would result. If we raise funds by issuing additional debt securities, those debt securities would have rights, preferences and privileges senior to those of holders of our common stock. Our Loan Agreement restricts our ability to pursue certain transactions that we may believe to be in our best interest, including incurring additional indebtedness without the prior written consent of the lender under the Loan Agreement. If we raise funds through collaborations or licensing arrangements, we might be required to relinquish significant rights to our technologies or products or grant licenses on terms that are not favorable to us.

If we are unable to obtain adequate financing or financing on terms satisfactory to us, if we require it, our ability to continue to pursue our business objectives and to respond to business opportunities, challenges, or unforeseen circumstances could be significantly limited, and could have a material adverse effect on our business, financial condition, results of operations and prospects.

Our results of operations could be materially harmed if we are unable to accurately forecast customer demand for our G4 Integrated Solution, our planned PX Integrated Solution, if and once developed and commercialized, and any other future products and product enhancements we elect to pursue.

To ensure adequate inventory supply of our G4 Integrated Solution, including our G4 Instrument and the associated consumables, we must forecast our inventory needs and appropriately scale-up our manufacturing operations and personnel to build a sufficient supply of our G4 Integrated Solution prior to commercial launch.

We must also place orders with our third-party suppliers based on such forecasts. Our ability to accurately forecast demand for our G4 Integrated Solution could be negatively affected by many factors, including delays in finishing the development of our G4 Integrated Solution, the results of our beta pilot program and early access program, our ability to timely scale our manufacturing operations and capabilities, the success of our sales and marketing activities and customer acceptance of our G4 Integrated Solution as well as adverse impacts as a result of COVID-19. These same risks and uncertainties will also apply to our planned PX Integrated Solution and any other future products and product enhancements we elect to pursue.

Inventory levels in excess of customer demand may result in inventory write-downs or write-offs, which would cause our gross margin to be adversely affected and could impair the strength of our brand. Similarly, a portion of our inventory could become obsolete or expire, which could have a material and adverse effect on our earnings and cash flows due to the resulting costs associated with inventory impairment charges and costs required to replace obsolete inventory. Any of these occurrences could negatively impact our financial performance.

Conversely, if we underestimate customer demand for our G4 Integrated Solution, our planned PX Integrated Solution or any other future products and product enhancements we elect to pursue, we may not be able to deliver sufficient products to meet our customer requirements, which could result in damage to our reputation and customer relationships. In addition, if we experience a significant increase in demand, we may not be able to increase our manufacturing capacity on a timely basis. Further, we may not be able to obtain the components for our products when required on terms that are acceptable to us, or at all, which could have an adverse effect on our ability to meet customer demand and harm our business and results of operations.

Our existing indebtedness may limit our flexibility in financing and operating our business and adversely affect our business, financial condition and results of operations.

As of March 31, 2021, there was $10.0 million of principal owed under our Loan Agreement with Silicon Valley Bank. In addition to this outstanding amount, we may borrow substantial funds in the future to provide a portion of the capital needed in our business and may secure the repayment of such borrowings by placing additional liens or other encumbrances on our assets. Our Loan Agreement contains customary conditions to borrowing, events of default and affirmative and negative covenants, including covenants that restrict our ability (and the ability of certain of our subsidiaries) to incur additional indebtedness, grant liens, make certain fundamental changes and asset sales, pay dividends or make other distributions to holders of our stock, make investments or engage in transactions with our affiliates. Such restrictions could limit our ability to take certain actions could reduce our flexibility to run and manage our business which could have an adverse effect on our results of operations. The obligations under the Loan Agreement are also secured by liens on substantially all of our assets, excluding our intellectual property on which there is a negative pledge, subject to customary exceptions. If we were unable to repay amounts due under the Loan Agreement, Silicon Valley Bank could proceed against such assets. Any declaration by Silicon Valley Bank of an event of default could significantly harm our business and prospects and could cause the price of our common shares to decline.

Our ability to use our net operating loss carryforwards and certain other tax attributes may be limited.

We have incurred substantial losses during our history, which we expect to continue for the foreseeable future, and we may never achieve profitability. As of December 31, 2020, we had federal and California tax loss carryforwards of approximately $48.7 million and $47.1 million, respectively. As of December 31, 2020, we had federal and state tax credit carry forwards of approximately $1.6 million and $2.2 million, respectively. Under Sections 382 and 383 of the Internal Revenue Code of 1986, as amended, or the Code, if a corporation undergoes an “ownership change,” generally defined as a greater than 50 percentage point change (by value) in its equity ownership by certain stockholders over a three-year period, the corporation’s ability to use its pre-change net operating loss carryforwards, or NOLs, and other pre-change tax attributes (such as research tax credits) to offset its post-change income or taxes may be limited. We have not yet completed an ownership change analysis. If a

requisite ownership change occurs, the amount of remaining tax attribute carryforwards available to offset taxable income and reduce income tax expense in future years may be restricted or eliminated. Similar provisions of state tax law may also apply to limit our use of accumulated state tax attributes. In addition, at the state level, there may be periods during which the use of NOLs is suspended or otherwise limited, which could accelerate or permanently increase state taxes owed. As a result, even if we attain profitability, we may be unable to use a material portion of our NOLs and other tax attributes based on restrictions in the Code, which could adversely affect our future cash flows and results of operations.

U.S. federal income tax reform and the implementation of such reforms could adversely affect us.

On December 22, 2017, the United States enacted the Tax Cuts and Jobs Act (the TCJA) that significantly reformed the Code. The TCJA, among other things, contained significant changes to corporate taxation, including a reduction of the corporate tax rate from a top marginal rate of 35% to a flat rate of 21%, the limitation of the tax deduction for net interest expense to 30% of adjusted earnings (except for certain small businesses), the limitation of the deduction for NOLs arising in taxable years beginning after December 31, 2017 to 80% of current year taxable income and elimination of NOL carrybacks for losses arising in taxable years ending after December 31, 2017 (though any such NOLs may be carried forward indefinitely), the imposition of a one-time taxation of offshore earnings at reduced rates regardless of whether they are repatriated, the elimination of U.S. tax on foreign earnings (subject to certain important exceptions), the allowance of immediate deductions for certain new investments instead of deductions for depreciation expense over time, and the modification or repeal of many business deductions and credits. The financial statements contained herein reflect the effects of the TCJA based on current guidance. However, there remain uncertainties and ambiguities in the application of certain provisions of the TCJA, and, as a result, we made certain judgments and assumptions in the interpretation thereof.

As part of Congress's response to the COVID-19 pandemic, the Families First Coronavirus Response Act, or the FFCR Act, was enacted on March 18, 2020, and the Coronavirus Aid, Relief, and Economic Security Act, or the CARES Act, was enacted on March 27, 2020. Both contain numerous tax provisions. In particular, the CARES Act retroactively and temporarily (for taxable years beginning before January 1, 2021) suspends application of the 80%-of-income limitation on the use of NOLs, which was enacted as part of the TCJA. It also provides that NOLs arising in any taxable year beginning after December 31, 2017 and before January 1, 2021 are generally eligible to be carried back up to five years. The CARES Act also temporarily (for taxable years beginning in 2019 or 2020) relaxes the limitation of the tax deductibility for net interest expense by increasing the limitation from 30% to 50% of adjusted taxable income.

Risks Related to Manufacturing Our Products

We may be unable to manufacture our G4 Integrated Solution to meet our commercialization plans on a timely or cost effective basis.

We must successfully increase our manufacturing output to meet our commercialization plans and to support our planned commercial launch of our G4 Integrated Solution by the end of 2021, with units planned to be shipped during the first half of 2022. We currently manufacture our G4 Instrument in our facilities in La Jolla, California. We have leased and are currently building out a new manufacturing facility at a new location in La Jolla, California to support our growth and commercialization plans. In order to manufacture sufficient G4 Instruments, and the associated consumables, to meet our commercialization plans, we will need to hire and train a sufficient number of manufacturing, engineering and quality personnel. Manufacturing our G4 Instruments, and the associated consumables, requires complex processes, and depends on the skill and experience of our manufacturing personnel. The manufacturing process for our G4 Instrument, and the associated consumables, also includes sourcing components from various third-party suppliers and then assembling and testing the final product offerings. We must manufacture our G4 Integrated Solution in compliance with our demanding specifications and at an acceptable cost in order to achieve and maintain profitability. We have only a limited

history of manufacturing and assembling our G4 Instrument, and the associated consumables, and, as a result, we may have difficulty manufacturing and assembling sufficient quantities of such products in a timely manner, and in a cost effective manner. To manage our manufacturing operations and the supply of components from our third-party suppliers, we will need to forecast anticipated demand to predict our inventory needs from six months to a year in advance and enter into purchase orders on the basis of these requirements. Our limited manufacturing history may not provide us with enough data to allow us to accurately and effectively predict our manufacturing capacity requirements or our need for components from our third-party suppliers, including appropriately anticipating fluctuations in the availability and pricing of required components. We may in the future experience delays in obtaining components required for our G4 Instrument or the associated consumables, or not have sufficient manufacturing capabilities and personal for such products, which could impede our ability to manufacture and assemble these products on our expected timeline. As a result of this or any other delays, we may encounter difficulties in production of our G4 Instrument, and the associated consumables, including problems with quality control and assurance, component supply shortages or surpluses, increased costs, shortages of qualified personnel and difficulties associated with compliance with local, state, federal and foreign regulatory requirements.

We are dependent on single source suppliers for some components to our consumables and the loss of any of these suppliers could harm our business.

We do not have long-term contracts with third-party suppliers from whom we obtain some components to manufacture the consumables associated with our G4 Instrument. We are, therefore, subject to the risk that these third-party suppliers will not continue to provide us with components that meet our specifications, quality standards and delivery schedules. Factors that could impact our suppliers' willingness and ability to continue to provide us with the required components include disruption at or affecting our suppliers' facilities, such as work stoppages or natural disasters, demand for and availability of raw materials and subcomponents, adverse weather or other conditions that affect their supply, the financial condition of our suppliers and deterioration in our relationships with these suppliers. In addition, we cannot be sure that we will be able to obtain these components on satisfactory terms. Any increase in component costs could reduce any potential future sales and harm our gross margins.

While we have qualified second sources for several of our critical components, including flow cells, optics and oligonucleotides, we do not have qualified secondary sources for all components that we source through a single supplier and we cannot assure investors that the qualification of a secondary supplier will prevent future supply issues. Disruption in the supply of materials or components would impair our ability to sell our products and meet customer demand, and also could delay the launch of new products, any of which could harm our business and results of operations. If we were to have to change suppliers, the new supplier may not be able to provide us components in a timely manner and in adequate quantities that are consistent with our quality standards and on satisfactory pricing terms. In addition, alternative sources of supply may not be available for components for which there are a limited number of suppliers which could result in a requirement to redesign certain aspects of our products.

We have limited experience manufacturing G4 Integrated Solution, and we may be unable to consistently manufacture or supply our G4 Integrated Solution to the necessary specifications or in quantities necessary to meet demand on a timely basis and at acceptable performance and cost levels.

Our G4 Integrated Solution is a complex product with many different components that must work together to obtain the desired results. As such, a quality defect in a single component can compromise the performance of the entire product. In order to successfully generate revenue from our G4 Integrated Solution, we need to supply our customers with products that meet their expectations for quality and functionality in accordance with established specifications on a timely basis. Given the complexity of our G4 Integrated Solution, individual G4 Instruments may occasionally require additional installation and service time prior to becoming available for customer use and we may be required to replace lots of reagents or consumables.

We intend to manufacture our G4 Integrated Solution at our existing facilities and our new headquarters located in La Jolla, California. We procure certain components of our G4 Instrument, and our associated consumables, from third-party suppliers, which include both commonly-available raw materials and custom components. Many of these manufacturing processes are complex. As we move to towards commercial scale manufacturing, if we are not able to repeatedly produce our G4 Integrated Solution at commercial scale and source required components from third-party suppliers, our business will be adversely impacted. In particular, we will need to obtain certain approvals and certifications to build our new facility that can be capable of manufacturing our integrated solutions. We do not have experience in constructing manufacturing facilities and if we are unable or delayed in obtaining required approvals and certifications our commercialization efforts could be adversely affected.

As we continue to scale commercially in anticipation of the launch of our G4 Integrated Solution and finalize the development of our planned PX Integrated Solution and any new products or product enhancements, and as our products incorporate increasingly sophisticated technology, it will be increasingly difficult to ensure our products are produced in the necessary quantities without sacrificing quality. We have limited manufacturing experience and no experience manufacturing our products at commercial scale and there is no assurance that we will be able to manufacture our products so that they repeatedly provide accurate results consistent with product specifications. Further, our consumables have a limited shelf life, after which their performance is not ensured. Shipment of consumables that effectively expire early or shipment of defective instruments or consumables to customers may result in recalls and warranty replacements, which would increase our costs, and depending upon our inventory levels and the availability and lead time for additional inventory, could lead to availability issues. As we develop additional products, we may need to bring new equipment on-line, implement new systems, technology, controls and procedures and hire personnel with different qualifications. Any future design issues, unforeseen manufacturing problems, equipment malfunctions, aging components, quality issues with components and materials sourced from third-party suppliers, or failures to strictly follow procedures or meet specifications, may have a material adverse effect on our brand, business, results of operations and financial condition.

Our G4 Integrated Solution could have defects or errors, which may give rise to claims against us, adversely affect market adoption and adversely affect our business, financial condition, and results of operations.

Our G4 Integrated Solution utilizes novel and complex technologies and may develop or contain undetected defects or errors. We cannot assure you that material performance problems, defects, or errors will not arise, and as we commercialize our products, these risks may increase. We expect to provide warranties that our products will meet performance expectations and will be free from defects. The costs incurred in correcting any defects or errors may be substantial and could adversely affect our operating margins.

In manufacturing our G4 Integrated Solution, we depend upon third parties for the supply of various components, many of which require a significant degree of technical expertise to produce. If our suppliers fail to produce our components to specification or provide defective products to us and our quality control tests and procedures fail to detect such errors or defects, or if we or our suppliers use defective materials or workmanship in the manufacturing process, the reliability and performance of our products will be compromised.

If our G4 Integrated Solution contains defects, we may experience:

- a failure to achieve market acceptance for our products or increased sales;
- loss of customer orders or delays in order fulfillment;
- damage to our brand reputation;
- increased warranty and customer service and support costs due to product repair or replacement;
- product recalls or replacements;
- inability to attract new customers or gain market acceptance;

- diversion of resources from our manufacturing and research and development departments into our service department; and
- legal claims against us, including product liability claims, which could be costly and time consuming to defend and result in substantial damages.

In addition, we expect that our G4 Integrated Solution will be used with our potential customers' own lab equipment and third-party products, and the performance of this equipment and products is outside of our control. If our customers' equipment or the third-party products they utilize are not produced to specification, are produced in accordance with modified specifications, or are defective, they may not be compatible with or perform as intended with our G4 Integrated Solution. In such case, the reliability, results and performance of our G4 Integrated Solution may be compromised. The occurrence of any one or more of the foregoing could negatively affect our business, financial condition, and results of operations. Additionally, we expect that we will need to train our customers on properly using our G4 Integrated Solution. If we are unable to adequately train our customers to use our G4 Integrated Solution or they fail to follow our training and protocols we have established, the performance of our G4 Integrated Solution may be compromised.

Our ability to achieve profitability will depend, in part, on our ability to reduce the per unit manufacturing costs of our G4 Integrated Solution.

To achieve our operating and strategic goals, we will need to, among other things, reduce the per unit manufacturing cost of our G4 Instrument and the associated consumables. Manufacturing our G4 Instrument and our associated consumables involve complex processes, and depend on the skills and experience of our manufacturing personnel. We may experience low manufacturing yields for our G4 Instrument and our consumables. In addition, we will need to continually focus on reducing the per unit manufacturing cost of our G4 Instrument and associated consumables, which cannot be achieved without increasing the volume of components that we purchase in order to take advantage of volume-based pricing discounts, improving our manufacturing efficiency or increasing our volumes to leverage manufacturing overhead costs. If we are unable to improve our manufacturing efficiency and reduce our manufacturing overhead costs per unit, our ability to achieve profitability will be severely constrained. Any increase in manufacturing volumes is dependent upon a corresponding increase in sales. The occurrence of one or more factors that negatively impact the manufacturing or sales of our G4 Integrated Solution or reduce our manufacturing efficiency may prevent us from achieving our desired reduction in manufacturing costs, which would negatively affect our operating results and may prevent us from attaining profitability.

If our facilities or our third-party suppliers' facilities become unavailable or inoperable, our research and development program and commercialization launch plan could be adversely impacted and manufacturing of our G4 Integrated Solution could be interrupted.

Our existing and planned facilities in La Jolla, California house our corporate, research and development, manufacturing, sales and marketing, customer support and quality assurance teams. Our facilities and those of our third-party suppliers are vulnerable to natural disasters, public health crises, including the impact of the COVID-19 pandemic, and catastrophic events. For example, our La Jolla facilities are located near earthquake fault zones and are vulnerable to damage from earthquakes as well as other types of disasters, including fires, floods, power loss, communications failures and similar events. If any disaster, any new or continuing public health crisis or catastrophic event were to occur, our ability to operate our business would be seriously, or potentially completely, impaired. If our facilities or our third-party suppliers' facilities become unavailable for any reason, we cannot provide assurances that we will be able to secure alternative facilities with the necessary capabilities and equipment or alternative suppliers on acceptable terms, if at all. We may encounter particular difficulties in replacing our La Jolla facilities given the specialized equipment housed within it. The inability to manufacture our G4 Instrument and associated consumables, combined with our limited inventory of such manufactured products, may result in the loss of future customers or harm our reputation, and we may be unable to re-establish relationships with those customers in the future. Because our consumables are perishable and must

be kept in temperature controlled storage, the loss of power to our facilities, mechanical or other issues with our storage facilities or other events that impact our temperature controlled storage could result in the loss of some or all of such products, and we may not be able to replace them without disruption to our customers or at all.

If our business operations are disrupted by a disaster or catastrophe, the launch of our G4 Integrated Solution and our planned PX Integrated Solution, and the timing of improvements to such products could be significantly delayed and could adversely impact our ability to compete with other available products and solutions. If our or our third-party suppliers' capabilities are impaired, we may not be able to manufacture and ship our products in a timely manner, which would adversely impact our business. Although we possess insurance for damage to our property and the disruption of our business, this insurance may not be sufficient to cover all of our potential losses and may not continue to be available to us on acceptable terms, or at all.

The costs to maintain and provide customer support for our G4 Integrated Solution, and any future products or product enhancements that we commercialize, may exceed our expectations.

We have not begun to commercialize our G4 Integrated Solution or to manufacture our G4 Integrated Solution in commercial quantities. As we start to commercialize our G4 Integrated Solution, we will need to build a commercial organization and infrastructure to support the following activities:

- installing our G4 Integrated Solution in customer locations;
- training customers on the use of our G4 Integrated Solution;
- providing customer support services; and
- providing maintenance, repair and warranty services.

We may not be successful in developing the organization or commercial infrastructure necessary to provide these customer support activities in a timely manner, and on a cost effective basis. Any failure to provide our customers with a superior customer experience, to timely respond to their requests and questions and to provide maintenance and warranty services, may adversely affect our brand and our results of operations.

Risks Related to Our Planned Growth

If we do not successfully manage our current and anticipated growth, our business and prospects will be harmed.

From March 31, 2020 to March 31, 2021, the number of our full-time employees increased from 88 to 138. Since that time, we have continued to increase our employee headcount and expand our operations and expect to continue to do so as we approach commercialization. Our recent growth has placed significant strains on our management, financial systems and internal controls. We expect that the anticipated growth associated with the commercial launch of our G4 Integrated Solution and the development and commercial launch of our planned PX Integrated Solution, will also strain our operational and manufacturing systems and processes, sales and marketing team, financial systems and internal controls and other aspects of our business. Developing and commercializing our G4 Integrated Solution, and continuing to develop our planned PX Integrated Solution, will require us to hire and retain scientific, sales and marketing, software, manufacturing, customer service, and quality assurance personnel. In addition, we expect that we will need to hire additional accounting, finance and other personnel in connection with our becoming, and our efforts to comply with the requirements of being, a public company. Once public, our management and other personnel will need to devote a substantial amount of time towards maintaining compliance with these requirements and effectively manage these growth activities. We have faced challenges integrating, developing and motivating our rapidly growing employee base, especially during the COVID-19 pandemic, and may continue to face related challenges as we continue to grow. To effectively manage our growth, we must continue to improve our operational and manufacturing systems and processes, our financial systems and internal controls and other aspects of our business and continue to effectively expand, train and manage our personnel in a virtual environment during the pendency of the COVID 19 pandemic and related governmental work from home mandates. Our ability to successfully manage our

expected growth is uncertain given the fact that we have been in operation only since 2016. As our organization continues to grow, we will be required to implement more complex organizational management structures, and may find it increasingly difficult to maintain the benefits of our corporate culture, including our ability to quickly develop and launch new and innovative products and technologies. If we do not successfully manage our anticipated growth, our business, results of operations, financial condition and prospects will be harmed.

We depend on our senior management team and the loss of one or more key employees or an inability to attract and retain highly skilled employees will negatively affect our business, financial condition and results of operations.

Our future success depends upon our ability to recruit, train, retain and motivate our senior management team and our other highly qualified personnel. Our senior management team, including Andrew Spaventa, our founder, Chief Executive Officer and Chairperson of the Board, Eli Glezer, our founder and Chief Scientific Officer, and David Daly, our President and Chief Operating Officer, is critical to our vision, strategic direction, product development and commercialization efforts. The departure of one or more of these individuals or any of our other executive officers, senior management team members, or other key employees could be disruptive to our business until we are able to hire qualified successors. We do not have long-term employment contracts or maintain “key man” life insurance on our senior management team.

Our continued growth and ability to successfully transition from a company primarily focused on research and development to commercialization depends, in part, on attracting, retaining and motivating qualified personnel, including highly-trained sales and marketing personnel with the necessary scientific background and ability to understand our products at a technical level to effectively identify, market and sell to potential new customers. New hires will require significant training and, in most cases, take significant time before they achieve full productivity. Our failure to successfully integrate these key personnel into our business could adversely affect our business. In addition, competition for qualified personnel in the life sciences space is intense, particularly in the San Diego metropolitan area. We compete for qualified scientific and information technology personnel with other life science and information technology companies as well as academic institutions and research institutions. Some of our scientific personnel are qualified foreign nationals whose ability to live and work in the United States is contingent upon the continued availability of appropriate visas. Due to the competition for qualified personnel in the San Diego metropolitan area, we expect to continue to utilize foreign nationals to fill part of our recruiting needs. As a result, changes to United States immigration policies could restrain the flow of technical and professional talent into the United States and may inhibit our ability to hire qualified personnel.

We do not maintain fixed term employment contracts with any of our employees, including the members of our senior management team. As a result, our executives and other key employees could leave our company with little or no prior notice and would be free to work for a competitor. Due to the complex and technical nature of our products and technology and the dynamic market in which we compete, any failure to attract, train, retain and motivate qualified personnel could materially harm our business, results of operations, financial condition and prospects.

We may acquire or invest in other companies or technologies, which could divert our management’s attention, result in additional dilution to our stockholders and otherwise disrupt our operations and harm our operating results.

We may in the future seek to acquire or invest in businesses, applications or technologies that we believe could complement or expand our G4 Integrated Solution, our planned PX Integrated Solution or any other future products and product enhancements we elect to pursue. We may also pursue acquisitions or investments to expand our technical capabilities or otherwise offer growth opportunities. The pursuit of potential acquisitions or investments may divert the attention of management and cause us to incur various costs and expenses in identifying, investigating and pursuing suitable acquisitions or investments, whether or not they are

consummated. We may not be able to identify desirable acquisition targets or be successful in entering into an agreement with any particular target or obtain the expected benefits of any acquisition or investment.

To date, the growth of our operations has been organic, and we have limited experience in acquiring or investing in other businesses or technologies. We may not be able to successfully integrate acquired personnel, operations and technologies, or effectively manage the combined business following an acquisition. Acquisitions could also result in dilutive issuances of equity securities, the use of our available cash, or the incurrence of debt, which could harm our operating results. In addition, if an acquired business fails to meet our expectations, our operating results, business and financial condition may suffer. Also, our Loan Agreement may restrict our ability to pursue certain mergers, acquisitions, amalgamations or consolidations without obtaining the prior consent of Silicon Valley Bank or repaying our outstanding loan amounts. Additionally, future acquisitions or investments could result in potentially dilutive issuances of our equity securities, the incurrence of debt, contingent liabilities or amortization expenses or write-offs of goodwill, any of which could harm our financial condition.

If we experience a disruption in our information technology systems or breaches of data security, our business could be adversely affected.

We rely on information technology systems to keep financial records, facilitate our research and development initiatives, manage our manufacturing operations, maintain quality control, fulfill customer orders, maintain corporate records, communicate with staff and external parties and operate other critical functions. Our information technology systems and those of our vendors and partners are potentially vulnerable to disruption due to breakdown, malicious intrusion and computer viruses or other disruptive events, including, but not limited to, natural disasters and catastrophes. Cyberattacks and other malicious internet-based activity continue to increase and cloud-based platform providers of services have been and are expected to continue to be targeted. Methods of attacks on information technology systems and data security breaches change frequently, are increasingly complex and sophisticated, including social engineering and phishing scams, and can originate from a wide variety of sources. In addition to traditional computer “hackers,” malicious code, such as viruses and worms, stolen or fraudulently obtained log-in credentials, employee errors, actions, inaction, theft, or misuse, and denial-of-service attacks, there are sophisticated nation-state and nation-state supported actors that now engage in attacks, including advanced persistent threat intrusions. Our information technology and data security procedures continue to evolve and therefore, our information technology systems may be more susceptible to cybersecurity attacks. Despite any of our current or future efforts to protect against cybersecurity attacks and data security breaches, there is no guarantee that our efforts are adequate to safeguard against all such attacks and breaches. Moreover, it is possible that we may not be able to anticipate, detect, appropriately react and respond to, or implement effective preventative measures against, all cybersecurity incidents.

If our security measures, or those of our vendors and partners, are compromised due to any cybersecurity attacks or data security breaches, our business and reputation may be harmed, we could become subject to litigation and we could incur significant liability. If we were to experience a prolonged system disruption in our information technology systems or those of certain of our vendors and partners, it could negatively impact our ability to serve our customers, which could adversely impact our business, financial condition, results of operations and prospects. If operations at our facilities were disrupted, it may cause a material disruption in our business if we are not capable of restoring functionality in an acceptable timeframe. In addition, our information technology systems, and those of our vendors and partners, are potentially vulnerable to data security breaches and supply chain attacks, whether by internal bad actors, such as employees or other third parties with legitimate access to our or our third-party providers’ systems, or external bad actors, which could lead to the exposure of personal data, sensitive data and confidential information to unauthorized persons. Any such data security breaches could lead to the loss of trade secrets or other intellectual property, or could lead to the exposure of personal information, including sensitive personal information, of our employees, customers and others, any of which could have a material adverse effect on our business, reputation, financial condition and results of operations.

In addition, any such access, disclosure or other loss or unauthorized use of information or data could result in legal claims or proceedings, regulatory investigations or actions, and other types of liability under laws that protect the privacy and security of personal information, including federal, state and foreign data protection and privacy regulations, violations of which could result in significant penalties and fines. Furthermore, defending a suit, regardless of its merit, could be costly, divert management's attention and harm our reputation. In addition, although we seek to detect and investigate all data security incidents, security breaches and other incidents of unauthorized access to our information technology systems and data can be difficult to detect and any delay in identifying such breaches or incidents may lead to increased harm and legal exposure of the type described above. Moreover, there could be public announcements regarding any cybersecurity incidents and any steps we take to respond to or remediate such incidents, and if securities analysts or investors perceive these announcements to be negative, it could, among other things, have a material adverse effect on the price of our common stock.

The cost of protecting against, investigating, mitigating and responding to potential breaches of our information technology systems and data security breaches and complying with applicable breach notification obligations to individuals, regulators, partners and others can be significant. As cybersecurity incidents continue to evolve, we may be required to expend significant additional resources to continue to modify or enhance our protective measures or to investigate and remediate any information security vulnerabilities. The inability to implement, maintain and upgrade adequate safeguards could have a material adverse effect on our business, financial condition, results of operations and prospects. While we currently maintain cybersecurity insurance, our insurance policies may not be adequate to compensate us for the potential costs and other losses arising from such disruptions, failures or security breaches. In addition, such insurance may not be available to us in the future on economically reasonable terms, or at all, or that any insurer will not deny coverage as to any future claim. The successful assertion of one or more large claims against us that exceed available insurance coverage, or the occurrence of changes in our insurance policies, including premium increases or the imposition of large deductible or co-insurance requirements, could have a material adverse effect on our business, financial condition, results of operations and prospects.

The implementation of a new enterprise resource planning system could cause disruption to our business and operations.

We are in the process of implementing a new enterprise resource planning system, or ERP system. This system will integrate our operations, including supply-chain, order entry, manufacturing, inventory and financial reporting, among others. ERP system implementations are complex projects that require significant investment of capital and human resources, the reengineering of many business processes and the attention of many employees who would otherwise be focused on other aspects of our business. Any disruptions, delays or deficiencies in the design and implementation of the improvements to our ERP system may result in potentially much higher costs than anticipated and may adversely affect our ability to develop and manufacture our products, commercialize our products, fulfill contractual obligations, file reports with the Securities and Exchange Commission, or the SEC, in a timely manner or otherwise operate our business and our controls environment. Moreover, despite our security measures, our information technology systems, including the ERP system, are vulnerable to damage or interruption from fires, floods and other natural disasters, terrorist attacks, computer viruses or hackers, power losses and computer system or data network failures, which could result in significant data losses or theft of sensitive or proprietary information. Any of these consequences may harm our business.

Risks Related to our Intellectual Property

If we are sued for infringing, misappropriating or otherwise violating intellectual property rights of third parties, such litigation could be costly and time consuming and could prevent or delay us from developing or commercializing our product candidates.

Our commercial success depends on our ability to develop, manufacture, market and sell our products and use our products and technologies without infringing, misappropriating or otherwise violating the intellectual

property rights of third parties. We operate in a crowded technology area in which there are numerous issued patents and patent applications and in which there has been substantial litigation regarding patent and other intellectual property rights. There also is a substantial number of administrative proceedings for challenging patents, including interference, derivation, *inter partes* review, post grant review, and reexamination proceedings before the USPTO, or oppositions and other comparable proceedings in foreign jurisdictions. We expect to be exposed to, or threatened with, future litigation by third parties, including our primary competitors, who have patent and other intellectual property rights and may allege that our research and development activities, products, manufacturing methods, software and/or technologies infringe, misappropriate or otherwise violate their intellectual property rights. Our competitors have numerous issued patents and pending patent applications in the fields covered by our products and in which we are developing our products and technologies. It is not always clear to industry participants, including us, the claim scope that may issue from pending patent applications owned by third parties or which patents cover various types of products, technologies or their methods of use or manufacture. In addition, many patent applications are unpublished for up to 18 months from their first filing date and are not accessible to us. We expect that our competitors will, in connection with our launch of our G4 Integrated Solution and our planned PX Integrated Solution and later stage product offerings, assert that we are infringing, or have in the past infringed as part of our research and development activities, their patent and other intellectual property rights and that we are employing their proprietary technology without authorization.

If third parties, including our competitors, believe that our products or technologies infringe, misappropriate or otherwise violate their intellectual property, such third parties may seek to enforce their intellectual property, including patents, against us by filing an intellectual property-related lawsuit, including a patent infringement lawsuit, against us. There is no assurance that a court would find in our favor on questions of infringement, validity, enforceability, or priority. If any of our competitors, or any other third parties, were to assert their patents against us and we are unable to successfully defend against any such assertion, we may be required, including by court order, to cease the development and commercialization of the infringing products or technology and we may be required to redesign such products and technologies so they do not infringe such patents, which may not be possible or may require substantial monetary expenditures and time. We could also be required to pay damages, which could be significant, including treble damages and attorneys' fees if we are found to have willfully infringed such patents. We could also be required to obtain a license to such patents in order to continue the development and commercialization of the infringing product or technology, which may not be on commercially reasonable terms or may not be obtainable at all. Even if such license were available, it may require substantial payments or cross-licenses under our intellectual property rights, and it may only be available on a nonexclusive basis, in which case third parties, including our competitors, could use the same licensed intellectual property to compete with us. Any of the foregoing could have a material adverse effect on our business, financial condition, results of operation or prospects.

We may choose to challenge the patentability, validity or enforceability of any third-party patent that we believe may have applicability in our field, and any other third-party patent that may be asserted against us. Such challenges may be brought either in court or by requesting that the USPTO, or other foreign patent offices review the patent claims. However, there can be no assurance that any such challenge will be successful and if not successful, we may be estopped from asserting in a district court any grounds already raised or that could have been raised in certain proceedings, such as *inter partes* review (IPR) at the USPTO. Even if such proceedings are successful, these proceedings are expensive and may consume our time or other resources, distract our management and technical personnel.

Third parties, including our existing and future competitors, may be infringing, misappropriating or otherwise violating our owned and in-licensed intellectual property rights. Monitoring unauthorized use of our intellectual property will be difficult and costly. We may not be able to detect unauthorized use of, or take appropriate steps to enforce, our intellectual property rights. From time to time, we seek to analyze our competitors' products and services, and may in the future seek to enforce our rights against potential infringement, misappropriation or violation of our intellectual property. However, the steps we have taken to

protect our intellectual property rights may not be adequate to enforce our rights. Any inability to meaningfully enforce our intellectual property rights could harm our ability to compete and reduce demand for our products and technologies.

Litigation proceedings may be necessary for us to enforce our patent and other intellectual property rights. We may not be successful in such proceedings. Further, in such proceedings, the defendant could counterclaim that our intellectual property is invalid or unenforceable and the court may agree, in which case we could lose valuable intellectual property rights. The outcome in any such proceedings are unpredictable. Third parties may also bring challenges to our patents in the USPTO or foreign patent offices seeking to invalidate them.

Regardless of whether we are defending against or asserting any intellectual property-related proceeding, any such intellectual property-related proceeding that may be necessary in the future, regardless of outcome, could result in substantial costs and diversion of resources and could have a material adverse effect on our business, financial condition, results of operations and prospects. Furthermore, because of the substantial amount of discovery required in connection with intellectual property litigation, there is a risk that some of our confidential information could be compromised by disclosure during this type of litigation. In addition, there could be public announcements of the results of such ongoing litigation, and if securities analysts or investors perceive these results to be negative, it could have a substantial adverse effect on the price of our common stock. Some of our competitors and other third parties may be able to sustain the costs of such litigation or proceedings more effectively than we can because of their greater financial resources and more mature and developed intellectual property portfolios. We may not have sufficient financial or other resources to adequately conduct these types of litigation or proceedings. Any of the foregoing, or any uncertainties resulting from the initiation, continuation and results of any litigation, could have a material adverse effect on our ability to raise the funds necessary to continue our operations or could otherwise have a material adverse effect on our business, financial condition, results of operations and prospects. Claims that we have misappropriated the confidential information or trade secrets of third parties could have a similar adverse effect on our business, financial condition, results of operations and prospects.

If we are unable to obtain and maintain sufficient intellectual property protection for our products and technology, or if the scope of the intellectual property protection obtained is not sufficiently broad, our competitors could develop and commercialize products similar or identical to ours, and our ability to successfully commercialize our products may be impaired.

We rely on patent, trademark, copyright, trade secret and other intellectual property rights and contractual restrictions to protect our proprietary products and technologies, all of which provide limited protection and may not adequately protect our rights or permit us to gain or keep any competitive advantage. We currently have three issued patents covering our proprietary next generation sequencing technology. If we fail to obtain additional patent protection for our products and technology and maintain and protect our intellectual property rights, third parties may be able to compete more effectively against us. In addition, we may incur substantial litigation costs in our attempts to recover or restrict use of our intellectual property. Further, if we are unable to obtain and maintain sufficient intellectual property protection for our products and technology, or if the scope of the intellectual property protection obtained is not sufficiently broad, our ability to successfully commercialize our products may be impaired.

We have and intend to continue to apply for patents covering our products and technologies and uses thereof, as we deem appropriate. However, obtaining and enforcing patents is costly, time-consuming and complex, and we may fail to apply for patents on important products and technologies in a timely fashion or at all, or we may fail to apply for patents in potentially relevant jurisdictions. We may not be able to file and prosecute all necessary or desirable patent applications, or maintain, enforce and license any patents that may issue from such patent applications, at a reasonable cost or in a timely manner or in all jurisdictions. It is also possible that we will fail to identify patentable aspects of our research and development output before it is too late to obtain patent protection. Moreover, we may not develop additional proprietary products, methods and

technologies that are patentable. We may not have the right to control the preparation, filing and prosecution of patent applications, or to maintain the rights to patents licensed from or to third parties. Therefore, these patents and applications may not be prosecuted and enforced by such third parties in a manner consistent with the best interests of our business.

In addition, the patent position of life sciences technology companies such as ours is generally is highly uncertain, involves complex legal and factual questions, and our industry has been to widespread and intense litigation in recent years. Changes in either the patent laws or in interpretations of patent laws in the United States or other countries or regions may diminish the value of our intellectual property. As a result, the issuance, scope, validity, enforceability, and commercial value of our patent rights are highly uncertain. It is possible that none of our pending patent applications will result in issued patents in a timely fashion or at all, and even if patents are granted, they may not provide a basis for intellectual property protection of commercially viable products or technologies, may not provide us with any competitive advantages, or may be challenged, narrowed and invalidated by third parties. We cannot predict the breadth of claims that may be allowed or enforced in our patents or in third-party patents. It is possible that third parties will design around our current or future patents such that we cannot prevent such third parties from using similar technologies and commercializing similar products to compete with us. Some of our owned or licensed patents or patent applications may be challenged at a future point in time and we may not be successful in defending any such challenges made against our patents or patent applications. Any successful third-party challenge to our patents could result in the narrowing, unenforceability or invalidity of such patents and increased competition to our business. The outcome of patent litigation or other proceeding can be uncertain, and any attempt by us to enforce our patent rights against others or to challenge the patent rights of others may not be successful, or, regardless of success, may take substantial time and result in substantial cost, and may divert our efforts and attention from other aspects of our business. Any of the foregoing events could have a material adverse effect on our business, financial condition and results of operations.

We cannot ensure that patent rights relating to inventions described and claimed in our pending patent applications will issue and will provide sufficient protection for our products and technologies. We also cannot ensure that our patents or patents based on our patent applications will not be challenged and rendered invalid and/or unenforceable.

Our success depends in large part on our ability to obtain and maintain intellectual property protection, particularly patents, for our products and technologies in the both the United States and other foreign countries. Patents are of national or regional effect, and filing, prosecuting and defending patents on all of our products and technologies throughout the world would be prohibitively expensive, and the laws of foreign countries may not protect our rights to the same extent as the laws of the United States. As such, we may not be able to prevent third parties from practicing our inventions in all countries outside the United States, or from selling or importing products made using our inventions in and into the United States or other jurisdictions. Further, the legal systems of certain countries, particularly certain developing countries, do not favor the enforcement of patents, trade secrets and other intellectual property protection, which could make it difficult for us to stop the infringement of our patents or marketing of competing products in violation of our proprietary rights generally. As such, we may not be able to prevent third parties from practicing our inventions in all countries outside the United States, or from selling or importing products made using our inventions in and into the United States or other jurisdictions. Furthermore, certain foreign and developing countries, including China and India, have compulsory licensing laws under which a patent owner may be compelled to grant licenses to third parties. In those countries, we and our licensors may have limited remedies if patents are infringed or if we or our licensors are compelled to grant a license to a third-party, which could materially diminish the value of those patents. This could limit our potential revenue opportunities. Accordingly, our efforts to enforce our intellectual property rights around the world may be inadequate to obtain a significant commercial advantage from the intellectual property that we develop or license.

We have pending U.S. and foreign patent applications in our portfolio, however, we cannot predict:

- if and when patents may issue based on our patent applications;
- the scope of protection of any patent issuing based on our patent applications;
- whether the claims of any patent issuing based on our patent applications will provide protection against competitors;
- whether or not third parties will find ways to invalidate or circumvent our patent rights;
- whether or not others will obtain patents claiming aspects similar to those covered by our patents and patent applications;
- whether we will need to initiate litigation or administrative proceedings to enforce and/or defend our patent rights which will be costly whether we win or lose; and/or
- whether the patent applications that we own or in-license will result in issued patents with claims that cover our product candidates or uses thereof in the United States or in other foreign countries.

We cannot be certain that the claims in our pending patent applications directed to our product candidates and/or technologies will be considered patentable by the United States Patent and Trademark Office (the USPTO) or by patent offices in foreign countries. One aspect of the determination of patentability of our inventions depends on the scope and content of the "prior art," information that was or is deemed available to a person of skill in the relevant art prior to the priority date of the claimed invention. There may be prior art of which we are not aware that may affect the patentability of our patent claims or, if issued, affect the validity or enforceability of a patent claim. Even if the patents do issue based on our patent applications, third parties may challenge the validity, enforceability or scope thereof, which may result in such patents being narrowed, invalidated or held unenforceable. Furthermore, even if they are unchallenged, patents in our portfolio may not adequately exclude third parties from practicing relevant technology or prevent others from designing around our claims. If the breadth or strength of our intellectual property position with respect to our product candidates is threatened, it could dissuade companies from collaborating with us to develop and threaten our ability to commercialize our product candidates. In the event of litigation or administrative proceedings, we cannot be certain that the claims in any of our issued patents will be considered valid by courts in the United States or foreign countries.

We may be subject to claims that our employees, consultants or independent contractors have wrongfully used or disclosed confidential information of third parties.

We have employed and expect to employ individuals who were previously employed at universities, research institutions or other companies, including our competitors or potential competitors. Although we seek to protect our ownership of intellectual property rights by ensuring that our agreements with our employees, collaborators, and other third parties with whom we do business include provisions requiring such parties to not disclose the confidential information of their previous employers or other third parties, we may be subject to claims that we or our employees, consultants or independent contractors have inadvertently or otherwise used or disclosed confidential information of our employees' former employers or other third parties. We or our licensors may also be subject to claims that former employers or other third parties have an ownership interest in our patents. Litigation may be necessary to defend against these claims. There is no guarantee of success in defending these claims, and if we or our licensors fail in defending any such claims, in addition to paying monetary damages, we may lose valuable intellectual property rights, such as exclusive ownership of, or right to use, valuable intellectual property. Even if we are successful, litigation could result in substantial cost and be a distraction to our management and other employees.

If we are unable to protect the confidentiality of our trade secrets, the value of our technology could be materially adversely affected and our business could be harmed.

We rely heavily on trade secrets and confidentiality agreements to protect our unpatented know-how, technology and other proprietary information, including the design and features of our G4 Integrated Solution and our planned PX Integrated Solution, and to maintain our competitive position. However, trade secrets and know-how can be difficult to protect. In particular, we anticipate that with respect to our technologies, these trade secrets and know how will over time be disseminated within the industry through independent development, the publication of journal articles describing the methodology, and the movement of personnel from academic to industry scientific positions.

In addition to pursuing patents on our technology, we take steps to protect our intellectual property and proprietary technology by entering into agreements, including confidentiality agreements, non-disclosure agreements and intellectual property assignment agreements, with our employees, consultants, academic institutions, corporate partners and, when needed, our advisers. However, we cannot be certain that such agreements have been entered into with all relevant parties, and we cannot be certain that our trade secrets and other confidential proprietary information will not be disclosed or that competitors or other third parties will not otherwise gain access to our trade secrets or independently develop substantially equivalent information and techniques. For example, any of these parties may breach the agreements and disclose our proprietary information, including our trade secrets, and we may not be able to obtain adequate remedies for such breaches. Such agreements may not be enforceable or may not provide meaningful protection for our trade secrets or other proprietary information in the event of unauthorized use or disclosure or other breaches of the agreements, and we may not be able to prevent such unauthorized disclosure, which could adversely impact our ability to establish or maintain a competitive advantage in the market, business, financial condition, results of operations and prospects.

Monitoring unauthorized disclosure is difficult, and we do not know whether the steps we have taken to prevent such disclosure are, or will be, adequate. If we were to enforce a claim that a third-party had wrongfully obtained and was using our trade secrets, it would be expensive and time-consuming, it could distract our personnel, and the outcome would be unpredictable. In addition, courts outside the United States may be less willing to protect trade secrets.

We also seek to preserve the integrity and confidentiality of our confidential proprietary information by maintaining physical security of our premises and physical and electronic security of our information technology systems, but it is possible that these security measures could be breached. If any of our confidential proprietary information were to be lawfully obtained or independently developed by a competitor or other third-party, absent patent protection, we would have no right to prevent such competitor from using that technology or information to compete with us, which could harm our competitive position. Competitors or third parties could purchase our products and attempt to replicate some or all of the competitive advantages we derive from our development efforts, design around our protected technology, develop their own competitive technologies that fall outside the scope of our intellectual property rights or independently develop our technologies without reference to our trade secrets. If any of our trade secrets were to be disclosed to or independently discovered by a competitor or other third-party, it could materially and adversely affect our business, financial condition, results of operations and prospects.

We in-licensed certain patents and other intellectual property rights from The Trustees of Columbia University in the City of New York (Columbia). If we fail to comply with the terms of our agreement with Columbia or have a disagreement with Columbia regarding our obligations thereunder, we may be subject to breach of contract claims, which could harm our business and results of operations.

In August 2016, we entered into an Exclusive License Agreement with Columbia, which was subsequently amended in September 2016, November 2016 and June 2017 (the Columbia License Agreement). Under the

Columbia License Agreement, we received (i) an exclusive, sublicensable, worldwide license under certain patents owned by Columbia to discover, develop, make and sell products or services covered by the claims of such licensed patents (the Patent Products), and (ii) an exclusive, sublicensable, worldwide license under certain materials and technical information provided by Columbia to discover, develop, make and sell products or services that directly use or incorporate such materials or information (the Other Products). Under the Columbia License Agreement, we are required to use commercially reasonable efforts to research, discover, develop and market Patent Products and/or Other Products and to achieve certain fundraising and development milestone events. For any products within the scope of the Columbia License Agreement that we commercialize, we are required to pay royalties ranging from low to mid-single digits on net sales of Patent Products and low single digit royalty rates on net sales of Other Products. We are also required to make milestone payments to Columbia upon our achievement of certain development and commercialization milestones, which could total up to $3.9 million over the life of the Columbia License Agreement. Columbia has a right to pursue a termination of the Columbia License Agreement in the event we become insolvent or otherwise cease operations, in the event we materially breach our obligations under the Columbia License Agreement or in the event we assert any claim challenging the validity or enforceability of any patent licensed to us by Columbia under the Columbia License Agreement. There is no assurance that we can satisfy our obligations under the Columbia License Agreement, or that we and Columbia will agree on whether or not we have satisfied our obligations under the Columbia License Agreement, including whether any royalty or milestones, or the amount thereof, are payable under the terms of the Columbia License Agreement. If we fail to comply with our obligations, or if we and Columbia do not agree on whether we have satisfied our obligations under the Columbia License Agreement, Columbia could exercise its right to assert a breach of contract claim and to ultimately pursue a termination of the Columbia License Agreement. If we are required to defend against breach of contract claims asserted by Columbia or if Columbia successfully terminates the Columbia License Agreement, our business and results of operations would be adversely affected.

Patent terms may be inadequate to protect our competitive position on our products for an adequate amount of time.

Patents have a limited lifespan. In the United States, if all maintenance fees are timely paid, the natural expiration of a patent is generally 20 years from its earliest U.S. non-provisional filing date. While extensions may be available, the life of a patent, and the protection it affords, is limited. In the United States, a patent's term may, in certain cases, be lengthened by patent term adjustment, which compensates a patentee for administrative delays by the USPTO in examining and granting a patent, or may be shortened if a patent is terminally disclaimed over a commonly owned patent or a patent naming a common inventor and having an earlier expiration date. Even if patents covering our products are obtained, once the patent life has expired, we may be open to competition from competitive products. If one of our products requires extended development, testing and/or regulatory review, patents protecting such products might expire before or shortly after such products are commercialized. As a result, our owned and licensed patent portfolio may not provide us with sufficient rights to exclude others from commercializing products similar or identical to ours, which could have a material adverse effect on our business, financial condition and results of operations.

We may not be able to protect and enforce our trademarks and trade names, or build name recognition in our markets of interest thereby harming our competitive position.

The registered or unregistered trademarks or trade names that we own may be challenged, infringed, circumvented, declared generic, lapsed or determined to be infringing on or dilutive of other marks. We may not be able to protect our rights in these trademarks and trade names, which we need in order to build name recognition. In addition, third parties have filed, and may in the future file, for registration of trademarks similar or identical to our trademarks, thereby impeding our ability to build brand identity and possibly leading to market confusion. In addition, there could be potential trade name or trademark infringement claims brought by owners of other registered trademarks or trademarks that incorporate variations of our registered or unregistered trademarks or trade names. Further, we may in the future enter into agreements with owners of such third-party

trade names or trademarks to avoid potential trademark litigation which may limit our ability to use our trade names or trademarks in certain fields of business. Over the long term, if we are unable to establish name recognition based on our trademarks and trade names, then we may not be able to compete effectively, and our business, financial condition, results of operations and prospects may be adversely affected. Our efforts to enforce or protect our proprietary rights related to trademarks, trade secrets, domain names, copyrights or other intellectual property may be ineffective and could result in substantial costs and diversion of resources. Any of the foregoing events could have a material adverse effect on our business, financial condition and results of operations.

The U.S. law relating to the patentability of certain inventions in the life sciences technology industry is uncertain and rapidly changing, which may adversely impact our existing patents or our ability to obtain patents in the future.

Changes in either the patent laws or interpretation of the patent laws in the United States or in other jurisdictions could increase the uncertainties and costs surrounding the prosecution of patent applications and the enforcement or defense of issued patents. For instance, under the Leahy-Smith America Invents Act, or the America Invents Act, enacted in September 2011, the United States transitioned to a first inventor to file system in which, assuming that other requirements for patentability are met, the first inventor to file a patent application is entitled to the patent on an invention regardless of whether a third-party was the first to invent the claimed invention. These changes include allowing third-party submission of prior art to the USPTO during patent prosecution and additional procedures to challenge the validity of a patent by USPTO administered post-grant proceedings, including post-grant review, *inter partes* review and derivation proceedings. The America Invents Act and its implementation could increase the uncertainties and costs surrounding the prosecution of our patent applications and the enforcement or defense of our issued patents, all of which could have a material adverse effect on our business, financial condition, results of operations and prospects.

Various courts, including the U.S. Supreme Court, have rendered decisions that impact the scope of patentability of certain inventions or discoveries relating to the life sciences technology. Specifically, these decisions stand for the proposition that patent claims that recite laws of nature are not themselves patentable unless those patent claims have sufficient additional features that provide practical assurance that the processes are genuine inventive applications of those laws rather than patent drafting efforts designed to monopolize the law of nature itself. What constitutes a “sufficient” additional feature is uncertain. Furthermore, in view of these decisions, since December 2014, the USPTO has published and continues to publish revised guidelines for patent examiners to apply when examining process claims for patent eligibility.

In addition, U.S. Supreme Court rulings have narrowed the scope of patent protection available in certain circumstances and weakened the rights of patent owners in certain situations. In addition to increasing uncertainty with regard to our ability to obtain patents in the future, this combination of events may create uncertainty with respect to the value of patents, once obtained. Depending on decisions by the U.S. Congress, the federal courts and the USPTO, the laws and regulations governing patents could change in unpredictable ways that may have a material adverse effect on our ability to obtain new patents and to defend and enforce our existing patents and patents that we might obtain in the future.

We cannot be certain that our patent portfolio will not be negatively impacted by the current uncertain state of the law, new court rulings or changes in guidance or procedures issued by the USPTO or other similar patent offices around the world. From time to time, the U.S. Supreme Court, other federal courts, the U.S. Congress or the USPTO may change the standards of patentability, scope and validity of patents within the life sciences technology and any such changes, or any similar adverse changes in the patent laws of other jurisdictions, could have a negative impact on our business, financial condition, prospects and results of operations.

If we cannot license rights to use technologies on reasonable terms, we may not be able to commercialize new products in the future.

We may identify third-party technology that we may need to license or acquire in order to develop or commercialize our products or technologies. However, we may be unable to secure such licenses or acquisitions. The licensing or acquisition of third-party intellectual property rights is a competitive area, and several more established companies may pursue strategies to license or acquire third-party intellectual property rights that we may consider attractive or necessary. These established companies may have a competitive advantage over us due to their size, capital resources and greater clinical development and commercialization capabilities. In addition, companies that perceive us to be a competitor may be unwilling to assign or license rights to us.

We also may be unable to license or acquire third-party intellectual property rights on terms that would allow us to make an appropriate return on our investment or at all. In return for the use of a third-party's technology, we may agree to pay the licensor royalties based on sales of our products or services. Royalties are a component of cost of products or technologies and affect the margins on our products. We may also need to negotiate licenses to patents or patent applications before or after introducing a commercial product. We may not be able to obtain necessary licenses to patents or patent applications, the commercial release of our products could delayed and our business may suffer if we are unable to enter into the necessary licenses on acceptable terms or at all, if any necessary licenses are subsequently terminated, if the licensor fails to abide by the terms of the license or fails to prevent infringement by third parties, or if the licensed intellectual property rights are found to be invalid or unenforceable.

Certain of our future owned and in-licensed patents may be, subject to a reservation of rights by one or more third parties, including government march-in rights, which may limit our ability to exclude third parties from commercializing products similar or identical to ours.

Our future in-licensed patents may be subject to a reservation of rights by one or more third parties. For example, when new technologies are developed with government funding, in order to secure ownership of such patent rights, the recipient of such funding is required to comply with certain government regulations, including timely disclosing the inventions claimed in such patent rights to the U.S. government and timely electing title to such inventions. Any failure to timely elect title to such inventions may provide the U.S. government to, at any time, take title such inventions. Additionally, the U.S. government generally obtains certain rights in any resulting patents, including a non-exclusive license authorizing the government to use the invention or to have others use the invention on its behalf. If the government decides to exercise these rights, it is not required to engage us as its contractor in connection with doing so. These rights may permit the U.S. government to disclose our confidential information to third parties and to exercise march-in rights to use or allow third parties to use our licensed technology. The U.S. government can exercise its march-in rights if it determines that action is necessary because we fail to achieve practical application of the government-funded technology, because action is necessary to alleviate health or safety needs, to meet requirements of federal regulations, or to give preference to U.S. industry. In addition, our rights in such inventions may be subject to certain requirements to manufacture products embodying such inventions in the United States. Any exercise by the government of any of the foregoing rights could have a material adverse effect on our business, financial condition, results of operations and prospects.

Our use of open source software may pose particular risks to our proprietary software and systems.

We use open source software in our products and anticipate that we will continue to use open source software in the future. The licenses applicable to our use of open source software may require that source code that is developed using open source software be made available to the public and that any modifications or derivative works to certain open source software continue to be licensed under open source licenses. From time to time, we may face claims from third parties claiming infringement of their intellectual property rights, or demanding the release or license of the open source software or derivative works that we developed using such

software (which could include our proprietary source code) or otherwise seeking to enforce the terms of the applicable open source license. These claims could result in litigation and could require us to purchase a costly license, publicly release the affected portions of our source code, be limited in or cease using the implicated software unless and until we can re-engineer such software to avoid infringement or change the use of, or remove, the implicated open source software. Our use of open source software may also present additional security risks because the source code for open source software is publicly available. Any of these risks could be difficult to eliminate or manage, and, if not addressed, could have a material adverse effect on our business, results of operations, financial condition, and prospects.

Risks Related to Regulatory and Legal Compliance Matters

If we elect to label and promote any of our products as clinical diagnostics tests or medical devices, we would be required to obtain prior approval or clearance by the FDA, which would take significant time and expense and could fail to result in FDA clearance or approval for the intended uses we believe are commercially attractive.

We intend to market and sell our G4 Integrated Solution and our planned PX Integrated Solution primarily to academic and research institutions and research companies, government laboratories, hospitals, and biotechnology, consumer genomics and proteomics, commercial molecular diagnostic laboratories, and agrigenomics companies as research use only (RUO) products. Our products are not currently designed, or intended to be used, for clinical diagnostic tests or as medical devices. If we elect to label and market our products for use as, or in the performance of, clinical diagnostics in the United States, thereby subjecting them to U.S. Food and Drug Administration (FDA) regulation as medical devices, we would be required to obtain premarket 510(k) clearance or premarket approval from the FDA, unless an exception applies.

We may in the future register with the FDA as a medical device manufacturer and list some of our products with the FDA pursuant to an FDA Class I listing for general purpose laboratory equipment. While this regulatory classification is exempt from certain FDA requirements, such as the need to submit a premarket notification commonly known as a 510(k), and some of the requirements of the FDA's Quality System Regulations (QSRs), we would be subject to ongoing FDA "general controls," which include compliance with FDA regulations for labeling, inspections by the FDA, complaint evaluation, corrections and removals reporting, promotional restrictions, reporting adverse events or malfunctions for our products, and general prohibitions against misbranding and adulteration.

In addition, we may in the future submit 510(k) premarket notifications to the FDA to obtain FDA clearance of certain of our products on a selective basis. It is possible, in the event we elect to submit 510(k) applications for certain of our products, that the FDA would take the position that a more burdensome premarket application, such as a premarket approval application (PMA) or a de novo application is required for some of our products. If such applications were required, greater time and investment would be required to obtain FDA approval. Even if the FDA agreed that a 510(k) was appropriate, FDA clearance can be expensive and time consuming. It generally takes a significant amount of time to prepare a 510(k), including conducting appropriate testing on our products, and several months to years for the FDA to review a submission. Notwithstanding the effort and expense, FDA clearance or approval could be denied for some or all of our products for which we choose to market as a medical device or a clinical diagnostic device. Even if we were to seek and obtain regulatory approval or clearance, it may not be for the intended uses we request or that we believe are important or commercially attractive. There can be no assurance that future products for which we may seek premarket clearance or approval will be approved or cleared by FDA or a comparable foreign regulatory authority on a timely basis, if at all, nor can there be assurance that labeling claims will be consistent with our anticipated claims or adequate to support continued adoption of such products. Compliance with FDA or comparable foreign regulatory authority regulations will require substantial costs, and subject us to heightened scrutiny by regulators and substantial penalties for failure to comply with such requirements or the inability to market our products. The lengthy and unpredictable premarket clearance or approval process, as well as the unpredictability of the results of any

required clinical studies, may result in our failing to obtain regulatory clearance or approval to market such products, which would significantly harm our business, results of operations, reputation, and prospects.

If we sought and received regulatory clearance or approval for certain of our products, we would be subject to ongoing FDA obligations and continued regulatory oversight and review, including the general controls listed above and the FDA's QSRs for our development and manufacturing operations. In addition, we would be required to obtain a new 510(k) clearance before we could introduce subsequent modifications or improvements to such products. We could also be subject to additional FDA post-marketing obligations for such products, any or all of which would increase our costs and divert resources away from other projects. If we sought and received regulatory clearance or approval and are not able to maintain regulatory compliance with applicable laws, we could be prohibited from marketing our products for use as, or in the performance of, clinical diagnostics and/or could be subject to enforcement actions, including warning letters and adverse publicity, fines, injunctions and civil penalties, recall or seizure of products, operating restrictions and criminal prosecution.

In addition, we could decide to seek regulatory clearance or approval for certain of our products in countries outside of the United States. Sales of such products outside the United States will likely be subject to foreign regulatory requirements, which can vary greatly from country to country. As a result, the time required to obtain clearances or approvals outside the United States may differ from that required to obtain FDA clearance or approval and we may not be able to obtain foreign regulatory approvals on a timely basis or at all. For example, in Europe we would need to comply with the new Medical Device Regulation 2017/745 and In Vitro Diagnostic Regulation 2017/746, which became effective May 26, 2017, with application dates of May 26, 2021 (postponed from 2020) and May 26, 2022 respectively. This will increase the difficulty of regulatory approvals in Europe in the future. In addition, the FDA regulates exports of medical devices. Failure to comply with these regulatory requirements or obtain and maintain required approvals, clearances and certifications could impair our ability to commercialize our products for diagnostic use outside of the United States.

Our products could become subject to government regulation as medical devices by the FDA and other regulatory agencies even if we do not elect to seek regulatory clearance or approval to market our products for diagnostic purposes, which would adversely impact our ability to market and sell our products and harm our business. If our products become subject to FDA regulation, the regulatory clearance or approval and the maintenance of continued and post-market regulatory compliance for such products will be expensive, time-consuming, and uncertain both in timing and in outcome.

We do not currently expect either our G4 Integrated Solution or our planned PX Integrated Solution to be subject to the clearance or approval of the FDA, as they are not intended to be used for the diagnosis, treatment or prevention of disease. However, as we expand our product line and the applications and uses of our products into new fields, certain of our future products could become subject to regulation by the FDA, or comparable international agencies, including requirements for regulatory clearance or approval of such products before they can be marketed. Also, even if our products are labeled, promoted, and intended as RUO, the FDA or comparable agencies of other countries could disagree with our conclusion that our products are intended for RUO or deem our sales, marketing and promotional efforts as being inconsistent with RUO products. For example, our customers may independently elect to use our RUO labeled products in their own laboratory developed tests (LDTs) for clinical diagnostic use, which could subject our products to government regulation, and the regulatory clearance or approval and maintenance process for such products may be uncertain, expensive and time-consuming. Regulatory requirements related to marketing, selling and distribution of RUO products could change or be uncertain, even if clinical uses of our RUO products by our customers were done without our consent. If the FDA or other regulatory authorities assert that any of our RUO products are subject to regulatory clearance or approval, our business, financial condition, or results of operations could be adversely affected.

The FDA has historically exercised enforcement discretion in not enforcing the medical device regulations against laboratories offering LDTs. However, on October 3, 2014, the FDA issued two draft guidance documents that set forth the FDA's proposed risk-based framework for regulating LDTs, which are designed, manufactured,

and used within a single laboratory. The draft guidance documents provide the anticipated details through which the FDA would propose to establish an LDT oversight framework, including premarket review for higher-risk LDTs, such as those that have the same intended use as FDA-approved or cleared companion diagnostic tests currently on the market. In January 2017, the FDA announced that it would not issue final guidance on the oversight of LDTs and manufacturers of products used for LDTs, but would seek further public discussion on an appropriate oversight approach, and give Congress an opportunity to develop a legislative solution. More recently, the FDA has issued warning letters to certain genomics labs for illegally marketing genetic tests that claim to predict patients' responses to specific medications, noting that the FDA has not created a legal "carve-out" for LDTs and retains discretion to take action when appropriate, such as when certain genomic tests raise significant public health concerns.

As manufacturers develop more complex diagnostic tests and diagnostic software, the FDA may increase its regulation of LDTs. Any future legislative or administrative rule making or oversight of LDTs, if and when finalized, may impact the sales of our products and how customers use our products, and may require us to change our business model in order to maintain compliance with these laws. We cannot predict how these various efforts will be resolved, how Congress or the FDA will regulate LDTs in the future, or how that regulatory system will impact our business. Changes to the current regulatory framework, including the imposition of additional or new regulations, including regulation of our products, could arise at any time during the development or marketing of our products, which may negatively affect our ability to obtain or maintain FDA or comparable regulatory approval of our products, if required. Further, sales of devices for diagnostic purposes may subject us to additional healthcare regulation and enforcement by the applicable government agencies. Such laws include, without limitation, state and federal anti-kickback or anti-referral laws, healthcare fraud and abuse laws, false claims laws, privacy and security laws, Physician Payments Sunshine Act and related transparency and manufacturer reporting laws, and other laws and regulations applicable to medical device manufacturers. Our operations may subject us to certain of these health care laws through our customers who use our platform for the development or sale of diagnostic tests. Failure to comply with such laws and regulations, as applicable, may result in substantial penalties.

Additionally, on November 25, 2013, the FDA issued Final Guidance "Distribution of In Vitro Diagnostic Products Labeled for Research Use Only." The guidance emphasizes that the FDA will review the totality of the circumstances when it comes to evaluating whether equipment and testing components are properly labeled as RUO. The final guidance states that merely including a labeling statement that the product is for RUO will not necessarily render the device exempt from the FDA's clearance, approval, and other regulatory requirements if the circumstances surrounding the distribution, marketing and promotional practices indicate that the manufacturer knows its products are, or intends for its products to be, used for clinical diagnostic purposes. These circumstances may include written or verbal sales and marketing claims or links to articles regarding a product's performance in clinical applications and a manufacturer's provision of technical support for clinical applications.

As part of the previous Administration's efforts to combat COVID-19 and consistent with the President Trump's direction in Executive Orders 13771 and 13924, the Department of Health and Human Services (HHS) announced rescission of guidance and other informal issuances of the FDA regarding premarket review of LDT absent notice-and-comment rulemaking, stating that, absent notice-and-comment rulemaking, those seeking approval or clearance of, or an emergency use authorization, for an LDT may nonetheless voluntarily submit a premarket approval application, premarket notification or an Emergency Use Authorization request, respectively, but are not required to do so. However, laboratories opting to use LDTs without FDA premarket review or authorization would not be eligible for liability protection under the Public Readiness and Emergency Preparedness Act. While this action by HHS is expected to reduce the regulatory burden on clinical laboratories certified under the Clinical Laboratory Improvement Amendments of 1988 that develop LDTs, it is unclear how this action as well as future legislation by federal and state governments and the FDA will impact the industry, including our business and that of our customers. Such HHS measure may compel the FDA to formalize earlier enforcement discretionary policies and informal guidance through notice-and-comment rulemaking and/or impose further restrictions on LDTs. HHS' rescission policy may change over time and we cannot be certain if

the new administration will withdraw Executive Orders 13771 and 13924. Congress could also enact legislation restricting LDTs. Any restrictions on LDTs by the FDA, HHS, Congress, or state regulatory authorities may decrease the demand for our products. The adoption of new restrictions on RUO products, whether by the FDA or Congress, could adversely affect demand for our specialized reagents and instruments. Further, we could be required to obtain premarket clearance or approval before we can sell our products to certain customers.

Additionally, in the United States and some foreign jurisdictions there have been, and continue to be, several legislative and regulatory changes and proposed reforms of the healthcare system in an effort to contain costs, improve quality, and expand access to care. Further, third-party payors have attempted to control costs by limiting coverage and the amount of reimbursement for medications and other health care products and services. Our ability to commercialize any of our products successfully, and our customers' ability to commercialize their products successfully, will depend in part on the extent to which coverage and adequate reimbursement for these products and will be available from third-party payors. As such, cost containment reform efforts may result in an adverse effect on our operations.

We are currently subject to, and may in the future become subject to additional, U.S. federal and state laws and regulations imposing obligations on how we collect, store and process personal information. Our actual or perceived failure to comply with such obligations could harm our business. Ensuring compliance with such laws could also impair our efforts to maintain and expand our future customer base, and thereby decrease our revenue.

In the ordinary course of our business, we currently, and in the future will, collect, store, transfer, use or process sensitive data, including personally identifiable information of employees, and intellectual property and proprietary business information owned or controlled by ourselves and other parties. The secure processing, storage, maintenance, and transmission of this critical information is vital to our operations and business strategy. We are, and may increasingly become, subject to various laws and regulations, as well as contractual obligations, relating to data privacy and security in the jurisdictions in which we operate. The regulatory environment related to data privacy and security is increasingly rigorous, with new and constantly changing requirements applicable to our business, and enforcement practices are likely to remain uncertain for the foreseeable future. These laws and regulations may be interpreted and applied differently and inconsistently over time and from jurisdiction to jurisdiction, and it is possible that they will be interpreted and applied in ways that may have a material adverse effect on our business, financial condition, results of operations and prospects.

In the United States, various federal and state regulators, including governmental agencies like the Consumer Financial Protection Bureau and the Federal Trade Commission, have adopted, or are considering adopting, laws and regulations concerning personal information and data security. Certain state laws may be more stringent or broader in scope, or offer greater individual rights, with respect to personal information than federal, international or other state laws, and such laws may differ from each other, all of which may complicate compliance efforts. For example, the California Consumer Privacy Act (CCPA), which increases privacy rights for California residents and imposes obligations on companies that process their personal information, came into effect on January 1, 2020. Among other things, the CCPA requires covered companies to provide new disclosures to California consumers and provide such consumers new data protection and privacy rights, including the ability to opt-out of certain sales of personal information. The CCPA provides for civil penalties for violations, as well as a private right of action for certain data breaches that result in the loss of personal information. This private right of action may increase the likelihood of, and risks associated with, data breach litigation. In addition, laws in all 50 U.S. states require businesses to provide notice to consumers whose personal information has been disclosed as a result of a data breach. State laws are changing rapidly and there is discussion in the U.S. Congress of a new comprehensive federal data privacy law to which we would become subject if it is enacted. Additionally, California voters approved a new privacy law, the California Privacy Rights Act (CPRA), in the November 3, 2020 election. Effective starting on January 1, 2023, the CPRA will significantly modify the CCPA, including by expanding consumers' rights with respect to certain sensitive personal information. The CPRA also creates a new state agency that will be vested with authority to implement

and enforce the CCPA and the CPRA. New legislation proposed or enacted in various other states will continue to shape the data privacy environment nationally. Certain state laws may be more stringent or broader in scope, or offer greater individual rights, with respect to confidential, sensitive and personal information than federal, international or other state laws, and such laws may differ from each other, which may complicate compliance efforts.

Furthermore, regulations promulgated pursuant to the Health Insurance Portability and Accountability Act of 1996 (HIPAA), establish privacy and security standards that limit the use and disclosure of individually identifiable health information (known as "protected health information" or PHI) and require the implementation of administrative, physical and technological safeguards to protect the privacy of PHI and ensure the confidentiality, integrity and availability of electronic PHI. Determining whether protected health information has been handled in compliance with applicable privacy standards and our contractual obligations can require complex factual and statistical analyses and may be subject to changing interpretation. Although we take measures to protect sensitive data from unauthorized access, use or disclosure, our information technology and infrastructure may be vulnerable to attacks by hackers or viruses or breached due to employee error, malfeasance or other malicious or inadvertent disruptions. Any such breach or interruption could compromise our networks and the information stored there could be accessed by unauthorized parties, manipulated, publicly disclosed, lost or stolen. Any such access, breach or other loss of information could result in legal claims or proceedings, liability under federal or state laws that protect the privacy of personal information (such as the HIPAA and the Health Information Technology for Economic and Clinical Health Act (HITECH)), and regulatory penalties. Notice of breaches must be made to affected individuals, the Secretary of the Department of Health and Human Services, and for extensive breaches, notice may need to be made to the media or State Attorneys General. Such a notice could harm our reputation and our ability to compete.

In Europe, the collection, use, storage, disclosure, transfer, or other processing of personal data regarding individuals in the European Economic Area (EEA), including personal health data, is subject to the General Data Protection Regulation (GDPR), which became effective on May 25, 2018. The GDPR is wide-ranging in scope and imposes numerous requirements on companies that process personal data, including requirements relating to processing health and other sensitive data, obtaining consent of the individuals to whom the personal data relates, providing information to individuals regarding data processing activities, implementing safeguards to protect the security and confidentiality of personal data, providing notification of data breaches and taking certain measures when engaging third-party processors. The GDPR also imposes strict rules on the transfer of personal data to countries outside the EEA, including the United States, and permits data protection authorities to impose large penalties for violations of the GDPR, including potential fines of up to €20 million or 4% of annual global revenues, whichever is greater. The GDPR also confers a private right of action on data subjects and consumer associations to lodge complaints with supervisory authorities, seek judicial remedies and obtain compensation for damages resulting from violations of the GDPR. In addition, the GDPR includes restrictions on cross-border data transfers. The GDPR may increase our responsibility and liability in relation to personal data that we process where such processing is subject to the GDPR, and we may be required to put in place additional mechanisms to ensure compliance with the GDPR, including as implemented by individual countries. Compliance with the GDPR will be a rigorous and time- intensive process that may increase our cost of doing business or require us to change our business practices, and despite those efforts, there is a risk that we may be subject to fines and penalties, litigation and reputational harm in connection with our European activities.

The exit of the United Kingdom (UK) from the EU, often referred to as Brexit, also has created uncertainty with regard to data protection regulation in the UK. Specifically, the UK exited the EU on January 1, 2020, subject to a transition period that ended December 31, 2020. Under the post-Brexit Trade and Cooperation Agreement between the EU and the UK, the UK and EU have agreed that transfers of personal data to the UK from EEA member states will not be treated as 'restricted transfers' to a non-EEA country for a period of up to four months from January 1, 2021, plus a potential further two months extension (the "Extended Adequacy Assessment Period"). Although the current maximum duration of the Extended Adequacy Assessment Period is six months, it may end sooner, for example, in the event that the European Commission adopts an adequacy

decision in respect of the UK, or the UK amends the UK GDPR and/or makes certain changes regarding data transfers under the UK GDPR/Data Protection Act 2018 without the consent of the EU (unless those amendments or decisions are made simply to keep relevant UK laws aligned with the EU's data protection regime). If the European Commission does not adopt an 'adequacy decision' in respect of the UK prior to the expiry of the Extended Adequacy Assessment Period, from that point onwards the UK will be an 'inadequate third country' under the GDPR and transfers of personal data from the EEA to the UK will require a 'transfer mechanism' such as the Standard Contractual Clauses.

Further, the European Court of Justice (ECJ) invalidated the EU-U.S. Privacy Shield, which had enabled the transfer of personal data from the EU to the U.S. for companies that had self-certified to the Privacy Shield in July 2020. The ECJ decision also raised questions about the continued validity of one of the primary alternatives to the EU-U.S. Privacy Shield, namely the European Commission's Standard Contractual Clauses, and EU regulators have issued additional guidance regarding considerations and requirements that we and other companies must consider and undertake when using the Standard Contractual Clauses. Although the EU has presented a new draft set of contractual clauses, at present, there are few, if any, viable alternatives to the EU-U.S. Privacy Shield and the Standard Contractual Clauses. To the extent that we were to rely on the EU-U.S. or Swiss-U.S. Privacy Shield programs, we will not be able to do so in the future, and the ECJ's decision and other regulatory guidance or developments otherwise may impose additional obligations with respect to the transfer of personal data from the EU and Switzerland to the U.S., each of which could restrict our activities in those jurisdictions, limit our ability to provide our products and services in those jurisdictions, or increase our costs and obligations and impose limitations upon our ability to efficiently transfer personal data from the EU and Switzerland to the U.S.

We are in the process of evaluating compliance needs, and are still finalizing formal policies and procedures related to the storage, collection and processing of information, and still need to conduct internal or external data privacy audits, to ensure our compliance with all applicable data protection laws and regulations. Additionally, we still need to assess our third-party vendors' compliance with applicable data protection laws and regulations. All of these evolving compliance and operational requirements impose significant costs, such as costs related to organizational changes, implementing additional protection technologies, training employees and engaging consultants, which are likely to increase over time. In addition, such requirements may require us to modify our data processing practices and policies, distract management or divert resources from other initiatives and projects, all of which could have a material adverse effect on our business, financial condition, results of operations and prospects. Any failure or perceived failure by us or our third-party vendors, collaborators, contractors and consultants to comply with any applicable federal, state or similar foreign laws and regulations relating to data privacy and security, or could result in damage to our reputation, as well as proceedings or litigation by governmental agencies or other third parties, including class action privacy litigation in certain jurisdictions, which could subject us to significant fines, sanctions, awards, penalties or judgments, all of which could have a material adverse effect on our business, financial condition, results of operations and prospects.

If we fail to comply with environmental, health and safety laws and regulations, we could become subject to fines or penalties or incur costs that could have a material adverse effect on the success of our business.

We are subject to numerous environmental, health and safety laws and regulations, including those governing laboratory procedures and the handling, use, storage, treatment and disposal of hazardous materials and wastes. Our operations involve the use of hazardous and flammable materials, including chemicals and biological and radioactive materials. Our research and development and manufacturing operations also produce hazardous waste products. We generally contract with third parties for the disposal of these materials and wastes. We cannot eliminate the risks of contamination or injury from these materials. We could be held liable for any resulting damages in the event of contamination or injury resulting from the use of hazardous materials by us, and any liability could exceed our resources. We also could incur significant costs associated with civil or criminal fines and penalties.

Although we maintain general liability insurance as well as workers' compensation insurance to cover us for costs and expenses we may incur due to injuries to our employees resulting from the use of hazardous materials, this insurance may not provide adequate coverage against potential liabilities. We do not maintain insurance for environmental liability or toxic tort claims that may be asserted against us in connection with our storage or disposal of biological, hazardous or radioactive materials.

In addition, we may incur substantial costs in order to comply with current or future environmental, health and safety laws and regulations. These current or future laws and regulations may impair our research and development. Failure to comply with these laws and regulations also may result in substantial fines, penalties or other sanctions.

Further, with respect to the operations of our any future third-party contract manufacturers, it is possible that if they fail to operate in compliance with applicable environmental, health and safety laws and regulations or properly dispose of wastes associated with our products, we could be held liable for any resulting damages, suffer reputational harm or experience a disruption in the manufacture and supply of our product candidates or products. In addition, our supply chain may be adversely impacted if any of our third-party contract manufacturers become subject to injunctions or other sanctions as a result of their non-compliance with environmental, health and safety laws and regulations.

We are subject to U.S. and certain foreign export and import controls, sanctions, embargoes, anti-corruption laws, and anti-money laundering laws and regulations. Compliance with these legal standards could impair our ability to compete in domestic and international markets. We can face criminal liability and other serious consequences for violations, which can harm our business.

We are subject to export control and import laws and regulations, including the U.S. Export Administration Regulations, U.S. Customs regulations, various economic and trade sanctions regulations administered by the U.S. Treasury Department's Office of Foreign Assets Controls, the U.S. Foreign Corrupt Practices Act of 1977, as amended, (FCPA), the U.S. domestic bribery statute contained in 18 U.S.C. § 201, the U.S. Travel Act, the USA PATRIOT Act, and other state and national anti-bribery and anti-money laundering laws in the countries in which we conduct activities. Anti-corruption laws are interpreted broadly and prohibit companies and their employees, agents, contractors, and other collaborators from authorizing, promising, offering, or providing, directly or indirectly, improper payments or anything else of value to recipients in the public or private sector. We may engage third parties to sell our products outside the United States, to conduct clinical trials, and/or to obtain necessary permits, licenses, patent registrations, and other regulatory approvals. We have direct or indirect interactions with officials and employees of government agencies or government-affiliated hospitals, universities, and other organizations. We can be held liable for the corrupt or other illegal activities of our employees, agents, contractors, and other collaborators, even if we do not explicitly authorize or have actual knowledge of such activities. Any violations of the laws and regulations described above may result in substantial civil and criminal fines and penalties, imprisonment, the loss of export or import privileges, debarment, tax reassessments, breach of contract and fraud litigation, reputational harm, and other consequences.

Risks Related to this Offering and Ownership of our Common Stock

There has been no prior public market for our common stock, the stock price of our common stock may be volatile or may decline regardless of our operating performance and you may not be able to resell your shares at or above the initial public offering price.

There has been no public market for our common stock prior to this offering. The initial public offering price for our common stock will be determined through negotiations between the underwriters and us and may vary from the market price of our common stock following this offering. If you purchase shares of our common stock in this offering, you may not be able to resell those shares at or above the initial public offering price. An active or liquid market in our common stock may not develop upon the completion of this offering or, if it does

develop, it may not be sustainable. The market price of our common stock may fluctuate significantly in response to numerous factors, many of which are beyond our control, including:

- the timing of our launch and commercialization of our products and degree to which such launch and commercialization meets the expectations of securities analysts and investors;
- actual or anticipated fluctuations in our operating results, including fluctuations in our quarterly and annual results;
- operating and research and development expenses exceed our plans and expectations;
- the failure or discontinuation of any of our product development and research programs;
- changes in the structure or funding of research at academic and research laboratories and institutions, including changes that would affect their ability to purchase our instruments or consumables;
- variations in the financial results of competitive companies;
- the introduction and success of existing or new competitive businesses or technologies;
- announcements about new research programs or products by us or our competitors;
- announcements of new pricing or product bundling terms offered by our competitors;
- intellectual property litigation or developments in disputes concerning infringement of patents or other proprietary rights;
- the recruitment or departure of key personnel;
- litigation and governmental investigations involving us, our industry or both;
- regulatory or legal developments in the United States and other countries;
- volatility and variations in market conditions in the life sciences technology sector generally, or the genomics and proteomics sectors specifically;
- investor perceptions of us or our industry;
- the level of expenses related to any of our research and development programs or future products or product enhancements;
- actual or anticipated changes in our estimates as to our financial results or development timelines;
- changes in estimates or recommendations by securities analysts, if any, that cover our common stock or companies that are perceived to be similar to us;
- whether our financial results meet the expectations of securities analysts or investors;
- the announcement or expectation of additional financing efforts;
- sales of our common stock by us or sales of our common stock or common stock by our insiders or other stockholders;
- the expiration of market standoff or lock-up agreements;
- the COVID-19 pandemic, natural disasters or major catastrophic events; and
- general economic, industry and market conditions.

We will have broad discretion in the use of the net proceeds from this offering and may not use them effectively.

We cannot specify with any certainty the particular uses of the net proceeds that we will receive from this offering, but we currently expect to use the net proceeds to finalize the development and commercialization of

our G4 Integrated Solution through our ongoing sales and marketing activities, to fund the product development and commercialization of our PX Integrated Solution, for other development work associated with advancing the integration of our core sequencing engine into other platforms and kits, working capital and other general corporate purposes. We will have broad discretion in the application of the net proceeds from this offering, including working capital and other general corporate purposes, and you and other stockholders may disagree with how we spend or invest these proceeds. The failure by our management to apply these funds effectively could adversely affect our business and financial condition. Pending their use, we may invest the net proceeds from our initial public offering in a manner that does not produce income or that loses value. These investments may not yield a favorable return to our investors.

If you purchase shares of our common stock in this offering, you will experience substantial and immediate dilution.

If you purchase shares of our common stock in this offering, you will experience substantial and immediate dilution in the pro forma net tangible book value per share of $ per share as of March 31, 2021, based on an assumed initial public offering price of our common stock of $ per share, the midpoint of the price range on the cover page of this prospectus, because the price that you pay will be substantially greater than the pro forma net tangible book value per share of the common stock that you acquire. This dilution is due in large part to the fact that our earlier investors paid substantially less than the initial public offering price when they purchased their shares of our capital stock. You will experience additional dilution upon exercise of options to purchase common stock under our equity incentive plans, upon vesting of options to purchase common stock under our equity incentive plans, if we issue restricted stock to our employees under our equity incentive plans or if we otherwise issue additional shares of our common stock.

Substantial amounts of our outstanding shares may be sold into the market when lock-up periods end. If there are substantial sales of shares of our common stock, the price of our common stock could decline.

The price of our common stock could decline if there are substantial sales of our common stock, particularly sales by our directors, executive officers and significant stockholders, or if there is a large number of shares of our common stock available for sale and the market perceives that sales will occur. After this offering, we will have outstanding shares of our common stock, based on the number of shares outstanding as of March 31, 2021, and assuming the automatic conversion of our 2021 Notes into shares of our common stock, assuming an initial public offering price of $ per share, which is the midpoint of the price range set forth on the cover page of this prospectus. All of the shares of common stock sold in this offering will be available for sale in the public market, unless purchased by our affiliates or existing stockholders. Substantially all of our outstanding shares of common stock are currently restricted from resale as a result of market-standoff agreements and lock-up" agreements, which may be waived by J.P. Morgan Securities LLC and Goldman Sachs & Co. LLC with or without notice as more fully described in the section titled "Underwriting." These shares will become available to be sold 181 days after the date of this prospectus. Shares held by directors, executive officers and other affiliates will be subject to volume limitations under Rule 144 under the Securities Act of 1933, as amended, or the Securities Act, and various vesting agreements.

After this offering, certain of our stockholders will have rights, subject to some conditions, to require us to file registration statements covering their shares or to include their shares in registration statements that we may file for ourselves or our stockholders, subject to lockup agreements. We also intend to register shares of common stock that we have issued and may issue under our employee equity incentive plans. Once we register these shares, they will be able to be sold freely in the public market upon issuance, subject to existing market standoff or lock-up agreements.

The market price of the shares of our common stock could decline as a result of the sale of a substantial number of our shares of common stock in the public market or the perception in the market that the holders of a large number of shares intend to sell their shares.

The concentration of our stock ownership will likely limit your ability to influence corporate matters, including the ability to influence the outcome of director elections and other matters requiring stockholder approval.

Based upon the shares of common stock outstanding as of 2021, after giving effect to the conversion of all outstanding shares of convertible preferred stock as of that date, into an aggregate of shares of our common stock, including convertible note shares, prior to this offering, our executive officers, directors and the holders of more than 5% of our outstanding common stock, in the aggregate, beneficially owned approximately % of our common stock, and upon the completion of this offering, that same group, in the aggregate, will beneficially own approximately % of our common stock, assuming no purchases of shares in this offering or the directed share program by any members of this group, no exercise by the underwriters of their option to purchase additional shares, no exercise of outstanding options or warrants and after giving effect to the issuance of shares in this offering. As a result, these stockholders, acting together, will have significant influence over all matters that require approval by our stockholders, including the election of directors and approval of significant corporate transactions. Corporate actions might be taken even if other stockholders, including those who purchase shares in this offering, oppose them. This concentration of ownership might also have the effect of delaying or preventing a change of control of our company that other stockholders may view as beneficial.

If our estimates or judgments relating to our critical accounting policies are based on assumptions that change or prove to be incorrect, our results of operation could fall below our publicly announced guidance or the expectations of securities analysts and investors, resulting in a decline in the market price of our common stock.

The preparation of financial statements in conformity with U.S. GAAP requires management to make estimates and assumptions that affect the amounts reported in our financial statements and accompanying notes. We base our estimates on historical experience and estimates and on various other assumptions that we believe to be reasonable under the circumstances, the results of which form the basis for making judgments about the carrying values of assets, liabilities, equity, revenue and expenses that are not readily apparent from other sources. For example, in connection with the implementation of the new revenue accounting standard if and when we have product sales, management makes judgments and assumptions based on our interpretation of the new standard. The new revenue standard is principle-based and interpretation of those principles may vary from company to company based on their unique circumstances. It is possible that interpretation, industry practice and guidance may evolve as we apply the new standard. If our assumptions underlying our estimates and judgements relating to our critical accounting policies change or if actual circumstances differ from our assumptions, estimates or judgements, our operating results may be adversely affected and could fall below our publicly announced guidance or the expectations of securities analysts and investors, resulting in a decline in the market price of our common stock.

We are an "emerging growth company," and we cannot be certain if the reduced reporting requirements applicable to emerging growth companies will make our common stock less attractive to investors.

We are an "emerging growth company" as defined in the JOBS Act and we intend to take advantage of some of the exemptions from reporting requirements that are applicable to other public companies that are not emerging growth companies, including:

- the option to present only two years of audited financial statements, in addition to any required unaudited interim financial statements, with correspondingly reduced "Management's Discussion and Analysis of Financial Condition and Results of Operations" disclosure;
- not being required to comply with the auditor attestation requirements of Section 404(b) of the Sarbanes Oxley Act;

- not being required to comply with any requirement that may be adopted by the Public Company Accounting Oversight Board regarding mandatory audit firm rotation or a supplement to the auditor's report providing additional information about the audit and the financial statements;
- not being required to disclose certain executive compensation-related items such as the correlation between executive compensation and performance and comparisons of the chief executive officer's compensation to median employee compensation; and
- not being required to submit certain executive compensation matters to stockholder advisory votes, such as "say-on-pay," "say-on-frequency," and "say-on-golden parachutes."

The JOBS Act permits an "emerging growth company" such as us to take advantage of an extended transition period to comply with new or revised accounting standards applicable to public companies. We have elected to avail ourselves of this exemption and, as a result, we will adopt new or revised accounting standards on the relevant dates on which adoption of such standards is required for private companies.

We cannot predict if investors will find our common stock less attractive because we will rely on these exemptions. If some investors find our common stock less attractive as a result, there may be a less active trading market for our common stock and our stock price may be more volatile. We may take advantage of these reporting exemptions until we are no longer an emerging growth company. We will remain an emerging growth company until the earlier of (1) the last day of the fiscal year (a) following the fifth anniversary of the completion of this offering, (b) in which we have total annual gross revenue of at least $1.07 billion or (c) in which we are deemed to be a large accelerated filer, which means the market value of our common stock that is held by non-affiliates exceeds $700 million as of the prior June 30th and (2) the date on which we have issued more than $1.0 billion in non-convertible debt during the prior three-year period. Even after we no longer qualify as an emerging growth company, we may continue to qualify as a "smaller reporting company," which would allow us to take advantage of many of the same exemptions from disclosure requirements including reduced disclosure obligations regarding executive compensation in this prospectus and our periodic reports and proxy statements, if either (i) the market value of our stock held by non-affiliates is less than $250 million or (ii) our annual revenue is less than $100 million during the most recently completed fiscal year and the market value of our stock held by non-affiliates is less than $700 million.

We do not intend to pay dividends for the foreseeable future.

We have never declared nor paid cash dividends on our capital stock. We currently intend to retain any future earnings to finance the operation and expansion of our business, and we do not expect to declare or pay any dividends in the foreseeable future. The Loan Agreement also contains a negative covenant which prohibits us from paying dividends subject to limited exceptions. Consequently, stockholders must rely on sales of their common stock after price appreciation, which may never occur, as the only way to realize any future gains on their investment.

Delaware law and provisions in our amended and restated certificate of incorporation and amended and restated bylaws that will be in effect at the completion of this offering could make a merger, tender offer or proxy contest difficult, thereby depressing the trading price of our common stock.

Following the completion of this offering, our status as a Delaware corporation and the anti-takeover provisions of the Delaware General Corporation Law may discourage, delay or prevent a change in control by prohibiting us from engaging in a business combination with an interested stockholder for a period of three years after the person becomes an interested stockholder, even if a change of control would be beneficial to our existing stockholders. In addition, our amended and restated certificate of incorporation and amended and restated bylaws that will be in effect at the completion of this offering will contain provisions that may make the acquisition of our company more difficult, including the following:

- a classified board of directors with three-year staggered terms, which could delay the ability of stockholders to change the membership of a majority of our board of directors;

- the ability of our board of directors to issue shares of preferred stock and to determine the price and other terms of those shares, including preferences and voting rights, without stockholder approval, which could be used to significantly dilute the ownership of a hostile acquirer;
- the exclusive right of our board of directors to elect a director to fill a vacancy created by the expansion of our board of directors or the resignation, death or removal of a director, which prevents stockholders from being able to fill vacancies on our board of directors;
- a prohibition on stockholder action by written consent, which forces stockholder action to be taken at an annual or special meeting of our stockholders;
- the requirement that a special meeting of stockholders may be called only by a majority vote of our entire board of directors, the chair of our board of directors or our chief executive officer, which could delay the ability of our stockholders to force consideration of a proposal or to take action, including the removal of directors;
- the requirement for the affirmative vote of holders of at least 66 2/3% of the voting power of all of the then-outstanding shares of the voting stock, voting together as a single class, to amend the provisions of our amended and restated certificate of incorporation or our amended and restated bylaws, which may inhibit the ability of an acquirer to effect such amendments to facilitate an unsolicited takeover attempt; and
- advance notice procedures with which stockholders must comply to nominate candidates to our board of directors or to propose matters to be acted upon at a stockholders' meeting, which may discourage or deter a potential acquirer from conducting a solicitation of proxies to elect the acquirer's own slate of directors or otherwise attempting to obtain control of us.

In addition, as a Delaware corporation, we are subject to Section 203 of the Delaware General Corporation Law. These provisions may prohibit large stockholders, in particular those owning 15% or more of our outstanding voting stock, from merging or combining with us for a certain period of time. A Delaware corporation may opt out of this provision by express provision in its original certificate of incorporation or by amendment to its certificate of incorporation or bylaws approved by its stockholders. However, we have not opted out of this provision.

These and other provisions in our amended and restated certificate of incorporation, amended and restated bylaws and Delaware law could make it more difficult for stockholders or potential acquirers to obtain control of our board of directors or initiate actions that are opposed by our then-current board of directors, including delay or impede a merger, tender offer or proxy contest involving our company. The existence of these provisions could negatively affect the price of our common stock and limit opportunities for you to realize value in a corporate transaction.

For information regarding these and other provisions, see the section titled "Description of Capital Stock."

Our amended and restated certificate of incorporation will provide that the Court of Chancery of the State of Delaware and the U.S. federal district courts are the exclusive forums for substantially all disputes between us and our stockholders, which could limit our stockholders' ability to obtain a favorable judicial forum for disputes with us or our directors, officers or employees.

Our amended and restated certificate of incorporation will provide that the Court of Chancery of the State of Delaware is the exclusive forum for any derivative action or proceeding brought on our behalf, any action asserting a breach of fiduciary duty, any action asserting a claim against us arising pursuant to the Delaware General Corporation Law, our certificate of incorporation or our bylaws or any action asserting a claim against us that is governed by the internal affairs doctrine.

This provision would not apply to suits brought to enforce a duty or liability created by the Exchange Act. Furthermore, Section 22 of the Securities Act creates concurrent jurisdiction for federal and state courts over all

such Securities Act actions. Accordingly, both state and federal courts have jurisdiction to entertain such claims. To prevent having to litigate claims in multiple jurisdictions and the threat of inconsistent or contrary rulings by different courts, among other considerations, our certificate of incorporation will further provide that the U.S. federal district courts will be the exclusive forum for resolving any complaint asserting a cause of action arising under the Securities Act, including all causes of action asserted against any defendant named in such complaint. For the avoidance of doubt, this provision is intended to benefit and may be enforced by us, our officers and directors, the underwriters to any offering giving rise to such complaint, and any other professional entity whose profession gives authority to a statement made by that person or entity and who has prepared or certified any part of the documents underlying the offering. While the Delaware courts have determined that such choice of forum provisions are facially valid, a stockholder may nevertheless seek to bring a claim in a venue other than those designated in the exclusive forum provisions. In such instance, we would expect to vigorously assert the validity and enforceability of the exclusive forum provisions of our certificate of incorporation. This may require significant additional costs associated with resolving such action in other jurisdictions and there can be no assurance that the provisions will be enforced by a court in those other jurisdictions.

This choice of forum provision may limit a stockholder's ability to bring a claim in a judicial forum that it finds favorable for disputes with us or our directors, officers or other employees and may discourage these types of lawsuits. Alternatively, if a court were to find the choice of forum provision contained in our amended and restated certificate of incorporation to be inapplicable or unenforceable in an action, we may incur additional costs associated with resolving such action in other jurisdictions.

General Risk Factors

If securities or industry analysts do not publish research or publish inaccurate or unfavorable research about our business, our stock price and trading volume could decline.

The trading market for our common stock will depend in part on the research and reports published by securities or industry analysts about us or our business. Securities and industry analysts do not currently, and may never, publish research on our company. If no or only very few securities analysts commence coverage of us, or if industry analysts cease coverage of us, the trading price for our common stock would be negatively affected. If one or more of the analysts who cover us downgrade our common stock or publish inaccurate or unfavorable research about our business, our common stock price would likely decline. If one or more of these analysts cease coverage of us or fail to publish reports on us regularly, demand for our common stock could decrease, which might cause our common stock price and trading volume to decline.

We could be subject to securities class action litigation.

In the past, securities class action litigation has often been brought against a company following a decline in the market price of its securities. This risk is especially relevant for us because life science technology companies have experienced significant stock price volatility in recent years. If we face such litigation, it could result in substantial costs and a diversion of management's attention and resources, which could harm our business.

Requirements associated with being a public company will increase our costs significantly, as well as divert significant company resources and management attention.

After the completion of this offering, we will be subject to the reporting requirements of the Securities Exchange Act of 1934, as amended, or the Exchange Act, or the other rules and regulations of the Securities and Exchange Commission, or the SEC, or any securities exchange relating to public companies. Compliance with the various reporting and other requirements applicable to public companies requires considerable time and attention of management and we will incur significant legal, accounting and other expenses that we did not incur as a private company. We cannot assure you that we will satisfy our obligations as a public company on a timely basis.

In addition, as a public company, it may be more difficult or more costly for us to obtain certain types of insurance, including directors' and officers' liability insurance, and we may be forced to accept reduced policy

limits and coverage or incur substantially higher costs to obtain the same or similar coverage. The impact of these events could also make it more difficult for us to attract and retain qualified personnel to serve on our board of directors, our board committees or as executive officers.

If we fail to maintain proper and effective internal controls, our ability to produce accurate and timely financial statements could be impaired, which could result in sanctions or other penalties that would harm our business.

After the completion of this offering, we will be subject to the reporting requirements of the Exchange Act, the Sarbanes-Oxley Act and the rules and regulations of the Nasdaq Global Market. The Sarbanes Oxley Act requires, among other things, that we maintain effective disclosure controls and procedures and internal controls over financial reporting. Commencing with our fiscal year ending the year after this offering is completed, we must perform system and process design evaluation and testing of the effectiveness of our internal controls over financial reporting to allow management to report on the effectiveness of our internal controls over financial reporting in our Form 10-K filing for that year, as required by Section 404 of the Sarbanes-Oxley Act. To achieve compliance with Section 404 within the prescribed period, we will be engaged in a process to document and evaluate our internal control over financial reporting, which is both costly and challenging. In this regard, we will need to continue to dedicate internal resources, including through hiring additional financial and accounting personnel, potentially engage outside consultants and adopt a detailed work plan to assess and document the adequacy of internal control over financial reporting, continue steps to improve control processes as appropriate, validate through testing that controls are functioning as documented and implement a continuous reporting and improvement process for internal control over financial reporting. This will require that we incur substantial additional professional fees and internal costs to expand our accounting and finance functions and that we expend significant management efforts. Prior to this offering, we have never been required to test our internal controls within a specified period and, as a result, we may experience difficulty in meeting these reporting requirements in a timely manner.

We may discover weaknesses in our system of internal financial and accounting controls and procedures that could result in a material misstatement of our financial statements. Our internal control over financial reporting will not prevent or detect all errors and all fraud. A control system, no matter how well designed and operated, can provide only reasonable, not absolute, assurance that the control system's objectives will be met. Because of the inherent limitations in all control systems, no evaluation of controls can provide absolute assurance that misstatements due to error or fraud will not occur or that all control issues and instances of fraud will be detected.

If we are not able to comply with the requirements of Section 404 of the Sarbanes-Oxley Act in a timely manner, or if we are unable to maintain proper and effective internal controls over financial reporting, we may not be able to produce timely and accurate financial statements. If that were to happen, our investors could lose confidence in our reported financial information, the market price of our stock could decline and we could be subject to sanctions or investigations by the SEC or other regulatory authorities including equivalent foreign authorities.

SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus contains forward-looking statements. All statements other than statements of historical facts contained in this prospectus, including statements regarding our future results of operations and financial position, future revenue, business strategy, prospects, products, research and development costs, timing and likelihood of success, as well as plans and objectives of management for future operations, are forward-looking statements. These statements involve known and unknown risks, uncertainties and other important factors that are in some cases beyond our control and may cause our actual results, performance or achievements to be materially different from any future results, performance or achievements expressed or implied by the forward-looking statements.

The words “anticipate,” “believe,” contemplate,” “continue” “could,” “estimate,” “expect,” “intend,” “may,” “might,” “plan,” “potential” “predict,” “project,” “should,” “target,” “will” or “would” or the negative of these terms or other similar expressions are intended to identify forward looking statements. Forward-looking statements contained in this prospectus include, but are not limited to, statements about:

- estimates of our addressable market, market growth, future revenue, expenses, capital requirements and our needs for additional financing;
- our ability to successfully implement our commercialization plan for our G4 Integrated Solution and planned PX Integrated Solution;
- the implementation of our business model and strategic plans for our G4 Integrated Solution and planned PX Integrated Solution;
- our expectations regarding the rate and degree of market acceptance of our G4 Integrated Solution and planned PX Integrated Solution;
- our ability to compete with competitive companies and technologies in our industry;
- our ability to manage and grow our business and commercialize our G4 Integrated Solution and planned PX Integrated Solution;
- our ability to develop and commercialize new products and development product enhancements;
- our ability to establish and maintain intellectual property protection for our products or avoid or defend claims of infringement;
- the performance of third-party manufacturers and suppliers;
- our ability to effectively manufacture our products
- the potential effects of government regulation;
- our ability to hire and retain key personnel and to manage our future growth effectively;
- our ability to obtain additional financing in this or future offerings;
- the volatility of the trading price of our common stock;
- our expectations regarding use of proceeds from this offering;
- the impact of local, regional, and national and international economic conditions and events;
- the impact of COVID-19 on our business;
- our expectations about market trends; and
- our expectations regarding the period during which we will qualify as an emerging growth company under the JOBS Act

These forward-looking statements are subject to a number of risks, uncertainties and assumptions, including those described in the section titled “Risk Factors” elsewhere in this prospectus. Moreover, we operate in a very

competitive and rapidly changing environment. New risks emerge from time to time. It is not possible for our management to predict all risks, nor can we assess the impact of all factors on our business or the extent to which any factor, or combination of factors, may cause actual results to differ materially from those contained in any forward-looking statements we may make. In light of these risks, uncertainties and assumptions, the forward-looking events and circumstances discussed in this prospectus may not occur and actual results could differ materially and adversely from those anticipated or implied in the forward-looking statements.

You should not rely upon forward-looking statements as predictions of future events. Although we believe that the expectations reflected in the forward-looking statements are reasonable, we cannot guarantee that the future results, advancements, discoveries, levels of activity, performance or events and circumstances reflected in the forward-looking statements will be achieved or occur. Moreover, except as required by law, neither we nor any other person assumes responsibility for the accuracy and completeness of the forward-looking statements. Except to the extent required by law, we undertake no obligation to update publicly any forward-looking statements for any reason after the date of this prospectus to conform these statements to actual results or to changes in our expectations.

You should read this prospectus and the documents that we reference in this prospectus and have filed with the SEC as exhibits to the registration statement of which this prospectus is a part with the understanding that our actual future results, levels of activity, performance and events and circumstances may be materially different from what we expect.

MARKET, INDUSTRY AND OTHER DATA

This prospectus contains estimates, projections and other information concerning our industry, including market size and growth rates of the markets in which we participate, that are based on our management's estimates and research, as well as industry and general publications and research, surveys and studies conducted by third parties. In some cases, we do not expressly refer to the sources from which this data is derived. In addition, industry publications, studies and surveys generally state that they have been obtained from sources believed to be reliable, although they do not guarantee the accuracy or completeness of such information. The third-party industry publications, studies and surveys contained in this prospectus are provided below:

- DeciBio LLC. "Next Generation Sequencing (NGS) Market Size, Growth and Trends (2017-2023)" (December 2020).
- Allied Market Research. "Next Generation Sequencing Market – Global Opportunity Analysis and Industry Forecast, 2019-2026" (June 2019).
- DeciBio LLC. "NGS and Spatial Omics and Landscape and Trends" (February 2020).
- Allied Market Research. "Global Proteomics Market – Opportunity Analysis and Industry Forecast, 2018-2025" (March 2019).

Management's estimates are derived from publicly available information, their knowledge of our industry and their assumptions based on such information and knowledge, which we believe to be reasonable. This data involves a number of assumptions and limitations which are necessarily subject to a high degree of uncertainty and risk due to a variety of factors, including those described in the section titled "Risk Factors." These and other factors could cause our future performance to differ materially from our assumptions and estimates.

Certain monetary amounts, percentages, and other figures included elsewhere in this prospectus have been subject to rounding adjustments. Accordingly, figures shown as totals in certain tables or charts may not be the arithmetic aggregation of the figures that precede them, and figures expressed as percentages in the text may not total 100% or, as applicable, when aggregated may not be the arithmetic aggregation of the percentages that precede them.

USE OF PROCEEDS

We estimate that the net proceeds from this offering will be approximately $ million (or $ million if the underwriters exercise their option to purchase additional shares in full) after deducting the estimated underwriting discounts and commissions and estimated offering expenses payable by us, assuming an initial public offering price of $ per share, which is the midpoint of the price range set forth on the cover page of this prospectus.

Each $1.00 increase or decrease in the assumed initial public offering price of $ per share, which is the midpoint of the price range set forth on the cover page of this prospectus, would increase or decrease, as applicable, the net proceeds to us from this offering by $ million, assuming the number of shares offered by us, as set forth on the cover page of this prospectus, remains the same and after deducting the estimated underwriting discounts and commissions and estimated offering expenses payable by us. Similarly, an increase or decrease, as applicable, of 1.0 million shares in the number of shares offered by us, as set forth on the cover page of this prospectus, would increase or decrease, as applicable, our net proceeds from this offering by approximately $ million, assuming no change in the assumed initial public offering price per share and after deducting the estimated underwriting discounts and commissions and estimated offering expenses payable by us. The principal purposes of this offering are to increase our financial flexibility and create a public market for our common stock.

We currently intend to use the net proceeds from this offering, together with our existing cash and cash equivalents and short-term investments, as follows:

- approximately $ million to finalize the development and commercialization of our G4 Integrated Solution; and
- approximately $ million to fund the product development and commercialization of our PX Integrated Solution; and
- the remainder, if any, for other development work associated with advancing the integration of our core sequencing engine into other platforms and kits, working capital and other general corporate purposes.

We may also use a portion of the net proceeds from this offering to acquire, in-license or invest in products, technologies or businesses that complement our business. However, we do not have binding agreements or commitments for any acquisitions or investments outside the ordinary course of business at this time.

Based on our current business plans, we believe that the net proceeds of this offering, together with our existing cash and cash equivalents and short-term investments will enable us to fund our operating expenses and capital expenditure requirements through at least the next months from the date of this prospectus.

This expected use of the net proceeds from this offering represents our intentions based upon our current plans and business conditions. As of the date of this prospectus, we cannot predict with certainty all of the particular uses for the net proceeds to be received upon the completion of this offering or the amounts that we will actually spend on the uses set forth above.

The amount and timing of our actual expenditures will depend on numerous factors, including the results of our research and development and commercialization efforts, cash flows from operations, the anticipated growth of our business and any unforeseen cash needs. As a result, our management will have broad discretion over the use of the proceeds from this offering.

Pending our use of the net proceeds from this offering, we plan to invest the net proceeds in a variety of capital preservation investments, including short-term interest-bearing investment-grade securities, certificates of deposit or government securities.

DIVIDEND POLICY

We have never declared or paid any cash dividends on our capital stock and we do not currently intend to pay any cash dividends on our capital stock for the foreseeable future. We currently intend to retain all available funds and any future earnings to support operations and to finance the growth and development of our business. Any future determination to declare and pay dividends will be made at the discretion of our board of directors subject to applicable laws and will depend upon, among other factors, our results of operations, financial condition, business prospects, contractual restrictions, capital requirements and other factors our board of directors may deem relevant. Additionally, our Loan Agreement contains customary covenants, including restrictions on our ability to pay cash dividends.

CAPITALIZATION

The following table sets forth our cash and cash equivalents and short-term investments and total capitalization as of March 31, 2021, as follows:

- on an actual basis;
- on a pro forma basis to reflect: (i) the automatic conversion of all outstanding shares of our convertible preferred stock into an aggregate of 38,826,388 shares of common stock; (ii) the automatic conversion of the outstanding SVB warrant to purchase convertible preferred stock into a warrant to purchase 129,156 shares of our common stock; (iii) the conversion of the 2021 Notes into shares of our common stock and a charge to accumulated deficit of $ million related to the conversion of the 2021 Notes, assuming an initial public offering price of $ per share, which is the midpoint of the price range set forth on the cover page of this prospectus, in connection with the closing of this offering (which is reflected in pro forma cash and cash equivalents and short-term investments and additional paid in capital); and (iv) the filing and effectiveness of our amended and restated certificate of incorporation, each of which will occur immediately prior to the completion of this offering; and
- on a pro forma as adjusted basis to give effect to (i) the pro forma adjustments set forth above and (ii) the sale and issuance of shares of our common stock by us in this offering, based upon the receipt by us of the estimated net proceeds from this offering at the assumed initial public offering price of $ per share, which is the midpoint of the price range set forth on the cover page of this prospectus, and after deducting the estimated underwriting discounts and commissions and estimated offering expenses payable by us.

The pro forma and pro forma as adjusted set forth in the table below is illustrative only and will be adjusted on the actual initial public offering price and other terms of this offering determined at pricing. This information should be read in conjunction with our financial statements and related notes included elsewhere in this prospectus, as well as the section of this prospectus titled "Management's Discussion and Analysis of Financial Condition and Results of Operations."

	As of March 31, 2021		
	Actual	Pro Forma	Pro Forma As Adjusted(1)
	(in thousands, except share and per share data) (unaudited)		
Cash and cash equivalents	$ 45,526	$	$
Short-term investments	104,595		
Convertible Promissory Notes	$ 130,500	$	$
Long-term debt, net of debt discount	9,473		
Series Seed convertible preferred stock, $0.0001 par value per share; 6,520,790 shares authorized and outstanding, actual; no shares authorized, issued or outstanding, pro forma and pro forma as adjusted	4,486		
Series A convertible preferred stock, $0.0001 par value per share; 12,932,429 shares authorized and outstanding, actual; no shares authorized, issued or outstanding, pro forma and pro forma as adjusted	19,908		
Series B convertible preferred stock, $0.0001 par value; 19,373,169 shares authorized and outstanding, actual; no shares authorized, issued or outstanding, pro forma and pro forma as adjusted	44,790		

	As of March 31, 2021		
	Actual	Pro Forma	Pro Forma As Adjusted(1)
		(in thousands, except share and per share data) (unaudited)	
Stockholders' (deficit) equity:			
Common stock, $0.0001 par value per share; 60,272,685 shares authorized, 12,824,184 shares outstanding, which excludes 3,202,996 shares subject to repurchase, actual; shares authorized, shares outstanding, which excludes 3,202,996 shares subject to repurchase, pro forma; shares authorized, shares issued and shares outstanding, pro forma as adjusted	1		
Additional paid-in capital	3,735		
Accumulated other comprehensive income (loss)	(32)		
Accumulated deficit	(77,046)		
Total stockholders' (deficit) equity	(73,342)		
Total capitalization	$ 135,815	$	$

(1) Each $1.00 increase or decrease in the assumed initial public offering price of $ per share, which is the midpoint of the offering price range set forth on the cover page of this prospectus, would increase or decrease, as applicable, our pro forma as adjusted amount of each of cash and cash equivalents, short-term investments, additional paid-in capital, total stockholders' (deficit) equity and total capitalization by approximately $ million, assuming that the number of shares of common stock offered by us, as set forth on the cover page of this prospectus, remains the same, and after deducting the estimated underwriting discounts. Similarly, each increase or decrease of 1.0 million shares in the number of shares of common stock offered by us would increase or decrease, as applicable, our pro forma as adjusted amount of each of cash and cash equivalents, short-term investments, additional paid-in capital, total stockholders' (deficit) equity and total capitalization by approximately $ million, assuming the assumed initial public offering price of $ per share remains the same, and after deducting the estimated underwriting discounts and commissions. The pro forma as adjusted information discussed above is illustrative only and will be adjusted based on the actual public offering price and other terms of this offering determined at pricing.

If the underwriters exercise their option to purchase additional shares of our common stock in full, our pro forma as adjusted cash and cash equivalents, short-term investments, additional paid-in capital, total stockholders' (deficit) equity, total capitalization, and shares of common stock outstanding as of March 31, 2021 would be $ million, $ million, $ million, $ million, and shares, respectively.

The number of shares of our common stock to be outstanding after this offering on a pro forma and pro forma as adjusted basis is based on shares of our common stock outstanding as of March 31, 2021 (after giving effect to the Note Conversion), and excludes the following:

- 4,475,799 shares of common stock issuable upon the exercise of stock options outstanding as of March 31, 2021, with a weighted-average exercise price of $3.05 per share;
- shares of common stock issuable upon the exercise of stock options granted after March 31, 2021, with a weighted-average exercise price of $ per share;
- 3,202,996 shares of common stock issued as of March 31, 2021 upon the early exercise of certain stock options, but not deemed outstanding as they are subject to a right of repurchase;
- 129,156 shares of our common stock issuable upon the exercise of the SVB warrant to purchase shares of our Series B convertible preferred stock (which will convert into a warrant to purchase 129,156 shares of our common stock immediately prior to the completion of this offering) with an exercise price of $2.32 per share;
- 934,124 shares of common stock reserved for future issuance under our 2016 Plan, as of March 31, 2021, which shares will be added to the shares to be reserved under our 2021 Plan upon its effectiveness;
- shares of common stock reserved for future issuance under our 2021 Plan, which will become effective on the business day immediately prior to the date of effectiveness of the registration

statement of which this prospectus forms a part, as well as any automatic increases in the number of shares of common stock reserved for future issuance under this plan; and

- shares of common stock reserved for issuance under our 2021 ESPP, which will become effective on the business day immediately prior to the date of effectiveness of the registration statement of which this prospectus forms a part, as well as any automatic increases in the number of shares of common stock reserved for future issuance under this plan.

2021 Convertible Notes

Immediately prior to the completion of this offering, each of the 2021 Notes will automatically convert into shares of our common stock at a conversion price equal to the lower of (i) 80% of the initial public offering price per share set forth on the cover page of this prospectus and (ii) the price per share obtained by dividing $1.5 billion by the fully-diluted capitalization of the Company prior to this offering.

The table below shows the effect the conversion of the 2021 Notes at assumed initial public offering prices of $, $, and $ per share, which represent the low, mid, and high point, respectively, of the price range set forth on the cover page of this prospectus. However, the actual initial public offering price may be lower or higher than the midpoint of this range, which would increase or decrease, respectively, the number of shares of common stock to be issued upon the conversion of our 2021 Notes, as described in more detail below. As a result, the total number of shares of common stock to be issued upon the conversion of the 2021 Notes will not be known until the determination of the actual initial public offering price per share following the effectiveness of the registration statement of which this prospectus forms a part. The initial public offering prices shown in the table below are hypothetical and illustrative.

Illustrative Initial Public Offering Price Per Share	Number of Shares of Common Stock to be Issued upon Conversion of 2021 Notes
$	
$	
$	

DILUTION

If you invest in our common stock in this offering, your ownership interest will be immediately diluted to the extent of the difference between the assumed initial public offering price per share of our common stock and the pro forma as adjusted net tangible book value per share of our common stock immediately after this offering.

Historical net tangible book value (deficit) per share represents our total tangible assets less our liabilities and convertible preferred stock that is not included in equity divided by the total number of shares of common stock outstanding. As of March 31, 2021, our historical net tangible book value (deficit) was approximately $, or $ per share. Our pro forma net tangible book value as of March 31, 2021, was approximately $ million, or $ per share, after giving effect to (i) the automatic conversion of all outstanding shares of our convertible preferred stock into an aggregate of 38,826,388 shares of common stock immediately prior to the completion of this offering and (ii) the conversion of the 2021 Notes into shares of our common stock, assuming an initial public offering price of $ per share, the midpoint of the price range set forth on the cover page of this prospectus, in connection with the closing of this offering. Pro forma net tangible book value per share represents our pro forma net tangible book value divided by the number of shares of our common stock outstanding as of March 31, 2021, after giving effect to the pro forma adjustments described above.

After giving effect to (i) the pro forma adjustments set forth above and (ii) our sale in this offering of shares of common stock at an assumed initial public offering price of $ per share, the midpoint of the price range set forth on the cover page of this prospectus and after deducting estimated underwriting discounts and commissions and estimated offering expenses, our pro forma as adjusted net tangible book value as of March 31, 2021 would have been approximately $ million, or $ per share of our common stock. This represents an immediate increase in pro forma as adjusted net tangible book value of $ per share to our existing stockholders and an immediate dilution of $ per share to investors purchasing common stock in this offering.

The following table illustrates this dilution to new investors on a per share basis:

Assumed initial public offering price per share		$
Historical net tangible book value (deficit) per share as of March 31, 2021	$	
Pro forma increase in net tangible book value per share as of March 31, 2021, attributable to the pro forma transactions described above		
Pro forma net tangible book value (deficit) per share as of March 31, 2021		
Increase in pro forma net tangible book value per share attributable to new investors in this offering		
Pro forma as adjusted net tangible book value per share immediately after this offering		
Dilution per share to new investors purchasing shares in this offering		$

Each $1.00 increase or decrease in the assumed initial public offering price of $ per share, the midpoint of the price range set forth on the cover page of this prospectus, would increase or decrease, as applicable, the pro forma as adjusted net tangible book value, by $ per share and the dilution per share to new investors by $ per share, assuming the number of shares offered by us, as set forth on the cover page of this prospectus, remains the same, after deducting the estimated underwriting discounts and commissions and estimated offering expenses payable by us. Similarly, each increase or decrease of 1.0 million shares in the number of shares we are offering would increase or decrease, as applicable, our pro forma as adjusted net tangible book value by approximately $ million, or $ per share, and the pro forma dilution per share to investors in this offering by $ per share, assuming that the assumed initial public offering price remains the same, and after deducting the estimated underwriting discounts and commissions and estimated offering expenses payable by us. The pro forma information discussed above is illustrative only and will change based on the actual initial public offering price, number of shares and other terms of this offering determined at pricing.

If the underwriters' option to purchase additional shares in this offering is exercised in full, the pro forma as adjusted net tangible book value would be $ per share, the increase in the pro forma net tangible book value per share for existing stockholders would be $ per share and the dilution to new investors participating in this offering would be $ per share.

The table below summarizes, as of March 31, 2021, on a pro forma as adjusted basis, the number of shares of our common stock, the total consideration, and the weighted-average price per share (i) paid to us by our existing stockholders and (ii) to be paid by new investors participating in this offering at an assumed initial public offering price of $ per share, the midpoint of the price range set forth on the cover page of this prospectus, before deducting the estimated underwriting discounts and commissions and estimated offering expenses payable by us.

	Shares Purchased		Total Consideration		Weighted-Average Price Per Share
	Number	Percent	Amount	Percent	
Existing stockholders(1)		%	$	%	$
New investors					$
Total		100.0 %	$	100.0%	

(1) The presentation in this table regarding ownership by existing stockholders does not give effect to any purchases that existing stockholders may make through our directed share program or otherwise purchase in this offering.

In addition, if the underwriters' option to purchase additional shares is exercised in full, the number of shares held by existing stockholders will be reduced to % of the total number of shares of common stock to be outstanding upon completion of this offering, and the number of shares of common stock held by new investors participating in this offering will be further increased to % of the total number of shares of common stock to be outstanding upon completion of the offering.

Each $1.00 increase or decrease in the assumed initial public offering price of $ per share would increase or decrease, as applicable, the total consideration paid by new investors by $ and increase or decrease, as applicable, the percent of total consideration paid by new investors by %, assuming the number of shares we are offering, as set forth on the cover page of this prospectus, remains the same, after deducting the estimated underwriting discounts and commissions. We may also increase or decrease the number of shares we are offering. Similarly, each increase or decrease of 1.0 million in the number of shares offered by us would increase or decrease, as applicable, the total consideration paid by new investors by $, assuming that the assumed initial price to the public remains the same, and after deducting the estimated underwriting discounts and commissions and estimated offering expenses.

The foregoing tables and calculations (other than historical net tangible book value) are based on shares of common stock outstanding as of March 31, 2021, after giving effect to the Note Conversion and excludes the following:

- 4,475,799 shares of common stock issuable upon the exercise of stock options outstanding as of March 31, 2021, with a weighted-average exercise price of $3.05 per share;
- shares of common stock issuable upon the exercise of stock options granted after March 31, 2021, with a weighted-average exercise price of $ per share;
- 3,202,996 shares of common stock issued as of March 31, 2021 upon the early exercise of certain stock options, but not deemed outstanding as they are subject to a right of repurchase;
- 129,156 shares of our common stock issuable upon the exercise of the SVB warrant to purchase shares of our Series B convertible preferred stock (which will convert into a warrant to purchase 129,156 shares of our common stock immediately prior to the completion of this offering) with an exercise price of $2.32 per share;

- 934,124 shares of common stock reserved for future issuance under our 2016 Plan, as of March 31, 2021, which shares will be added to the shares to be reserved under our 2021 Plan upon its effectiveness;
- shares of common stock reserved for future issuance under our 2021 Plan, which will become effective on the business day immediately prior to the date of effectiveness of the registration statement of which this prospectus forms a part, as well as any automatic increases in the number of shares of common stock reserved for future issuance under this plan; and
- shares of common stock reserved for issuance under our 2021 ESPP, which will become effective on the business day immediately prior to the date of effectiveness of the registration statement of which this prospectus forms a part, as well as any automatic increases in the number of shares of common stock reserved for future issuance under this plan.

To the extent that any outstanding options or warrants are exercised or new awards are granted under our equity compensation plans, new investors will experience further dilution.

MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

The following discussion and analysis of our financial condition and results of operations should be read in conjunction with our financial statements and the related notes to those statements included elsewhere in this prospectus. In addition to historical financial information, the following discussion and analysis contains forward-looking statements that involve risks, uncertainties and assumptions. Our actual results and timing of selected events may differ materially from those anticipated in these forward-looking statements as a result of many factors, including, but not limited to, those discussed under the section titled "Risk Factors" and elsewhere in this prospectus. See also the section titled "Special Note Regarding Forward-Looking Statements."

Overview

We are a life science technology company that is leveraging NGS and multiomics technologies to build products that empower researchers and clinicians. We developed a unique and proprietary NGS technology, which we refer to as our Sequencing Engine. This Sequencing Engine is the foundational platform technology that forms the basis of our products in development and our core product tenets: accuracy, speed, flexibility and scale. We are currently developing two integrated solutions that are purpose built to target specific applications in which these core product tenets matter most. Our first integrated solution is targeted at the NGS market and comprises the G4 Instrument and an associated menu of consumable kits, which we refer to collectively as our G4 Integrated Solution. The G4 Instrument is a benchtop next generation sequencer designed to produce fast and accurate genetic sequencing results. The integrated purpose built kits that run on the G4 Instrument address specific applications in fast growing markets including oncology and immune profiling. We have completed our beta pilot program and anticipate initiating an early access program followed by a commercial launch of the G4 Integrated Solution by the end of 2021, with intentions for units to ship in the first half of 2022. Our second integrated solution in development comprises the PX Instrument and an associated menu of consumable kits, which we refer to collectively as our PX Integrated Solution. Leveraging sequencing as a universal readout, the PX Integrated Solution combines single cell analysis, spatial analysis, genomics and proteomics in one integrated instrument providing a versatile multiomics solution. We anticipate commercial launch of the PX Integrated Solution in 2023.

The core of our Sequencing Engine is comprised of unique and proprietary chemistry, including novel chemical compounds, polymers and enzymes. This chemistry is designed to produce high sequencing accuracy and rapid cycle times that we believe can drive improvements in NGS. To take full advantage of the proprietary chemistry, we are developing purpose built instrumentation consisting of high speed, high resolution imaging and innovative fluidic design. We believe that our Sequencing Engine, together with our proprietary innovations in molecular biology techniques, will enable differentiated applications in fast growing markets. These innovations are supported by our intellectual property portfolio.

Each of our two integrated solutions in development consists of an instrument that incorporates our Sequencing Engine and associated consumables that are used exclusively on each instrument. The G4 Integrated Solution is designed to target the NGS market in particular applications that require accuracy, speed, flexibility and scale. We are focused on oncology where there is an increasing need for higher sensitivity technology such as rare variant detection in liquid biopsy. Another area of focus is immunology where there is a need to better understand and harness the immune system in infectious disease, autoimmune disorders, and cancer immunotherapy. We aim to execute a three step commercialization plan for our G4 Integrated Solution consisting of: (i) collaborating with select partners to conduct beta pilot tests, which we have completed, (ii) expanding collaborations with additional potential customers in an early access program and (iii) offering our G4 Integrated Solution broadly to the market, with commercial launch by the end of 2021 and shipping units in the first half of 2022.

The PX Integrated Solution is our second product in development and is a multiomics platform designed to target the markets for single cell, spatial analysis and proteomics. The PX Integrated Solution will leverage our

Sequencing Engine as a readout mechanism to provide a high-resolution view of biology at the single cell and tissue level. We believe the PX Integrated Solution, when launched, will be a high-throughput, versatile platform capable of measuring levels of RNA transcription, protein expression, and sequence specific information directly in cells and tissues. We believe the PX Integrated Solution will have broad application across many areas of biology. We are initially focused on applications in oncology and immunology, with future expansion into other applications such as neurology. We are currently in an advanced prototype development stage for the PX Integrated Solution, and expect to begin an early access program in 2022 and full commercial launch in 2023. We believe that our G4 and PX Integrated Solutions can unleash the full power of sequencing as a universal reader of biology, and open new frontiers in research and medicine.

Our research and development teams have designed and developed our proprietary products using an interdisciplinary approach that combines expertise across a broad range of scientific disciplines including chemistry, molecular biology, hardware, software and engineering. Our research and development groups work together to build products that enable researchers and clinicians to accelerate discoveries across the fastest growing markets in basic research, clinical applications, single cell analysis and spatial genomics and proteomics. Our research and development teams are located in our headquarters in La Jolla, California. The overarching goal of our research and development programs is to accelerate genomics for the advancement of science and medicine. To this end, we focus our research and development efforts on the following areas: improving the performance of our core Sequencing Engine; developing new applications for our G4 Integrated Solution; developing our PX Integrated Solution; and enabling future instruments.

As of March 31, 2021, we had 106 employees in research and development. Looking forward, we will continue to invest in efforts to support the ongoing development of our instruments and consumables, as well as enhance the overall performance of our solutions.

Our business model focuses on first driving customer adoption of our G4 Integrated Solution followed by our PX Integrated Solution. We believe customer adoption will then form a base of users who in turn drive an on going revenue stream by purchasing our consumables. We plan to focus our commercial efforts on (i) expanding the installed base of our G4 Integrated Solution and PX Integrated Solution across a wide array of customer segments and (ii) driving applications, scale of experimentation and discoveries that lead to increasing utilization of our integrated platforms by our customers. Similar to our strategy of developing purpose built products based on feedback from potential customers, we also plan to develop a service and support organization that will focus on creating an unparalleled customer experience. We believe in the value of creating new customers while expanding utilization of existing customers through the sale of purpose built products and the establishment of customer loyalty.

We are in the process of building out our commercial organization and we expect to have direct commercial staff in sales, customer success, technical support, field service and market development functions. Throughout our commercial rollout, we will need to scale each function within our commercial organization in anticipation of demand and with the intent to deliver exceptional customer experience. We believe that coupling customer experience with a transformative integrated solution will allow us to deliver substantial value to our customers, build long-term customer loyalty and enhance our competitive differentiation.

We expect to initially target customers in North America through direct sales and customer support organizations. We also plan to expand outside North America to sell and support our products in the European Union, United Kingdom, Asia Pacific and Japan, and expect to expand access to our products in other geographies through well established distribution networks.

The majority of our consumable products and instruments are manufactured in-house at our facilities in La Jolla, California. These manufacturing operations include: flow cell surface synthesis and flow cell assembly, reagent formulation and cartridge filling, kit assembly and packaging as well as analytical and functional quality control testing. We obtain some components of our consumables from third-party suppliers. While some of these

components are sourced from a single supplier, we have qualified second sources for several of our critical components including reagents, flow cells, optics and oligonucleotides. We believe that having dual sources for our components helps reduce the risk of a production delay caused by a disruption in the supply of a critical component.

Since we were incorporated in 2016, we have devoted substantially all of our resources to research and product development activities, initiating our commercialization plans, establishing and maintaining our intellectual property portfolio, hiring personnel, raising capital, building our commercial infrastructure and providing general and administrative support for these activities. Since our incorporation, we have incurred significant losses and negative cash flows from operations. During the year ended December 31, 2020, we incurred a net loss of $27.9 million and used $24.9 million of cash in operations. During the three months ended March 31, 2021, we incurred a net loss of $23.9 million and used $9.2 million of cash in our operations. As of March 31, 2021, we had an accumulated deficit of $77.0 million. We expect to continue to incur significant and increasing losses and do not expect positive cash flows from operations for the foreseeable future, and our net losses may fluctuate significantly from period to period, depending on the timing of and expenditures on our planned commercialization and research and development activities.

From the date of our incorporation through March 31, 2021, we have financed our operations primarily through private placements of convertible preferred stock and convertible promissory notes. We have raised aggregate net proceeds of approximately $199.7 million, net of issuance costs, including the $130.5 million we raised through the issuance of convertible promissory notes in February 2021 (the 2021 Notes). As of March 31, 2021, we had cash and cash equivalents and short-term investments totaling $150.1 million.

We expect our expenses to increase significantly in connection with our ongoing activities, as we:

- continue to develop and then commercialize our G4 Integrated Solution and planned PX Integrated Solution;
- attract, hire and retain qualified personnel;
- expand our sales, marketing, service, support and distribution infrastructure to support our commercialization plans and engage in commercialization activities;
- build-out and expand our in-house manufacturing capabilities and engage in larger scale manufacturing activities;
- continue to engage in research and development of other products and enhancements;
- implement operational, financial and management information systems;
- obtain, maintain, expand, and protect our intellectual property portfolio; and
- operate as a public company.

COVID-19 Pandemic

As a result of the COVID-19 pandemic, we have, and could continue to, experience disruptions that could severely impact our business. For instance, there have been standing “stay-at-home” orders in California, and specifically San Diego County where our headquarters is located. We have continued to operate within the rules applicable to our business; however, an extended implementation of these governmental mandates or reinstitution of additional more stringer mandates could further impact our ability to operate effectively and conduct ongoing research and development or other activities. The COVID-19 pandemic has also adversely affected the broader economy and created volatility in the financial markets which could curtail the research and development budgets of our customers, our ability to hire additional personnel and our financing prospects.

We are continuing to assess the impact of the COVID-19 pandemic on our current and future business and operations, as well as on our industry and the healthcare system. Any of the foregoing could harm our operations

and we cannot anticipate all the ways in which it could be adversely impacted by health epidemics such as COVID-19. For additional information, see the section titled “Risk Factors—Risks Related to Our Business and Industry—The COVID-19 pandemic and efforts to reduce its spread have adversely impacted, and are expected to continue to materially and adversely impact, our business and operations.”

Key Factors Affecting Our Performance

We believe that our financial performance will be driven primarily by the factors below. While each of these factors presents significant opportunities for our business, they also pose important challenges that we must successfully address in order to grow our business and improve our results of operations. Our ability to successfully address the factors below is subject to various risks and uncertainties, including those described under the section titled “Risk Factors”.

Commercial adoption of our G4 Integrated Solution and planned PX Integrated Solution

Our financial performance will be driven by, and a key factor to our future success will be, the rate of commercial adoption of our G4 Integrated Solution and planned PX Integrated Solution. We plan to drive customer adoption, beginning with our beta pilot program and early access program, to generate clear use-cases and peer-reviewed publications that illustrate our product performance claims and value proposition. Following our beta pilot and early access programs, we plan to commercially launch through a direct sales and marketing organization in the United States and to sell and support our products in the European Union, United Kingdom, Asia Pacific and Japan, either through direct sales or through established distribution networks. Throughout our commercial rollout, we aim to grow our sales and marketing team to foster deep customer relationships initially with customers running our G4 Integrated Solution and to establish and grow distribution networks capable of deploying our G4 Integrated Solution in select areas of the World. We also plan to offer different access options, including capital sale and lease options for the G4 Integrated Solution to meet each customer’s unique needs. As a result of this effort, we will aim to increase our installed base of G4 Integrated Solution and planned PX Integrated Solution.

Utilization by our customers of our G4 Integrated Solution and planned PX Integrated Solution

The utilization of our integrated solutions and the corresponding purchases of consumables and other products and services will represent a source of potential recurring revenue from our customers. We plan to drive utilization of our G4 Integrated Solution and planned PX Integrated Solutions by engaging with customers to help them advance through the adoption cycle from early stage validation to integration of our integrated solutions with existing NGS workflows with plug and play interoperability. As our integrated solutions advance towards becoming fully integrated within customer workflows, we believe customers will utilize more of our consumables and other products and services, thus driving recurring revenue.

Expansion of our G4 Integrated Solution and PX Integrated Solution beyond initial applications

The rate of growth of our revenue will rely on part in our ability to expand our market opportunity. We aim to continually innovate and develop new products, applications, workflows and analysis tools that may potentially lead to new end markets, applications and business models. We believe that the capabilities offered by our integrated solutions and future products may potentially lead to additional or complementary addressable markets, and may expand our market opportunity.

Revenue mix between our instruments and consumables, and gross margin

Any revenue we generate will be derived from sales of our instruments, consumables and services. As our customers begin adopting our G4 Integrated Solution, we expect our revenue will be derived principally from sales of such instruments. As we drive utilization of our G4 Integrated Solution, and customers begin utilizing

more of our consumables, we estimate that the portion of our revenue from sales of our consumables will grow over time. We expect the revenue contribution from our consumables to vary on a quarterly basis due to several factors, including the timing and number of publications of scientific papers demonstrating the value of our consumables, the availability of grants to fund research, budgetary timing and our introduction of new product features and new consumables offerings. Additionally, we expect the mix and variance of sales between our instruments and consumables to cause our gross margin to vary on a quarterly basis.

Rate of investment in our growth

As we commercially launch and grow sales of our G4 Integrated Solution and, once developed and commercially launched, our PX Integrated Solution, we expect to continue investing in our manufacturing capabilities and commercial infrastructure. Additionally, we plan to further invest in research and development as we hire employees with the necessary scientific and technical backgrounds to enhance and expand our existing products and help us bring new products to market, and expect to incur additional research and development expenses as a result. We also plan to invest in sales and marketing activities and expect to incur additional general and administrative expenses as we support our growth and our operations as a publicly traded company.

Expansion of our geographic presence

We are initially building our commercial infrastructure to sell and support our products directly in the United States and Canada. We also have plans in place to sell and support our products in the European Union, United Kingdom, Asia Pacific and Japan, either through direct sales or through well established distribution networks and expect to expand access to our products in other geographies through distributors. We expect to incur expenses as we expand our geographic presence and generate revenue either through direct sales or through distribution networks. Our expenses and revenue will fluctuate depending on the extent to which we pursue direct sales or distribution arrangements outside the United States and Canada.

Columbia License Agreement and Sponsored Research Agreement

In August 2016, we entered into an Exclusive License Agreement (the Columbia License Agreement) with the Trustees of Columbia University in the City of New York (Columbia). Under the Columbia License Agreement, we pay an annual license fee that increases each year, until it reaches a low six digit fee for the fifth, and for each subsequent year, for so long as the Columbia License Agreement remains in force. For any products within the scope of the Columbia License Agreement that we commercialize, we are required to pay royalties ranging from low to mid-single digits on net sales of Patent Products and low single digit royalty rates on net sales of Other Products (as defined in the Columbia License Agreement). We can credit our yearly annual license fee against any yearly royalty fees payable to Columbia. Additionally, if we receive any income in connection with any sublicenses, we must pay Columbia a high single digit percentage of that income. Finally, the Columbia License Agreement provides for payments to Columbia based upon our achievement of certain development and commercialization milestones, which could total up to $3.9 million over the life of the Columbia License Agreement. As of March 31, 2021, we have paid an aggregate of $0.1 million to Columbia pursuant to the terms of the Columbia License Agreement.

In addition to the Columbia License Agreement, the Company entered into a sponsored research agreement (the Research Agreement) to fund a research program with the University. The program ended in 2019. The Company recorded $0.1 million of expense in connection with the Research Agreement for the year ended December 2019.

Components of Results of Operations

Revenue

We have not generated any revenue from product sales to date and may not do so in the near future. If our development and commercialization efforts are successful for our G4 Integrated Solution and planned PX

Integrated Solution, we expect to generate revenue in the future from sales of our G4 Instrument and planned PX Instrument and the associated consumables and services. We cannot predict if, when, or to what extent we will generate revenue from the commercialization and sale of our integrated solutions.

Operating Expenses

Research and Development

Research and development expenses consist primarily of:

- salaries, payroll taxes, employee benefits and stock-based compensation for personnel engaged in research and development activities;
- fees paid to consultants;
- license fees paid to third parties for use of their intellectual property, laboratory supplies and development compound materials;
- allocated overhead costs; and
- facilities and depreciation costs.

All research and development costs are charged to expense as incurred.

We plan to continue to increase our investment in our research and development efforts related to our product development pipeline and our proprietary technology, including our G4 Integrated Solution and planned PX Integrated Solution. Therefore, we expect our research and development expenses will increase in absolute dollars in future periods as we incur expenses associated with hiring additional personnel, purchasing supplies and materials, and the allocation of facility expense associated with the ongoing build-out of our expansion facilities to support our research and development efforts.

General and Administrative

General and administrative expenses consist primarily of salaries, payroll taxes, employee benefits and stock-based compensation for personnel in our executive management, finance, administration and human resources functions, professional service fees, including for legal, accounting, patent, and auditing and other services, allocated overhead costs, facilities and depreciation costs, and other costs to support our operations.

We plan to continue to increase our investment in our personnel as we grow. We also expect to incur additional costs as a result of operating as a public company, including costs of accounting, audit, legal, regulatory and tax compliance services, director and officer insurance costs, and investor and public relations costs. As a result, we expect our general and administrative expenses will increase in absolute dollars in future periods.

Interest and Other Income

Interest income consists of interest earned on cash and cash equivalents and on our short-term investments in corporate notes and government agency notes.

Interest Expense

Interest expense consists of interest related to our Loan Agreement with Silicon Valley Bank, including amortization of the debt issuance cost.

Change in Fair Value of Warrant Liability

We account for the warrant for preferred stock in accordance with the provisions of Accounting Standards Codification 480, *Distinguishing Liabilities from Equity*, which requires that warrants for the purchase of shares in contingently redeemable instruments be accounted for as liabilities. We adjust the carrying value of such warrant liability to its estimated fair value at the end of each reporting period, with increases or decreases in fair value recorded as other income or expense in the statements of operations.

Change in Fair Value of 2021 Notes

We account for the 2021 Notes in accordance with the provisions of Accounting Standards Codification (ASU) 480, Distinguishing Liabilities from Equity and ASU 2020-06, Debt – Debt with Conversion and Other Options (Subtopic 470-20) and Derivatives and Hedging – Contracts in Entity's Own Equity (Subtopic 815-40). We adjust the carrying value of such notes liability to its estimated fair value at the end of each reporting period, with increases or decreases in fair value recorded as other income or expense in the statements of operations.

Results of Operations

Comparison of the Three Months Ended March 31, 2020 and 2021

The following table summarizes our results of operations for the periods indicated:

	Three Months Ended March 31,			
	2020	2021 (unaudited) (in thousands)	$ Change	% Change
Operating expenses:				
Research and development	$ 4,026	$ 6,608	$ 2,582	64.1%
General and administrative	1,377	3,654	2,277	165.4%
Loss from operations	$ (5,403)	$ (10,262)	$ (4,859)	89.9%
Interest and other income	216	131	(85)	(39.4)%
Interest expense	(66)	(188)	(122)	184.8%
Change in fair value of convertible promissory notes	—	(11,400)	(11,400)	100.0%
Change in fair value of warrant liability	—	(2,202)	(2,202)	100.0%
Net loss	$ (5,253)	$ (23,921)	$(18,668)	355.4%

Research and Development Expenses

The following table summarizes our research and development expenses for the periods indicated:

	Three Months Ended March 31,			
	2020	2021 (unaudited) (in thousands)	$ Change	% Change
Research and development expenses	$4,026	$ 6,608	$ 2,582	64.1%

Research and development expenses increased by $2.6 million, or 64.1%, from the three months ended March 31, 2020 to the three months ended March 31, 2021. The increase was primarily due to an increase in product development efforts related to our G4 Integrated Solution, including $1.3 million in employee compensation costs, stock-based compensation and other related costs as a result of an increase in research and development personnel, $0.9 million in laboratory materials, supplies and reagents used for in-house research, $0.2 million related to the expansion of facilities and maintenance and $0.1 million in professional and consulting fees.

General and Administrative Expenses

The following table summarizes our general and administrative expenses for the periods indicated:

	Three Months Ended March 31,			
	2020	2021	$ Change	% Change
		(unaudited) (in thousands)		
General and administrative expenses	1,377	3,654	2,277	165.4%

General and administrative expenses increased by $2.3 million, or 165.4%, from the three months ended March 31, 2020 to the three months ended March 31, 2021. The increase was primarily due to a $1.6 million increase in employee compensation costs, stock-based compensation and other related costs, as a result of both converting consultants to full-time employees and an increase in personnel. Other increases include $0.6 million in professional and consulting fees related to accounting and audit services and corporate legal matters.

Other Income (Expense)

	Three Months Ended March 31,			
	2020	2021	$ Change	% Change
		(in thousands)	(unaudited)	
Interest and other income	216	131	(85)	(39.4)%
Interest expense	(66)	(88)	(122)	184.8%
Change in fair value of convertible promissory notes	—	(11,400)	(11,400)	100.0%
Change in fair value of warrant liability	—	(2,202)	(2,202)	100.0%

Other expense increased by $13.8 million for the three months ended March 31, 2021 compared to the three months ended March 31, 2020, primarily due to increase in fair value of warrant liabilities by $2.2 million and increase in the fair value of our convertible promissory notes by $11.4 million.

Comparison of the Years Ended December 31, 2019 and 2020

The following table summarizes our results of operations for the periods indicated:

	Year Ended December 31,			
	2019	2020	$ Change	% Change
		(in thousands)		
Operating expenses:				
Research and development	$ 10,484	$ 21,247	$ 10,763	102.7%
General and administrative	2,286	6,287	4,001	175.0%
Loss from operations	(12,770)	(27,534)	(14,764)	115.6%
Interest and other income	463	505	42	9.1%
Interest expense	(17)	(718)	(701)	4123.5%
Change in fair value of warrant liability	—	(198)	(198)	100.0%
Net loss	$(12,324)	$ (27,945)	$(15,621)	126.8%

Research and Development Expenses

The following table summarizes our research and development expenses for the periods indicated:

	Year Ended December 31,			
	2019	2020	$ Change	% Change
		(in thousands)		
Research and development expenses	$10,484	$ 21,247	$10,763	102.7%

Research and development expenses increased by $10.8 million, or 102.7%, from the year ended December 31, 2019 to the year ended December 31, 2020. The increase was primarily due to an increase in product development efforts related to our G4 Integrated Solution, including $5.6 million in employee compensation costs, stock-based compensation and other related costs as a result of an increase in research and development personnel, $3.3 million in laboratory materials, supplies and reagents used for in-house research, $0.8 million related to the expansion of facilities and maintenance, and $0.8 million in professional and consulting fees.

General and Administrative Expenses

The following table summarizes our general and administrative expenses for the periods indicated:

	Year Ended December 31,			
	2019	2020	$ Change	% Change
		(in thousands)		
General and administrative expenses	$2,286	$ 6,287	$ 4,001	175.0%

General and administrative expenses increased by $4.0 million, or 175.0%, from the year ended December 31, 2019 to the year ended December 31, 2020. The increase was primarily due to a $3.0 million increase in employee compensation costs, stock-based compensation and other related costs, as a result of both converting consultants to full-time employees and an increase in personnel. Other increases include $0.5 million in professional and consulting fees related to accounting and audit services and corporate legal matters.

Liquidity and Capital Resources

Since we were incorporated in 2016, we have devoted substantially all of our resources to research and product development activities, initiating our commercialization plans, establishing and maintaining our intellectual property portfolio, hiring personnel, raising capital, building our commercial infrastructure and providing general and administrative support for these activities. Since our incorporation, we have not generated any revenues from product sales and have incurred significant operating losses and negative cash flows from operations. Our operations have been funded primarily through the sale and issuance of convertible preferred stock and convertible promissory notes since inception. We expect to continue to incur significant and increasing losses and do not expect positive cash flows from operations for the foreseeable future, and our net losses may fluctuate significantly from period to period, depending on the timing of and expenditures on our planned commercialization and research and development activities. In particular, we expect to incur increasing costs in the near term in connection with the commercial launch of our G4 Integrated Solution, which will include, among others, increasing our sales and marketing and other commercialization efforts to drive market adoption of our G4 Integrated Solution and scaling up our manufacturing and customer support capabilities. During the year ended December 31, 2020, we incurred a net loss of $27.9 million and used $24.9 million of cash in operations. During the three months ended March 31, 2021, we incurred a net loss of $23.9 million and used $9.2 million of cash operations. As of March 31, 2021, we had an accumulated deficit of $77.0 million. As of March 31, 2021, we had cash and cash equivalents and short-term investments totaling, in aggregate, $150.1 million.

Based upon our current operating plan, we believe our existing cash, cash equivalents and investments will enable us to fund our operating expenses and capital expenditure requirements through at least the next twelve months from the date of this prospectus. We have based our estimate of capital requirements on assumptions that may prove to be incorrect and as we continue to face challenges and uncertainties, our available capital resources may be consumed more rapidly than currently expected due to a variety of factors, including: (i) delays in execution of or a significant expansion of our commercialization plans; (ii) changes we may make to the business that affect ongoing operating expenses; (iii) changes we may make in our business or commercialization strategy; (iv) changes we may make in our research and development spending plans; (v) actions taken by our competitors; (vi) the impact of the COVID-19 pandemic; and (vii) other items affecting our forecasted level of expenditures and use of cash resources including potential acquisitions. See the section titled “Risk Factors.”

We may need to seek additional financing in the future to support our operations, research and development activities and commercialization plans. If we are not able to generate sufficient revenue to finance our cash requirements or raise additional capital or enter into financing agreements or arrangements when required on favorable terms, or at all, we may have to delay, reduce the scope of, or discontinue one or more development programs, delay potential commercialization or reduce the scope of sales or marketing activities, and pursue other cost cutting measures, including the reduction of headcount, scope of operations, and planned capital expenditures, which may have a material adverse effect on our business, results of operations, financial condition and/or ability to fund our scheduled obligations on a timely basis, or continue as a going concern. We cannot assure you that we will ever be profitable or generate positive cash flow from operating activities or that, if we achieve profitability, we will be able to sustain it.

Cash Flows

The following table presents a summary of our cash flows for the periods indicated:

	Year Ended December 31,		Three Months Ended March 31,	
	2019	2020	2020	2021
	(in thousands)		(unaudited) (in thousands)	
Net cash provided by (used in)				
Operating activities	$(11,399)	$(24,873)	$(4,709)	$ (9,185)
Investing activities	(31,500)	24,005	2,396	(90,461)
Financing activities	47,304	7,515	7,510	133,484
Net increase in cash and cash equivalents	$ 4,405	$ 6,647	$ 5,197	$ 33,838

Operating Activities

During the year ended December 31, 2020, cash used in operating activities was $24.9 million, attributable to a net loss of $27.9 million, partially offset by non-cash charges of $2.2 million and by a net change in our net operating assets and liabilities of $0.9 million. Non-cash charges primarily consisted of $1.1 million in stock-based compensation and $0.6 million of depreciation. The change in our net operating assets and liabilities was primarily due to increased accrued liabilities related to corporate bonuses of $1.3 million, partially offset by deposits related to a lease agreement of $0.3 million.

During the year ended December 31, 2019, cash used in operating activities was $11.4 million, attributable to a net loss of $12.3 million, partially offset by non-cash charges of $0.5 million and by a net change in our net operating assets and liabilities of $0.4 million. Non-cash charges primarily consisted of $0.4 million of depreciation and $0.2 million in stock-based compensation. The change in our net operating assets and liabilities was primarily due to increased accounts payable and accrued liabilities related to professional services and consulting costs of $0.5 million, partially offset by interest receivable related to short-term investments of $0.1 million.

During the three months ended March 31, 2021, cash used in operating activities was $9.2 million, attributable to a net loss of $23.9 million, offset by non-cash charges of $15.1 million and by a net change in our net operating assets and liabilities of $0.3 million. Non-cash charges primarily consisted of $11.4 million change in fair value of the 2021 Notes and $2.2 million change in fair value of warrants and stock-based compensation expense of $1.1 million.

During the three months ended March 31, 2020, cash used in operating activities was $4.7 million, attributable to a net loss of $5.3 million, offset by non-cash charges of $0.4 million. Non-cash charges primarily consisted of stock-based compensation expense of $0.2 million and $0.1 million of depreciation.

Investing Activities

During the year ended December 31, 2020, cash provided by investing activities was $24.0 million, which related to maturities of available-for-sale securities of $31.5 million, net of purchases of $6.1 million, in addition to $1.4 million in payments for purchases of property and equipment.

During the year ended December 31, 2019, cash used in investing activities was $31.5 million, which related to purchases of available-for-sale securities of $42.7 million, net of proceeds from maturities of $12.0 million, in addition to $0.8 million in payments related to purchases of property and equipment.

During the three months ended March 31, 2021, cash used in investing activities was $90.5 million, which related to purchases of available-for-sale securities of $101.6 million, net of proceeds from maturities of $11.6 million, in addition to $0.5 million in payments related to purchases of property and equipment.

During the three months ended March 31, 2020, cash provided by investing activities was $2.4 million, which related to maturities of available-for-sale securities of $4.7 million, net of purchases of $2.1 million, in addition to $0.3 million in payments related to purchases of property and equipment.

Financing Activities

During the year ended December 31, 2020, cash provided by financing activities was $7.5 million, which was primarily related to proceeds from long-term debt.

During the year ended December 31, 2019, cash provided by financing activities was $47.3 million which primarily related to net proceeds of $44.8 million from the issuance and sale of shares of our Series B convertible preferred stock. Additionally, we received $2.5 million in gross proceeds from issuance of long-term debt.

During the three months ended March 31, 2021, cash provided by financing activities was $133.5 million, which was primarily related to proceeds from the 2021 Notes of $130.5 million and $3.0 million related to issuance of common stock.

During the three months ended March 31, 2020, cash provided by financing activities was $7.5 million, which was primarily related to proceeds from long-term debt.

Indebtedness

In November 2019, we entered into the Loan Agreement with Silicon Valley Bank (SVB) pursuant to which Silicon Valley Bank agreed to lend us up to $15 million in a series of term loans (the Loan). Contemporaneously, we borrowed $2.5 million in the first of three draw-downs available through September 30, 2021. The additional draws are at our discretion, but we are subject to penalties and fees if not fully drawn down. Simultaneously with the first draw-down, Silicon Valley Bank entered into the SVB warrant with us to purchase 32,289 shares of our Series B convertible preferred stock at an exercise price of $2.3228 per share. Pursuant to the terms of the Loan Agreement, the SVB warrant will be adjusted to increase the number of shares of our Series B convertible preferred stock exercisable pursuant to the SVB warrant if we elect to draw down additional funds under the Loan.

In March 2020, we borrowed an additional $7.5 million as a second draw down related to the Loan and we adjusted the SVB warrant to increase the number of shares of our Series B convertible preferred stock exercisable pursuant to the SVB warrant by 96,867 shares at an exercise price of $2.3228 per share.

The outstanding balance of the Loan is due on the scheduled maturity date of September 1, 2023 (the Maturity Date). Payment on the Loan will be interest only through September 30, 2021, followed by 24 equal monthly payments of principal plus accrued interest commencing on October 1, 2021. The per annum interest rate for any

outstanding Loan balance is the greater of (i) 0.65% above the Prime Rate or (ii) 5.90%. The interest rate as of December 31, 2019 and 2020 and March 31, 2021 was 5.90%. In addition, a final payment (Final Payment) equal to the original principal amount of each advance multiplied by 5.50% will be due on the Maturity Date.

We may prepay the borrowed amounts, provided that we will be obligated to pay a prepayment fee equal to (i) 3% of the outstanding principal balance of all draw-downs if the draw-downs are repaid prior to the first anniversary of the draw-down date, (ii) 2% of the outstanding principal balance of all draw-downs if the draw-downs are repaid on or after the first anniversary of the draw-down date but prior to the second anniversary of the draw-down date, and (iii) 1% of the outstanding principal balance of all draw-downs if the draw-downs are repaid on or after the second anniversary of the draw-down date but before the Maturity Date. Further, we are subject to a 1% unused line fee payable to Silicon Valley Bank related to the undrawn portion of the borrowing capacity on September 30, 2021 or, if applicable, upon prepayment.

Subject to certain limited exceptions, the covenants under the Loan Agreement limit our ability to or prohibit us to permit any of our subsidiaries to, as applicable, among other things: pay cash dividends, make other distributions or make certain other changes with respect to our shares of capital stock, effect certain changes in our business, management, ownership or business locations; enter into certain mergers and acquisitions with other companies; create, incur, assume, or be liable for any additional indebtedness, or create, incur, allow, or permit to exist any additional liens; make certain investments; and enter into transactions with our affiliates.

While we have not previously breached and are currently in compliance with the covenants contained in the Loan Agreement, we may breach these covenants in the future. Our ability to comply with these covenants may be affected by events and factors beyond our control. In the event that we breach one or more covenants, Silicon Valley Bank may choose to declare an event of default and require that we immediately repay all amounts outstanding under the applicable loan agreement, terminate any commitment to extend further credit and foreclose on the collateral. The occurrence of any of these events could have a material adverse effect on our business, financial condition and results of operations. An event of default includes, but is not limited to, the following: if we fail to make any payment under the Loan Agreement when due, if we fail or neglect to perform certain obligations under the Loan Agreement, if we violate certain covenants under the Loan Agreement, if certain material adverse changes occur, if we are unable to pay our debts as they become due or otherwise become insolvent, or if we begin an insolvency proceeding.

In February 2021, we issued the 2021 Notes to various investors, in the aggregate principal amount of $130.5 million. The 2021 Notes bear interest at 6% per annum and have a maturity date in February 2023, or earlier upon certain events of default. We cannot prepay the 2021 Notes, without the consent of the holders of a majority in interest of the outstanding 2021 Notes (the Majority Noteholders). The 2021 Notes shall automatically convert, upon the first of the following transactions to occur, into: (i) shares of our common stock upon a qualified initial public offering (IPO) or a qualified transaction with a Special Purpose Acquisition Company (SPAC); or (ii) shares of our convertible preferred stock in the event of a qualified equity financing in which we issue shares of convertible preferred stock. The 2021 Notes are also convertible into shares of our convertible preferred stock issued in a non-qualifying financing transaction upon the election of the Majority Noteholders. In each case, the 2021 Notes are convertible at a conversion price equal to the lessor of (i) a per share price equal to 80% of the per share price paid by the new investors in such financing, IPO or SPAC transaction or (ii) a per share price equal to the price per share obtained by dividing $1.5 billion by the fully-diluted capitalization of our Company (the Valuation Cap). In the event of a change of control, each note holder can elect to either receive an amount equal to two times the outstanding principal and interest on such holder’s 2021 Note or convert the 2021 Note into shares of our common stock at the Valuation Cap.

Off-Balance Sheet Arrangements

During the periods presented we did not have, nor do we currently have, any off-balance sheet arrangements as defined under SEC rules.

JOBS Act

We are an "emerging growth company" as defined in the Jumpstart Our Business Startups Act of 2012, as amended, or the JOBS Act. We will remain an emerging growth company until the earliest to occur of: (i) the last day of the fiscal year in which we have more than $1.07 billion in annual gross revenue; (ii) the date we qualify as a "large accelerated filer" as defined in Rule 12b-2 under the Exchange Act, with at least $700 million of equity securities held by non-affiliates; (iii) the issuance, in any three-year period, by us of more than $1.0 billion in non-convertible debt securities; or (iv) the last day of the fiscal year ending after the fifth anniversary of our initial public offering. As a result of this status, we have taken advantage of certain exemptions from various reporting requirements in this prospectus that are applicable to other publicly-traded entities that are not emerging growth companies and may elect to take advantage of other exemptions from reporting requirements in our future filings with the SEC. In particular, in this prospectus, these exemptions include:

- the option to present only two years of audited financial statements and only two years of Management's Discussion and Analysis of Financial Condition and Results of Operations;
- not being required to comply with the auditor attestation requirements of Section 404(b) of the Sarbanes-Oxley Act of 2002, as amended, or the Sarbanes Oxley Act;
- not being required to submit certain executive compensation matters to stockholder advisory votes, such as "say-on-pay," "say-on-frequency," and "say-on-golden parachutes;" and
- not being required to disclose certain executive compensation-related items such as the correlation between executive compensation and performance and comparisons of the chief executive officer's compensation to median employee compensation.

As a result, we do not know if some investors will find our common stock less attractive. The result may be a less active trading market for our common stock, and the price of our common stock may become more volatile.

In addition, Section 107 of the JOBS Act provides that an emerging growth company can take advantage of an extended transition period for complying with new or revised accounting standards, delaying the adoption of these accounting standards until they would apply to private companies. We have elected to avail ourselves of this exemption and, as a result, we will adopt new or revised accounting standards on the relevant dates on which adoption of such standards is required for private companies. Accordingly, the information contained herein may be different than the information you receive from other public companies in which you hold stock.

Critical Accounting Policies and Estimates

The discussion and analysis of our financial condition and results of operations is based on our financial statements, which have been prepared in accordance with United States generally accepted accounting principles. The preparation of these financial statements requires us to make estimates and assumptions that affect the reported amounts of assets, liabilities, and the disclosure of contingent assets and liabilities at the date of the financial statements, as well as revenue and expenses incurred during the reporting periods. Our estimates are based on our historical experience and on various other factors that we believe are reasonable under the circumstances, the results of which form the basis for making judgments about the carrying value of assets and liabilities that are not readily apparent from other sources. Actual results may differ from these estimates under different assumptions or conditions. We believe that the accounting policies discussed below are critical to understanding our historical and future performance, as these policies relate to the more significant areas involving management's judgments and estimates.

While our significant accounting policies are described in Note 2 to our financial statements included elsewhere in this prospectus, we believe that the following critical accounting policies are most important to understanding and evaluating our reported financial results.

Stock-Based Compensation

We account for stock-based compensation by measuring and recognizing compensation expense for all share-based awards made to employees and non-employees based on estimated grant-date fair values. We use the

straight-line method to allocate compensation cost to reporting periods over the requisite service period, which is generally the vesting period. We recognize actual forfeitures by reducing the stock-based compensation in the same period as the forfeitures occur. We estimate the fair value of share-based awards to employees and non-employees using the Black-Scholes option pricing model. The Black-Scholes option pricing model requires the input of subjective assumptions, including fair value of common stock, expected term, expected volatility, risk-free interest rate and expected dividend yield, which are described in greater detail below.

Estimating the fair value of equity-settled awards as of the grant date using the Black-Scholes option pricing model is affected by assumptions regarding a number of complex variables. Changes in the assumptions can materially affect the fair value and ultimately how much stock-based compensation is recognized. These inputs are subjective and generally require significant analysis and judgment to develop. These inputs are as follows:

- *Fair value of common stock*: There has been no public market for our common stock to date. The exercise prices of our grants were determined by our board of directors based in part on valuations of our common stock prepared by a third-party valuation specialist. In connection with the preparation of our financial statements for the year ended December 31, 2020 and the three months ended March 31, 2021, we performed a retrospective review of the fair value of our common stock related to the current events available. Based on this review, we recorded stock compensation as reflected in our financial statements.
- *Expected term*: The expected term represents the average period that our options granted are expected to be outstanding and is determined using the simplified method (based on the mid-point between the weighted-average vesting date and the end of the contractual term). We have very limited historical information to develop reasonable expectations about future exercise patterns and post-vesting employment termination behavior for our stock option grants.
- *Expected volatility*: Since we have been a privately-held company and have not had any trading history for our common stock, the expected volatility was estimated based on the historical average volatility for comparable publicly traded life sciences technology companies over a period equal to the expected term of the stock option grants. The comparable companies were chosen based on their similar size, life cycle stage, or area of specialty. We will continue to apply this process until enough historical information regarding the volatility of our own stock price becomes available.
- *Risk-free interest rate*: The risk-free interest rate is based on the U.S. Treasury zero coupon issues in effect at the time of grant for periods corresponding with the expected term of the options.
- *Expected dividend yield*: We have never paid dividends on our common stock and have no plans to pay dividends on our common stock. Therefore, we used an expected dividend yield of zero.

For options granted to non-employee consultants, the fair value of these options is also measured using the Black-Scholes option pricing model reflecting the same assumptions as applied to employee options in each of the reported periods, other than the expected term which is assumed to be the remaining contractual life of the option.

We will continue to use judgment in evaluating the expected volatility, expected terms, and interest rates utilized for our stock-based compensation calculations on a prospective basis. Assumptions we used in applying the Black-Scholes option pricing model to determine the estimated fair value of our stock options granted involve inherent uncertainties and the application of significant judgment. As a result, if factors or expected outcomes change and we use significantly different assumptions or estimates, our equity-based compensation could be materially different.

See Note 11 to our financial statements included elsewhere in this prospectus for more information concerning certain of the specific assumptions we used in applying the Black-Scholes option pricing model to determine the estimated fair value of our stock options.

We recorded stock-based compensation expense of $0.2 million and $1.1 million for the years ended December 31, 2019 and 2020, respectively. We recorded stock-based compensation expense of $0.2 million and

$1.1 million for the three months ended March 31, 2020 and 2021, respectively. As of March 31, 2021, there was $28.1 million of total unrecognized stock-based compensation expense related to unvested stock options, which we expect to recognize over a remaining weighted-average period of 1.76 years. We expect to continue to grant stock options and other equity-based awards in the future, and to the extent that we do, our stock-based compensation expense recognized in future periods will likely increase. The intrinsic value of all outstanding options as of March 31, 2021 was $71.5 million.

Fair Value of Common stock

Historically, for all periods prior to our initial public offering, the fair values of the shares of our Common stock underlying our share-based awards were determined by our board of directors with input from management and the assistance of an independent third-party valuation specialist. Given the previous absence of a public trading market of our common stock and in accordance with the American Institute of Certified Public Accountants Practice Aid, *Valuation of Privately-Held-Company Equity Securities Issued as Compensation* (the Practice Aid), in addition to the third-party valuations referenced above, our board of directors exercised reasonable judgment and considered numerous objective and subjective factors to determine the best estimate of the fair value of our Common stock, including:

- our stage of development and material risks related to our business;
- our operating results and financial performance, including our levels of available capital resources;
- the progress of our research and development efforts and business strategy;
- the rights, preferences and privileges of our convertible preferred stock relative to those of our common stock;
- the prices at which we sold shares of our convertible preferred stock to outside investors in arms-length transactions;
- the lack of marketability of our common stock as a private company;
- external market conditions affecting the life sciences technology industry and trends within the industry;
- equity market conditions affecting comparable public companies; and
- general U.S. market conditions.

In valuing our common stock, the fair value of our business, or enterprise value, was determined using various valuation methods, including combinations of income, market and asset approaches with input from management. The income approach determines value by using one or more methods that convert anticipated economic benefits into a present single amount. The application of the income approach establishes value by methods that discount or capitalize earnings or cash flow, by a discount or capitalization rate that reflects investors' rate of return expectations, market conditions and the relative risk of the subject investment. The market approach involves identifying and evaluating comparable public companies and acquisition targets that operate in the same industry or which have similar operating characteristics as the subject company. From the comparable companies, publicly available information is used to extrapolate market-based valuation multiples that are applied to historical or prospective financial information in order to derive an indication of value. The asset approach determines the value of the underlying assets and liabilities of a business as a means of determining the value of the business in aggregate. This approach can include the value of both tangible and intangible assets.

The Practice Aid identifies various available methods for allocating enterprise value across classes and series of capital stock to determine the estimated fair value of common stock at each valuation date. In accordance with the Practice Aid, we considered the following methods:

- *Option Pricing Method (OPM).* Under the OPM, shares are valued by creating a series of call options with exercise prices based on the liquidation preferences and conversion terms of each equity class.

The estimated fair values of the convertible preferred stock and common stock are inferred by analyzing these options. This method is appropriate to use when the range of possible future outcomes is difficult to predict and thus creates highly speculative forecasts.

- *Probability-Weighted Expected Return Method (PWERM)*. The PWERM is a scenario-based analysis that estimates value per share based on the probability-weighted present value of expected future investment returns, considering each of the possible outcomes available to us, as well as the economic and control rights of each share class. This method is generally most appropriate to use when the time to a liquidity event is short, making the range of possible future outcomes relatively easy to predict.

Based on our early stage of development and other relevant factors, we determined that an OPM was the most appropriate method for allocating our enterprise value to determine the estimated fair value of our common stock for valuations during 2019 and most of 2020.

Starting in December 2020 and through March 31, 2021, we used a hybrid method to determine the estimated fair value of our common stock, which included both the OPM and PWERM models.

Application of these approaches involves the use of estimates, judgment, and assumptions that are highly complex and subjective, such as those regarding our expected future revenue, expenses, and cash flows, discount rates, market multiples, the selection of comparable companies, and the probability of future events. Changes in any or all of these estimates and assumptions, or the relationships between those assumptions, impact our valuations as of each valuation date and may have a material impact on the valuation of common stock. The assumptions underlying these valuations represent our management's best estimate, which involve inherent uncertainties and the application of management judgment. As a result, if factors or expected outcomes change and we use significantly different assumptions or estimates, our stock-based compensation could be materially different.

Following the closing of this offering, our board of directors will determine the fair market value of our common stock based on its closing price as reported on the date of grant on the primary stock exchange on which our common stock is traded.

2021 Notes

We elected to account for the 2021 Notes at fair value, as of the issuance date. Management believes that the fair value option better reflects the underlying economics of the 2021 Notes, which contain multiple embedded derivatives. Under the fair value election, changes in fair value are reported as "Change in fair value of convertible promissory notes" in the statements of operations in each reporting period subsequent to the issuance. We measured the fair value of the 2021 Notes using the probability weighted "as converted" plus black scholes model based on the inputs such as probability of IPO scenario vs. Non-IPO scenario, the estimated fair value of common stock price, discount yield, risk free rate, equity volatility, years expected term, number of converted shares and price negotiation adjustment for the calibration. We believe the fair value of the 2021 Notes is derived using assumptions that are consistent with the assumptions used to value our common stock and the warrant liability. In the future, depending on the valuation approaches used and the expected timing and weighting of each, the inputs described above, or other inputs, may have a greater or lesser impact on our estimates of fair value. For the three months ended March 31, 2021, we recognized $11.4 million of other expense in the statements of operations and comprehensive loss related to increases in the fair value of the 2021 Notes.

Recent Accounting Pronouncements

A description of recent accounting pronouncements that may potentially impact our financial position, results of operations or cash flows is disclosed in Note 2 to our financial statements included elsewhere in this prospectus.

Quantitative and Qualitative Disclosures About Market Risk

We are exposed to market risks in the ordinary course of our business. These risks primarily include interest rate risk, foreign currency exchange rate risk and inflation risk as follows:

Interest Rate Risk

We had cash, cash equivalents and short-term investments of $26.9 and $150.1 million as of December 31, 2020 and March 31, 2021, respectively, which came from private placements of our preferred stock and debt financing arrangements. The goals of our investment policy are liquidity and capital preservation and we do not enter into investments for trading or speculative purposes. We believe that we do not have any material exposure to changes in the fair value of these assets as a result of changes in interest rates due to the short-term nature of our cash, cash equivalents and short-term investments. Additionally, the interest rate for borrowings under the Loan Agreement is variable. We believe a hypothetical 10% increase or decrease in interest rates during any of the periods presented would not have had a material impact on our financial statements included elsewhere in this prospectus.

Foreign Currency Exchange Risk

All of our employees and our operations are currently located in the United States and our expenses and payment obligations are denominated in and have been satisfied with U.S. dollars. There was no material foreign currency risk for the years ended December 31, 2019 and 2020 and the three months ended March 31, 2021. In the future, our sales may be denominated in foreign currencies and to the extent they are, we will be subject to foreign currency transaction gains or losses. To date, we have had no foreign currency transaction gains and losses, and we have not had a formal hedging program with respect to foreign currency. We believe a hypothetical 10% increase or decrease in exchange rates during any of the periods presented would not have a material effect on our financial statements included elsewhere in this prospectus.

Effects of Inflation

Inflation generally affects us by increasing our cost of labor and research, manufacturing and development costs. We believe that inflation has not had a material effect on our financial statements included elsewhere in this prospectus.

BUSINESS

Our Mission

Our mission is to accelerate genomics for the advancement of science and medicine. The genomic tools and technologies developed over the last two decades since the first sequencing of the human genome have greatly improved our understanding of biology, empowered the development of novel therapies, and advanced clinical diagnostics. And yet the transformative potential of genomics is just starting to be realized. For example, in oncology, we are just at the beginning of an era in which cancer can be detected early, analyzed at the molecular level, treated with targeted therapies, and monitored through blood tests able to detect and profile minimal residual disease. Today's sequencing technologies and products have made a significant impact, but real limitations remain to incorporate these tools into routine clinical practice: long analysis times, labor intensive protocols, sample batching requirements and high cost. We are developing fast, powerful, efficient, flexible sequencing platforms, along with novel applications and sample-to-result workflows to solve these challenges.

We believe the next generation of biological discovery and translational medicine will be powered by even more advanced molecular technologies. These technologies can enable a high resolution view of DNA, RNA and proteins in individual cells, along with their spatial arrangement. This multiomics view will enable greater insight into the function of both cells and tissues. We are building these new technologies by leveraging our core DNA sequencing engine as a universal detection method of biological information. We take advantage of the vast combinatorial range of DNA bases as a nature inspired barcode and combine it with powerful molecular biology techniques and the latest advances in high speed, high resolution imaging. Our goal is to unleash the full power of sequencing as a universal reader of biology, which we believe will ultimately open new frontiers in research and medicine.

Overview

We are a life science technology company that is leveraging novel NGS and multiomics technologies to build products that empower researchers and clinicians. We developed a unique and proprietary NGS technology, which we refer to as our Sequencing Engine. This Sequencing Engine is the foundational platform technology that forms the basis of our products in development and our core product tenets: accuracy, speed, flexibility and scale. We are currently developing two integrated solutions that are purpose built to target specific applications in which these core product tenets matter most. Our first integrated solution is targeted at the NGS market and comprises the G4 Instrument and an associated menu of consumable kits, which we refer to collectively as our G4 Integrated Solution. The G4 Instrument is a benchtop next generation sequencer designed to produce fast and accurate genetic sequencing results. The integrated purpose built kits that run on the G4 Instrument address specific applications in fast growing markets including oncology and immune profiling. We have completed our beta pilot program and anticipate initiating an early access program followed by a commercial launch of the G4 Integrated Solution by the end of 2021, with intentions for units to ship in the first half of 2022. Our second integrated solution in development comprises the PX Instrument and an associated menu of consumable kits, which we refer to collectively our PX Integrated Solution. Leveraging sequencing as a universal readout, the PX Integrated Solution combines single cell analysis, spatial analysis, genomics and proteomics in one integrated instrument providing a versatile multiomics solution. We anticipate commercial launch of the PX Integrated Solution in 2023.

The core of our Sequencing Engine is comprised of unique and proprietary chemistry, including novel chemical compounds, polymers and enzymes. This chemistry is designed to produce high sequencing accuracy and rapid cycle times that we believe can drive improvements in NGS. To take full advantage of the proprietary chemistry, we are developing purpose built instrumentation consisting of high speed, high resolution imaging and innovative fluidic design. We believe that our Sequencing Engine, together with our proprietary innovations in molecular biology techniques, will enable differentiated applications in fast growing markets. These innovations are supported by our intellectual property portfolio.

Each of our two integrated solutions in development consists of an instrument that incorporates our Sequencing Engine and associated consumables that are used exclusively on each instrument. The G4 Integrated Solution is designed to target the NGS market, in particular, applications that require accuracy, speed, flexibility and scale. We are focused on oncology where there is an increasing need for higher sensitivity technology such as rare variant detection in liquid biopsy. Another area of focus is immunology where there is a need to better understand and harness the immune system in infectious disease, autoimmune disorders and cancer immunotherapy. We aim to execute a three step commercialization plan for our G4 Integrated Solution consisting of: (1) collaborating with select partners to conduct beta pilot tests, which we have completed, (2) expanding collaborations with additional potential customers in an early access program and (3) offering our G4 Integrated Solution broadly to the market, with commercial launch by the end of 2021 and shipping units in the first half of 2022.

The PX Integrated Solution is our second product in development and is a multiomics platform designed to target the markets for single cell, spatial analysis and proteomics. The PX Integrated Solution will leverage our Sequencing Engine as a readout mechanism to provide a high-resolution view of biology at the single cell and tissue level. We believe the PX Integrated Solution, when launched, will be a high-throughput, versatile platform capable of measuring levels of RNA transcription, protein expression and sequence specific information directly in cells and tissues. We believe the PX Integrated Solution will have broad application across many areas of biology. We are initially focused on applications in oncology and immunology, with future expansion into other applications such as neurology. We are currently in an advanced prototype development stage for the PX Integrated Solution and expect to begin an early access program in 2022 and full commercial launch in 2023. We believe that our G4 and PX Integrated Solutions can unleash the full power of sequencing as a universal reader of biology, and open new frontiers in research and medicine.

Background

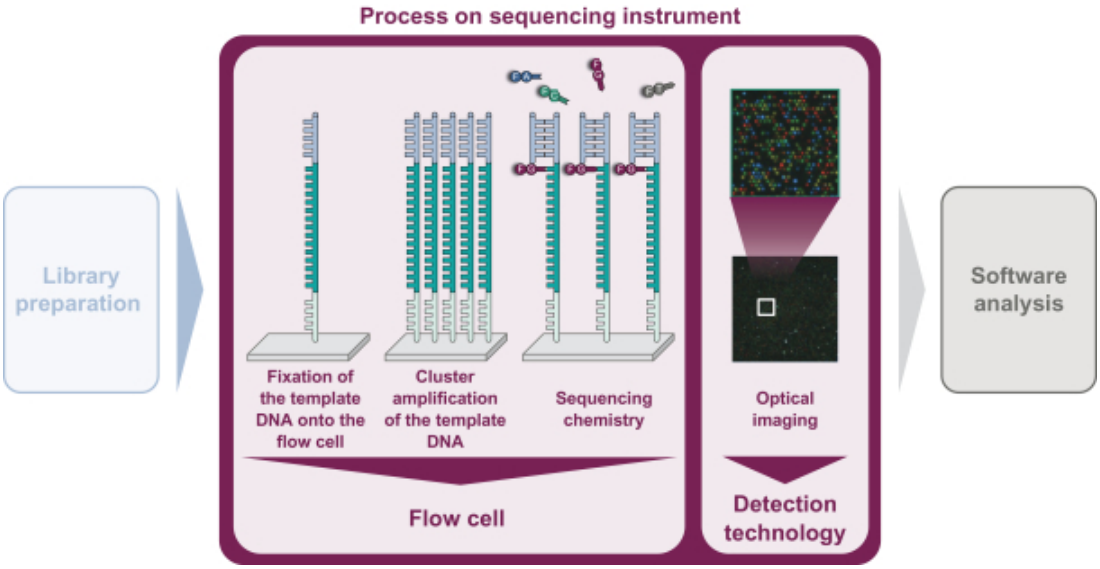
Nature has evolved an elegant solution where four nucleotides – adenine (A), cytosine (C), guanine (G), thymine (T) – form the primary code upon which all of life and biologic diversity is built. NGS directly reads the four nucleotides (or DNA bases) and thus can read out a limitless number of possible sequences. This is in contrast to alternative genetic detection technologies that require *a priori* knowledge of the DNA sequence of interest, such as DNA microarrays, targeted probe hybridization and polymerase chain reaction (PCR). These technologies require prior knowledge of the sequence of a DNA target, and in many cases are also limited by detection with a small number of fluorescent dyes. The capability of NGS to read the vast combinatorial repertoire of DNA, even without prior knowledge of the DNA target, makes it a uniquely powerful platform technology and universal detection method to read and interrogate biology. Beyond reading genomic DNA and RNA, the combination of NGS and designed DNA probes attached to antibodies introduce a wide range of multiomics applications, including imaging and measuring gene transcription and protein expression in individual cells and tissue pathology samples.

NGS has been a transformational technology for the life sciences industry and has been critical to ushering in the genomics age and accelerating our understanding of biology. Since its introduction in the mid-2000s, NGS technology has advanced greatly, which has increased the power of the technology and enabled its broad adoption by the life sciences community. The first NGS platform in the mid-2000s enabled a 50,000-fold drop in cost of sequencing the human genome as compared to the initial first genome sequenced as part of the Human Genome Project at a cost of $300 million. By 2015, the cost of sequencing a human genome reached $1,000 (at ~30X coverage, to achieve sufficient accuracy). Over the last six years, there have been additional improvements in technology and further reduction in cost. Additionally, the range of applications for sequencing has been greatly expanded by the genomics community. This has catalyzed the creation of large markets across both research and clinical applications and a flourishing genomics ecosystem that leverages NGS technology.

We believe that NGS can serve as an extremely versatile molecular tool in biology, extending well beyond its current applications. Today, NGS is used to sequence DNA and RNA to identify inherited and acquired mutations, measure gene expression by counting RNA transcripts, detect and identify pathogens, and when combined with certain sample preparation techniques, determine the epigenetic state of the DNA.

While modern NGS instruments are complex, the most widely adopted NGS technologies today consist of the following steps or elements:

- *Library preparation:* Before loading the sample into a sequencer, the user must prepare a sequencing library. This involves preparing a sample of the target DNA or RNA for sequencing by using a few common molecular biology steps to ensure that the genetic input material can be converted into a form that is compatible with the sequencing instrument.
- *Flow cell:* Following sample preparation, the resulting sample library is loaded onto a sequencer. From there, the libraries are automatically loaded onto a flow cell. The flow cell incorporates microfluidic channels and nanoscale patterned wells. The template DNA is immobilized and fixed onto the flow cell. Afterwards, the next two steps of the sequencing process occur on the flow cell, which include *cluster amplification* and the *sequencing chemistry.* The flow cell enables fluid reagents to be exchanged and flushed away to catalyze the cluster formation and the sequencing chemistry. Flow cells are designed to provide specific levels of throughput or number of reads. The flow cell is disposable and discarded following each run.
- *Cluster amplification:* In order for the small amounts of starting genetic material to be detected by a NGS instrument, or sequencer, it must be amplified (copied). This process is called cluster amplification and it involves replication of each DNA strand on the flow cell. This creates a population of clonal DNA molecules (clusters) that are copies of the original template strands and are more easily read by the sequencer.
- *Sequencing chemistry*: At their core, modern next generation sequencers rely on chemical processes to enable the target genetic material to be read by a sequencer. The most widely used NGS chemistry methodology today is sequencing-by-synthesis (SBS). This method involves a chemical process by which a DNA polymerase copies the target strand of DNA by adding a single nucleotide base one-by-one. These nucleotides can be modified with a marker that creates a signal when the nucleotide is incorporated along the strand. This marker can be a fluorophore, for example, which emits a color, or it can be a change in ionic concentration that can identify the incorporation of a nucleotide into the elongating strand. This signal can then be read by a detector within the sequencer. Throughout this process, chemically modified nucleotides are used to ensure that only one base at a time can be incorporated by the DNA polymerase during each sequencing cycle. Then once the identity of the new incorporated base has been read, the process of nucleotide addition is restarted and the next subsequent base is incorporated and read and so forth until the desired read length has been completed.
- *Paired end reads:* This capability allows the instrument to sequence from both ends of the DNA fragment and can double the number of reads of a sequencing run for the same amount of genetic input material. This technology can (1) enable longer reads, which allows for more efficient mapping and detection of gene rearrangements for better genome assembly; (2) overlap reads for higher quality data; (3) support single cell genomics and other barcode enabled applications; and (4) enable the ability to detect indels, and inversions. Many NGS instruments today cannot address certain markets because of their lack of paired end capability.
- *Detection technology*: The detection technology is responsible for reading the output of the sequencing chemistry process to detect the four individual bases of the DNA. The most commonly used detection technology today is optical imaging of fluorescence. This technology detects the colors emitted by different fluorophores associated with each of the bases as they are incorporated into the extended DNA strand.
- *Software analysis*: The resulting data comes out of the sequencer in a standardized format and is then collected, organized and analyzed through software. There are a wide variety of commercially available software analytics platforms available from third parties as well as tailored solutions developed by NGS customers themselves.



Despite the advances that NGS has enabled in the genomics space, we believe the power of sequencing has not been fully realized and that innovation across the core elements of a sequencer can drive further improvement in the technology. For example, optimizing and speeding up the chemistry process or using faster imaging technology could lead to more accurate and faster results. Combined with innovations in molecular biology that span library prep through sequencing, we believe there is a need to offer purpose built genomics solutions targeting unmet needs in fast growing markets.

Furthermore, we believe that sequencing can be extended beyond genomics and leveraged as a multiomics reader of biology. Our envisioned applications include genomics, epigenetics, transcriptomics, and proteomics within millions of individual cells as well as in the spatial context of tissue, and associating cellular phenotype with genotype.

Our Foundational Technology

We have developed a novel and proprietary Sequencing Engine that is a foundational technology for our products in development. The core of our Sequencing Engine is a unique and proprietary chemistry that enables high sequencing accuracy and rapid cycle times that we believe can drive improvements in NGS technology and enable performance of highly accurate and massively parallel sequencing at speed. Our aim is to develop products that employ this engine and that both improve NGS technology, and deploy it into new applications beyond where it is being used today. We are leveraging our Sequencing Engine for the development of our first two integrated solutions, the G4 Integrated Solution and the PX Integrated Solution. We aim to deploy our foundational technology as a universal reader of biology, which can ultimately open new frontiers in research and medicine.

We built our Sequencing Engine from the ground up, and it incorporates the following innovations:

- *Cluster amplification*: We have developed an optimized cluster amplification method that is designed to ensure generation of high quality and high density clusters with minimal sequence bias and high signal-to-background ratios. This enables high accuracy sequencing regardless of the type of genetic input material.
- *Paired end reads*: We are developing a novel method to achieve an accurate paired end equivalent. We believe our method will be fast and efficient with reagent usage, while still providing the critical value of efficient mapping and detection of gene rearrangements, higher quality data or single cell genomics.

- *Sequencing chemistry*: We have recognized that chemistry has historically been a particularly challenging area to improve in the sequencing process. Therefore, we developed a new and proprietary sequencing chemistry. This chemistry includes novel enzymes and nucleotides. We have also designed and synthesized our own dyes to optimize performance. This new and proprietary chemistry enables fast sequencing cycle times.
- *Detection technology*: We have developed a proprietary high speed and high resolution imaging system. The imaging system has been designed to optimize throughput, cycle time, accuracy and efficiency.

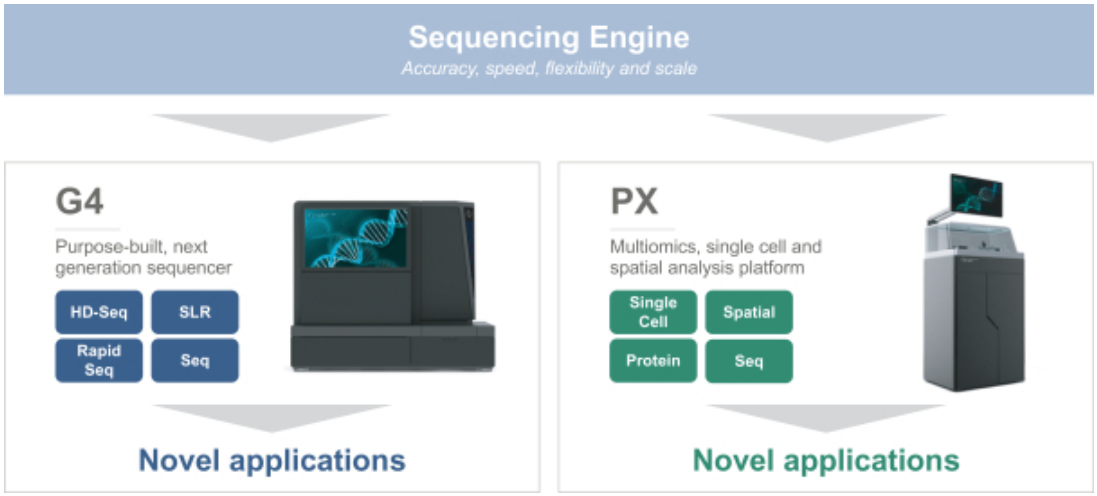
While the above comprises the technology used in our Sequencing Engine, we also incorporate additional technologies into our G4 Instrument and PX Instrument. For example, our G4 Instrument includes a unique flow cell design to improve workflow flexibility for the user and our PX Instrument includes a well-plate format intended to push the boundaries of throughput for both single cell and spatial analysis applications.

We believe our Sequencing Engine imparts the following unique capabilities to our products, which are the core tenets for each of our products in development:

- *High accuracy*: Our Sequencing Engine is designed to provide high accuracy for each base detected during sequencing for reliable data generation. Currently, we can demonstrate accuracy of 99.7% on 150 base reads. This corresponds to Q30 quality scores on greater than 70% of base calls. As we continue to optimize our technology, we are targeting Q30 for greater than 80% of base calls for 150 base reads.
- *Speed*: We are targeting a 2.5 minute cycle time for each base sequenced, supporting fast sequencing runs. We expect that this will give us a sequencing time of approximately 16 hours to complete a 2x150 base run. For other run modes such as RNA-Seq, we are targeting run times of approximately 5 hours. In our two beta pilot tests, our third-party external partners demonstrated a 4.0 minute cycle time. In our experiments, we have previously demonstrated high quality sequencing with a 2.7 minute cycle time on our previous prototype. We are optimizing to achieve a 2.5 minute cycle time. We anticipate that future versions of our chemistry will allow us to continue to reduce the cycle time even further. This is a key element that enables our technology to deliver results quickly. Speed also gives our instruments the capacity for higher throughput by enabling multiple runs in a day.
- *Flexibility*: Our Sequencing Engine is designed to be flexible and deployed into different integrated solutions across a variety of markets. In the context of our G4 Integrated Solution, flexibility includes the ability to run 1 to 4 independent flow cells concurrently. In addition, each flow cell has 4 individually addressable lanes that allow for samples to be run independently.
- *Scale*: Our Sequencing Engine is built to provide the throughput needed for widely run research and clinical applications. The G4 Integrated Solution is designed to address a wide range of sequencing applications requiring scalable throughput including targeted cancer gene panels, deep sequencing for rare variant detection in liquid biopsy, high depth exome and high resolution whole genome. The PX Instrument is designed to provide scale at three levels: (1) number of samples, (2) number of cells per sample and (3) depth of multiomics information.

Our Integrated Solutions

Our product development pipeline comprises two initial integrated solutions, each designed to leverage our Sequencing Engine and purpose built to address different applications. Our G4 Integrated Solution is designed to target the NGS market. Our PX Integrated Solution is designed to target the single cell, spatial analysis and proteomics markets. Each integrated solution consists of an instrument that incorporates our Sequencing Engine and associated consumables that are used exclusively on each instrument.



G4 Integrated Solution

We surveyed numerous labs and KOLs while developing our G4 Integrated Solution to listen to their needs and to identify the limitations of current solutions. In parallel, we engineered an instrument around our Sequencing Engine to address those real-world needs. Our G4 Integrated Solution is designed to seamlessly fit into existing workflows, including library preparation and bioinformatics. It is also designed to provide flexibility in terms of sample batching and number of flow cells in a sequencing run. We believe this design will enable customers to better manage a wide range of daily sample volume demands without sacrificing turnaround times or incurring extra expenses from inefficient reagent kit use. We are targeting applications for which we believe accuracy, speed, flexibility and scale matter, and where our novel molecular biology methods offer unique advantages. We have nearly completed development of our G4 Integrated Solution and are pursuing a three-step commercialization plan consisting of: (1) collaborating with select partners to conduct beta pilot tests, which we have completed, (2) expanding collaborations with additional potential customers in an early access program and (3) offering our G4 Integrated Solution broadly to the market with commercial launch. We expect commercial launch by the end of 2021 with intentions for shipping units in the first half of 2022.

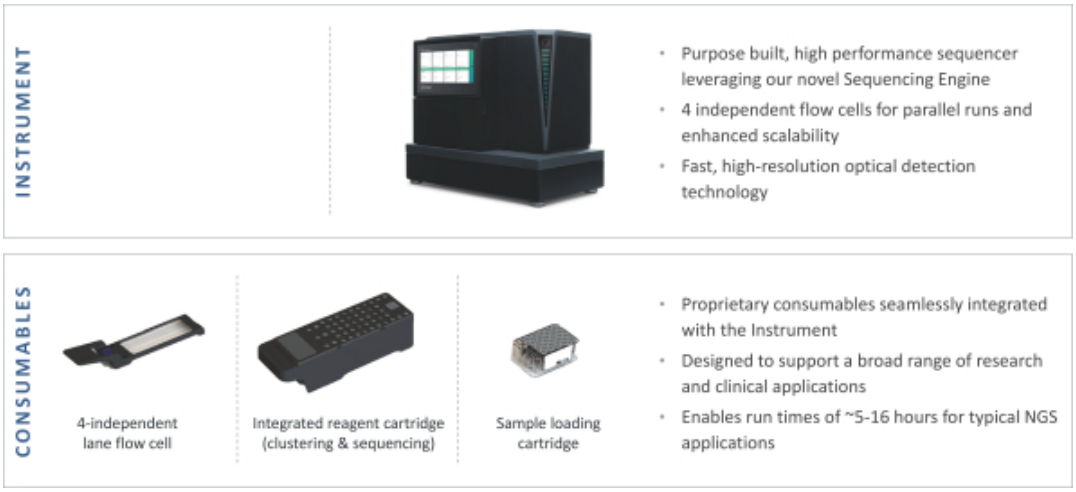
The G4 Instrument

Our G4 Instrument incorporates our Sequencing Engine and its underlying chemistry and optical detection technology. We engineered the G4 Instrument to allow using multiple flow cells to enable customers to scale their daily output needs by running between one to four flow cells in parallel on one instrument. Our flow cells are designed to allow further flexibility with four independent lanes on each flow cell. This allows users to keep samples physically separated and avoid potential carry-over or misinterpretation among samples. In research settings, such as core labs, different projects can be run in different lanes on the flow cell, avoiding potential incompatibilities in barcodes or library preparation. By reducing the need to batch samples or combine projects, the design should minimize errors and inefficiencies in process and costs. We anticipate that these improvements coupled with fast sequencing cycle times can lead to single-day turnaround times and high daily max data output, which we believe will have a significant impact on delivery of timely results in clinically relevant applications.

Consumables supporting our G4 Instrument

We plan to commercialize our G4 Instrument with proprietary associated consumables that will support our broad range of research and clinical applications. Our G4 Integrated Solution is designed to support library prep, target enrichment, cluster amplification and sequencing. For example, one of our sequencing kits will be a Rapid

Seq kit where the sequencing time will be approximately 5 hours for a 50-75 base run for short read applications such as RNA-Seq. We also intend to offer commercially available library preparation kits through third-party partners to allow customers to perform important applications within NGS including, among others: (1) whole genome sequencing, (2) whole exome sequencing, (3) targeted panels, (4) epigenetics and (5) methylation studies. Our G4 Instrument is designed to return standardized data formats and to be compatible with a wide variety of commercially available and customer developed bioinformatics platforms.



Capabilities of the G4 Integrated Solution

We believe there are several key criteria that have determined the commercial success of sequencers, including accuracy, speed, flexibility and scale. In addition, read length and the ability to sequence DNA from both ends of the fragment, commonly referred to as paired end sequencing, are important factors. We designed the G4 Integrated Solution to have the following characteristics to address these key criteria:

- *High Accuracy*: Sequencing accuracy is critical to correctly determining the order of bases present in DNA. Errors can be introduced in the sequencing process itself, or in the upstream steps involved in sample processing and library preparation. In some cases, inaccuracies can be overcome by multiple coverage of the DNA of interest and determining the consensus sequence. For example, human genomes are typically sequenced at a coverage depth of at least 30-fold, to obtain a sufficiently accurate consensus sequence for the approximately 3 billion bases in the genome. Accuracy can be particularly important in applications that analyze acquired mutations (somatic mutations) where the DNA sequence deviates from the germline genome. If the frequency of the mutation is in the same range or lower than the frequency of the error rate, it will be difficult or even impossible to identify the target amongst the errors, or noise. Lower accuracy can cause challenges for identifying rare DNA mutations. In cancer and immunology, the presence of a rare mutation or rare clone may be clinically relevant and impact the diagnosis and treatment decision. Accuracy is also particularly important for liquid biopsy applications, for which the presence of a target is typically very limited amongst the other genetic material present in blood. Widely adopted approaches to deal with accuracy limitations involve labeling target DNA with unique molecular identifiers (UMI's) and making multiple copies of these labeled molecules. This approach requires sequencing greater number of reads and/or sequencing a smaller number of unique genomic regions. This is a brute force approach and can be costly and inefficient, so there is a strong motivation for using sequencing platforms that provide inherent high accuracy. Base calling accuracy, measured by the Q score, is the most common metric used to assess the accuracy of a sequencing platform. It indicates the probability that a given base is called correctly by the sequencer. We believe that a sequencer must have at least Q30 accuracy (i.e., 1 in 1000

probability of calling a base incorrectly) to be commercially successful. In internal testing, we have demonstrated Q30 accuracy on greater than 70% of base calls. This gives a demonstrated accuracy of 99.7% on 150 base reads. In our two beta pilot tests, our third-party external partners demonstrated Q30 or higher accuracy of greater than 70% of base calls. One third-party external partner conducted standard RNA sequencing, and the other conducted testing with single-cell RNA sequencing using paired-end reads consistent with the methods it currently uses. In both cases, the gene expression levels measured by these third-parties in their tests utilizing our G4 Integrated Solution correlated strongly to the independent reference data these third-parties generated with their current commercially available sequencing methods. For our commercial G4 Instrument, we are targeting Q30 for greater than 80% of base calls for 150 base reads, which we believe we can achieve through continually optimizing multiple parameters in clustering, sequencing, imaging and signal processing. Additionally, we have demonstrated uniform G/C coverage over the range of 20-70% G/C content. We believe this high accuracy is competitive with what customers are accustomed to with current sequencing solutions.

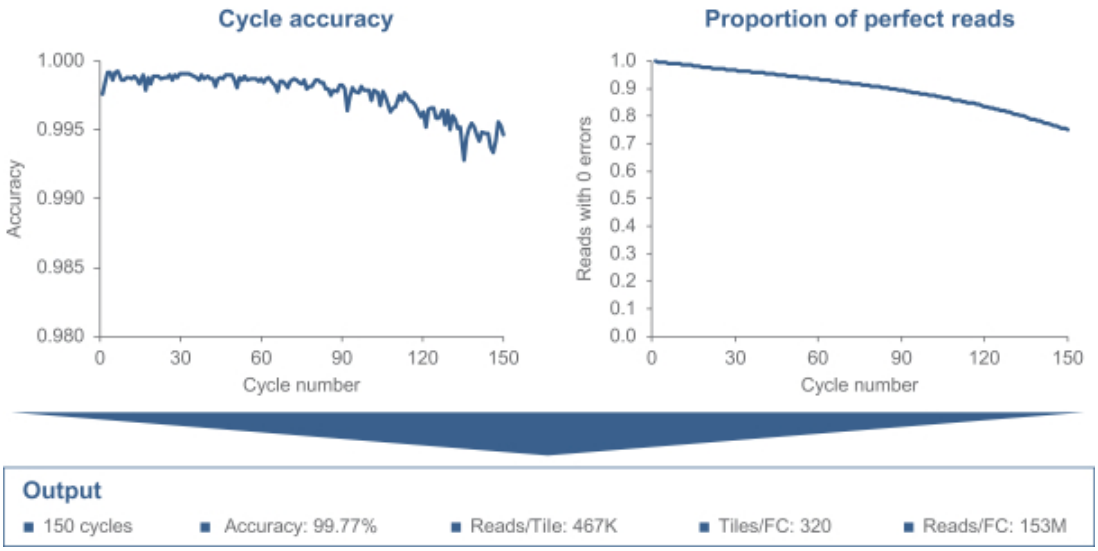
- *Speed of Sequencing*: Dramatically decreasing the chemistry time needed for each base to be detected means that the overall sequencing time can be significantly faster, resulting in more samples being run in a day on a given platform. This translates to researchers being able to perform more science in a given period. We also believe speed is critical in clinical settings where turnaround time is important to drive patient treatment programs. The speed of sequencing can be measured in multiple ways. Cycle time is the measurement of time needed to add one nucleotide, image and prepare the elongating strand for the next nucleotide and the start of the next sequencing cycle. We are targeting a 2.5 minute cycle time for each base sequenced, which we believe we can achieve through ongoing upgrades to the G4 Instrument's optical system, which will allow for faster imaging. We expect that this will give us a sequencing time of approximately 16 hours to complete a 2x150 base run. For other run modes such as RNA-Seq, we are targeting run times of approximately 5 hours. Currently, we are running a 4.0 minute cycle time, with previous demonstration of high quality sequencing with a 2.7 minute cycle time on our previous prototype. In our two beta pilot tests, our third-party external partners demonstrated a 4.0 minute cycle time. We anticipate that future versions of our chemistry will allow us to reduce the cycle time even further. Speed also gives our G4 Instrument the capacity for higher throughput as our fast runtime will facilitate the possibility of processing multiple runs in a day.

- *High, independent, flexible throughput*: Every sequencing run requires reagents and disposable parts, including flow cells. To save costs, widely adopted approaches involve maximizing the number of samples, or sample libraries run in the experiment, which is a technique called batching or pooling. The requirement to batch, or pool experiments together in order to take advantage of the lowest sequencing cost introduces performance and timing issues and inconveniences in the sequencing process. First, batching can result in lower sequencing performance due to incorporating different types of samples or libraries that do not cluster or sequence well together. Examples of challenges introduced with batching include barcode hopping, uneven sequencing coverage requirements for each sample and losing data from multiple projects with a sequencing failure. Batching also results in longer turnaround times as labs are forced to wait for the arrival of an appropriate number of experiments to run together in a sequencing run. Our G4 Integrated Solution has flow cells with independent lanes, enabling libraries to be kept separate in each lane while still retaining high throughput capacity. We believe this allows for easier and more convenient processing of samples, thus enabling the G4 Integrated Solution to cover a wide range of throughput requirements. Alternative sequencing technologies that do not have this flexibility in throughput may require customers with different volume requirements across different experiments to have multiple instruments in their lab or encounter a slow turnaround time with a backlog of projects. In internal testing, we have demonstrated the capability to produce 150 million reads per flow cell. In our two beta pilot tests, our third-party external partners demonstrated average throughput of greater than 150 million reads per flow cell for single-end reads, and an average throughput of greater than 100 million reads for paired-end reads. If all four flow cells are utilized in a sequencing run and with a full

read length of 150 bases, our G4 Integrated Solution can generate 600 million reads per sequencing run. We are targeting 330 million reads per flow cell at commercial launch for a total of 1,320 million reads if all four flow cells were utilized in a sequencing run, which we believe we can achieve through ongoing upgrades to the G4 Instrument's optical system, which will allow for higher resolution imaging and cluster density.

- *Paired end equivalent sequencing*: In some applications, users value the ability to perform paired end reads and tune the system to different read lengths. Paired end sequencing is a technique involving reading from both ends of DNA fragments. This technology can (1) enable longer reads, which allows for more efficient mapping and detection of gene rearrangements for better genome assembly; (2) overlap reads for higher quality data; (3) support single cell genomics and other barcode enabled applications; and (4) enable the ability to detect indels and inversions. We are developing and plan to offer a novel way to achieve paired end equivalent sequencing such as 2x150. We believe that this is just the starting point of our capabilities for paired end equivalent sequencing and that we will be able to improve this metric further as our technology develops.
- *Read lengths*: We are developing kits with read lengths of 50 bases to 150 bases. We also plan to extend read length beyond 150 bases in our G4 Integrated Solution with SLR kits.
- *Workflow*: We have designed our G4 Integrated Solution for customers to efficiently switch to our products and platform as the upstream workflow and downstream analysis will be compatible with current NGS processes.

Our reported sequencing performance was measured in multiple internal experiments, run on our G4 Instrument. Sequencing libraries were prepared from human DNA, as well as bacterial DNA, following standard protocols and using our custom DNA adapters. The libraries were sequenced on the G4 Instrument, using our custom sequencing kits. The results were analyzed using standard bioinformatics analysis, where the sequenced reads are aligned and compared to the reference genome to determine accuracy. Q-scores represent the prospective confidence in the base calls, and are derived based on empirical accuracy data developed in training runs.



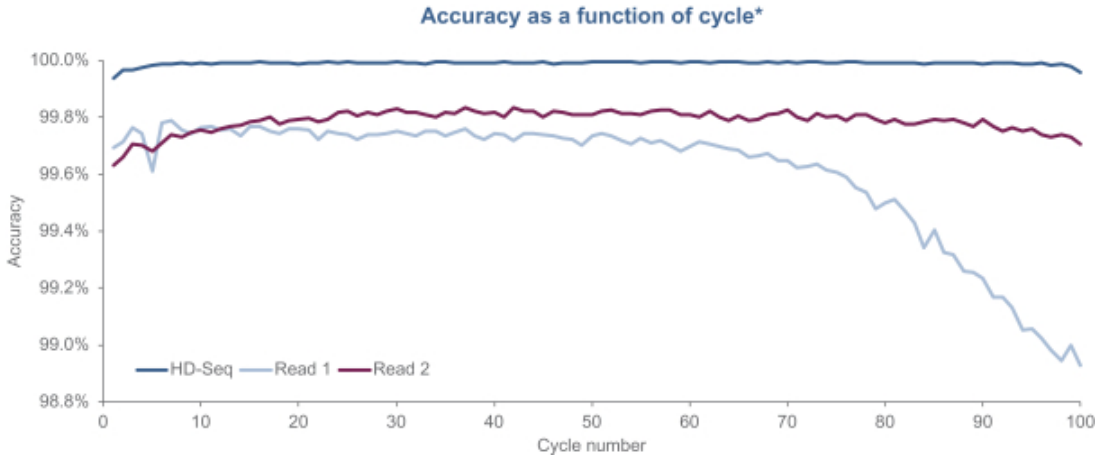
This figure displays the current sequencing performance of our core Sequencing Engine with a demonstrated accuracy of 99.7% on 150 base reads (Q30 on greater than 70% of base calls) with a throughput of 153M reads per flow cell. We are targeting sequencing performance of Q30 on greater than 80% of base calls for 150 base reads and 330M reads per flow cell.

Applications for the G4 Integrated Solution

We believe that our G4 Integrated Solution has broad potential application across research and clinical markets. While we believe that the G4 Integrated Solution will be able to run a wide variety of available sequencing applications that are currently available on the market today, we specifically designed our G4 Integrated Solution to excel with applications that benefit from accuracy, speed, flexibility and scale. Our initial targeted applications for our G4 Integrated Solution include rare variant detection with HD-Seq and SLR. These applications target large markets across oncology, including liquid biopsy detection of cfDNA and immunology.

Rare variant detection with HD-Seq

We designed our G4 Integrated Solution to support HD-Seq, a unique library prep kit and sequencing method for double-stranded DNA, which we are designing to provide higher accuracy than standard single-strand NGS sequencing methods (including ours), and is expected to enable rare variant detection with higher efficiency and lower costs. HD-Seq is intended to achieve accuracy levels of Q50, which can help differentiate a real mutation from random errors. In NGS, errors are often generated in the sample DNA during the amplification step that occurs during both library prep and the sequencing process. These technical errors become a concern when the expected frequency of the mutation is at the same or lower frequency as the error rate. This can make it very difficult to correctly identify whether the called mutation is a technical error or a real mutation. Today, this challenge is typically addressed by a brute force approach, using unique molecular identifiers (UMIs) or duplex sequencing, a method that employs tagging each double-stranded DNA with a UMI (for a total of two UMIs for each DNA fragment) to detect mutations with higher accuracy and lower error rates. These single- and duplex UMI-based sequencing methods require deep sequencing to read multiple copies of DNA associated with each UMI, and form a more accurate consensus sequence. Furthermore, duplex sequencing (with two UMIs) requires additional sequencing to find the matched pair in order to achieve the highest accuracy with consensus of both the matched strands in addition to the UMI groupings. Today, the typical way to get higher level of accuracy with NGS data is through these costly and highly inefficient methods. Our HD-Seq library prep workflow is designed to carry the cfDNA or DNA from tissue through the entire process of DNA capture and amplification, and is integrated into how we sequence on the surface of the flow cell while maintaining the integrity of the duplex DNA. In internal testing, we have demonstrated 99.99% accuracy for 100 base reads with our current methodology, and we anticipate that we will be able to reach 99.999% accuracy for greater than 100 base reads. Our internal testing involved using commercial reference materials for cfDNA. The average fragment size of the starting material was 177bp. We prepared sequencing libraries using our HD-Seq methodology, including adapter ligation, amplification by Polymerase Chain Reaction (PCR) and targeted capture using a commercially available panel. We then clustered and sequenced the double-stranded DNA library, with bi-directional readout of 100 bases in one direction (Read 1), and 150 bases in the other direction (Read 2). To assess the improvement in accuracy, we examined the overlapped region of 100 bases. For HD-Seq, the base call was only made if there was agreement in the corresponding base calls between the complementary strands (i.e., Reads 1 and 2). Relative to reference, the consensus accuracy of the HD-Seq base calls (Read 1 + Read 2) was 99.99%. Compared to the uncorrected accuracy of the single-strand Reads 1 and 2 (99.6% average), the HD-Seq method results in approximately a 40X reduction in error rate. A low error rate is required for detection of rare single-nucleotide polymorphisms, and has particular relevance to tissue biopsy and liquid biopsy in cancer.



*Source: cfDNA library, 100 + 150 paired-end reads. Read 1 and Read 2 refer to the two sequencing reads that together comprise the HD-Seq readout of the two complementary strands of the DNA molecule.

We believe this capability for significantly enhanced accuracy will be particularly important in applications where there is a rare variant among a background of normal, such as oncology.

Oncology: Accuracy is especially important in oncology for the detection of somatic mutations. It is also critical in liquid biopsy where the frequency of mutations in a sample is extremely low. Today, researchers handle the NGS accuracy limitations by deep sequencing a small number of targets which is both very costly and highly inefficient. As the field continues to move towards liquid biopsy especially for early cancer screening, for which the frequency of mutations is very low, we believe there will be an even greater need for higher sensitivity technologies. With the accuracy that our HD-Seq could provide, we anticipate that customers will be able to achieve higher accuracy in a cost-effective manner relative to other commercially available technologies.

Synthetic long reads (SLR)

We also plan to offer proprietary specialized library prep kits for targeted SLR, which we expect to facilitate reads of up to 2,000 to 3,000 base pairs using our G4 Integrated Solution. We have currently demonstrated approximately 450 base reads with B cells for VDJ sequencing. We expect this to be a key capability for applications requiring long sequencing reads, such as immunology.

Immunology: A better understanding of how the immune system functions can improve treatment of infectious diseases, autoimmune diseases, allergic reactions as well as cancer. We believe that our G4 Integrated Solution will be able to deliver the throughput, accuracy and read lengths required to support comprehensive analysis of the immune system, especially the adaptive immune response which consists of B and T cells. The B and T cells of the adaptive immune system enable us to fight off infections. While most cells in the human body carry the same genome, B and T cells have a wide genetic diversity that results in a repertoire of millions of unique antibodies and T cell receptors. The genes that carry this diversity correspond to the heavy and light chains of antibodies, and the alpha and beta chains of T cell receptors. Longer reads can be helpful in decoding the full sequences. For example, the heavy chain is encoded by approximately 450 bases in the VDJ region, which requires longer reads than offered by typical NGS methods. For therapeutic development of antibodies, the heavy and light chains are often fused together in phage display libraries. These require even longer reads of greater than 800 bases to fully characterize. We believe that a high throughput, high accuracy, cost effective solution for reading these longer gene sequences can advance the understanding of the immune system and ultimately improve the diagnosis and monitoring of blood cancers, provide new

insights into immunotherapy for cancer, facilitate therapeutic antibody and T cell discovery, and accelerate the development of vaccines for infectious disease.

Expansion of the G4 Integrated Solution

We anticipate that there will be customers who have high volumes who will still need the flexibility to batch less while still maintaining high throughput. Examples of these types of customers would include:

- Laboratories that do not want to batch together hundreds or thousands of samples onto one sequencing flow cell because of the risk that one failure might ruin data from all samples in the run; or
- Laboratories with high sample volumes of diverse sample types and/or run modes which would make it difficult to combine those samples together on one sequencing flow cell.

For these specific types of customers, which include commercial laboratories and academic laboratories, we plan to offer an expansion of our G4 Instrument in a configuration that we have named the G4x4. This special four instrument configuration will be designed to address a different part of the NGS market for those needing high sequencing output while maintaining speed and flexibility of the G4 Integrated Solution.

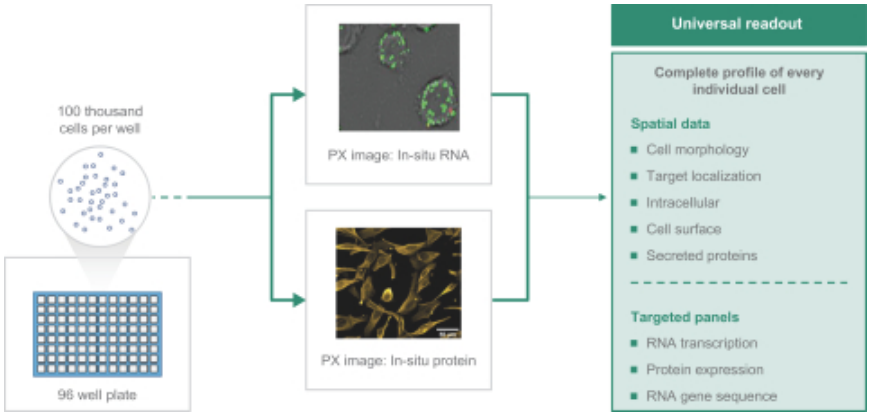
PX Integrated Solution

Our PX Integrated Solution is focused on the single cell and spatial analysis markets and consists of our PX Instrument and associated consumables. The PX Instrument leverages our Sequencing Engine to enable multiomics analysis of single cells and tissues as both a universal detection method and in situ sequencing. Importantly, the PX Instrument is designed to provide high throughput analysis of nucleic acids and proteins, while also generating high resolution images of cellular morphology to enable computer-vision based analysis of cellular phenotype. This design reflects an appreciation of the tremendous potential for machine learning based image analysis to serve as a rich source of biomarker information for cancer and autoimmune disease translational research. We believe our PX Integrated Solution will eliminate the need for customers to employ multiple systems over several day workflows, which is required by existing commercial methods. Ultimately, we believe this will enable researchers to perform large scale experiments that may fundamentally advance our understanding of biology, and, in turn, advance human health. We are currently in an advanced prototype development stage and expect to begin an early access program in 2022, with full commercial launch in 2023 through a targeted and phased commercial strategy similar to the strategy for launching our G4 Integrated Solution. We anticipate being able to cross-market our PX Integrated Solution to customers of our G4 Integrated Solution.

The PX Instrument

Our PX Instrument is an integrated multiomics platform that combines novel methods for single cell and spatial analysis, with high resolution imaging, genomics and proteomics detection capability. The PX Instrument leverages our core Sequencing Engine for both a universal detection method and in situ sequencing and is designed to bring scale and high throughput to single cell and spatial analysis applications.

We expect to target our PX Instrument for applications that require (1) high resolution imaging of cellular morphology including subcellular localization of targets and (2) multiplex interrogation of molecular data types (nucleic acid and/or protein) of millions of cells in a single run. The PX Instrument is designed to image the cells in a specialized well-plate (96-well or 384-well) enabling analysis of 10,000 to 100,000 cells per well, with a total throughput of 1 million to 10 million cells in a 96-well plate. The cells are imaged with our proprietary optical system and molecular biomarkers are detected through our Sequencing Engine by either a universal detection method or in situ sequencing. For tissue samples, our PX Instrument is designed to retain the context of the cells within their cellular environment and to enable spatial analysis by returning both phenotypic data (cellular morphology, localization of different cell types and expression of different proteins within the context of the tissue) and molecular data at subcellular resolution and high throughput. We are designing the PX Instrument to utilize fresh, fresh frozen and FFPE samples.



Consumables supporting our PX Instrument

We aim to provide reagent kits to support analysis of single cells and tissue sections on the PX Instrument. We are designing these kits to enable multiomics analysis, including RNA transcription, protein expression and targeted gene sequencing. Our kits will include specialized well-plates, and reagents for sample preparation and sequencing readout. For protein detection, we plan to offer DNA-conjugated antibodies.

Current challenges in single cell and spatial analysis

In recent years, systems have been developed for targeted gene sequencing in single cells, and for measuring levels of gene transcription in individual cells by sequencing readout. These tools have yielded new information that is not available from bulk sequencing measurements. However, current commercial methods have significant limitations. One limitation is that cells are broke open and tagged with DNA barcodes in droplets, then pooled together into a sequencing run, thus losing information about cell morphology. Another limitation is the number of cells and samples that can be processed in an experiment. Finally, current methods struggle to achieve multiomics readout, with only limited ability to measure proteins along with DNA or RNA, while maintaining cellular morphology.

For spatial analysis of tissue, the capabilities of current genomic technologies are even more limited. Most genomic analysis of tissue is done on a bulk basis, with no spatial resolution. Recently, several spatial analysis platforms have been developed and introduced commercially. However, we believe that these technologies currently have several limitations. First, we believe most of these platforms currently have limited resolution, unable to provide detailed information at the level of individual single cells, including subcellular localization, and information about how the cells are organized in space within the tissue. Second, we believe current commercial platforms are unable to provide high throughput. Experiments are limited to less than 20 samples per run, and in some cases just one sample per run, which limits the ability of users to conduct large scale experiments.

Although the single cell and spatial analysis fields are still in their infancy, we anticipate that the following elements will be critical for determining success in the future.

- *Cell capacity*: Historically, instruments that have been able to analyze the highest number of single cells have shown the most success. We believe this will continue to be an important success factor.
- *Resolution*: We believe that the ability to provide genomic and proteomics data at the single cell level, and even resolve subcellular features, will be informative to researchers.
- *Throughput*: Similar to NGS, we believe that researchers will continue to push the boundaries of research to understand biology and instruments will need to handle more samples to stay relevant.

- *Multiomics capabilities*: We believe that having the ability to measure multiple types of analytes (e.g. RNA transcripts and cellular proteins) from the same cell will be invaluable in piecing together how different genes and proteins interact within a spatial context. We believe that machine learning based image analysis will serve as an increasingly critical component of multiomics based discovery.
- *Tissue sample type*: 80% of translational research studies that involve tissue analysis utilize FFPE preserved tissue. Thus, it will be critical for an instrument to be compatible with this sample type.
- *Cost*: We believe researchers want to continue to push towards larger scale single cell studies requiring millions of cells. Without integration of the cell preparation and the sequencing into one platform, we believe that the cost will become too high using current methods.

Capabilities of the PX Integrated Solution

We are designing the PX Integrated Solution to have the following characteristics, which we believe are important differentiating characteristics of single cell and spatial analysis approaches:

- *Multiomics detection*: We are developing the PX Integrated Solution to identify specific RNA and proteins (through the use of oligo-conjugated antibodies) using our core Sequencing Engine either as a universal detection method or for in situ sequencing along with cellular morphology and tissue organization. We believe this provides significantly more information than is available today with current commercial single cell technologies. The addition of the cellular morphology along with spatial organization of biomolecules within the tissue microenvironment can provide a data rich solution across many research applications to better understand cell development, maturation and pathogenesis. We believe that the combination of these useful datasets from individual cells will provide a more complete cellular picture as it will combine both phenotypic data along with detailed molecular characterization.
- *High throughput and large scale*: We are designing the PX Integrated Solution to be high throughput in order to enable researchers to perform large scale studies that are currently inaccessible but are needed for a more complete characterization and understanding of cells, and therefore biology. Current commercially available single cell technologies detect 10,000 to 100,000 cells in an experiment. Our PX Instrument will use a well-plate approach (either with a 96 or 384-well consumable plate) designed to process 10,000 to 100,000 cells per well at a throughput of 1 million to 10 million cells in a 96 well plate. We believe that this will meet the growing need in this market for millions of cells and the large scale that is currently unattainable today. Current commercially available spatial analysis instruments can run an experiment involving only 4 to 20 tissue samples. With our PX Integrated Solution, we expect to run up to 96 tissue samples per run.
- *High resolution*: The PX Integrated Solution will be designed to resolve molecules at the single cell level including subcellular localization of targets. We anticipate that this will enable researchers to differentiate between single cells to truly understand cellular characterization.
- *Targeted panels*: We believe that current discovery efforts with bulk sequencing will lead to translational panels that are targeted on the key genes of interest. Our PX Integrated Solution will be designed for larger scale studies that will process a higher number of samples with these focused panels.

Performance metrics of the PX Integrated Solution

Integrated detection	Direct in-situ analysis of cells and tissue
Cell capture efficiency	Direct readout in cells
Gene transcription assays	Targeted panels
Protein expression	10–100 of proteins
# of cells/sample	10–100 thousand cells per well
Throughput	96 samples at a time
Total cells per run	1–10 million cells
Cell visualization	Visual data on cell morphology, cell surface and intracellular markers on each cell
Cost	Significantly lower cost per cell including NGS

Applications for the PX Integrated Solution

We are developing our PX Integrated Solution to have a broad set of applications in single cell and tissue analysis. Examples of applications for our PX Integrated Solution may include but are not limited to the following:

- *Single cell RNA counting for differential gene expression*: Targeted gene panels (with customization available) for specific research areas and diagnostic applications to measure the gene expression within each cell. It is anticipated that the imaging readout will also provide cell morphology information.
- *Single cell proteomics*: Targeted protein panels for specific research areas and diagnostic applications to measure intracellular and surface proteins.
- *Single cell RNA sequencing for variant detection*: In situ sequencing of selected gene targets directly within each cell while also simultaneously providing phenotype data for each cell, such as binding of antigens to B cells.
- *Spatial RNA and proteomics applications for tissue in development*: Targeted panels (with customization available) for specific basic and translational research applications to measure gene transcription and protein expression within tissue and then link this information to additional phenotypic data to help provide biological context.

Key disease areas for the PX Integrated Solution

We are designing our PX Integrated Solution to have broad applicability across multiple large disease areas. Although our initial applications will focus on indications across oncology and immunology, we are designing our PX Integrated Solution to possess the foundational technology and capabilities to address additional areas, including neurology and developmental biology. We believe that key existing biological challenges can be addressed through improved multiomics information, higher resolution and enhanced spatial context, which we are designing our PX Integrated Solution to provide. The following large disease areas are examples of where we are designing our PX Integrated Solution to address significant challenges.

Oncology

We believe that by maintaining the spatial and cellular component and providing molecular characterization, researchers with a PX Instrument will be able to gain more contextual data than is currently possible today at scale. Today, two samples could be molecularly indistinguishable from each other despite the fact that one might be showing a response to treatment while the other may not. With the addition of visual data from the same sample layered in, it would be possible to identify that the difference between the two samples is in the spatial relationship of whether the immune cells have infiltrated the tumor cells. We believe that this is one potential application of our PX Instrument to help researchers further decipher and understand the tumor microenvironment.

We believe the PX Instrument will be ideally suited to study blood cancers initially. We are designing the PX Instrument to enable the mapping of the progression of blood cancers as they develop, pre and post treatment, to fully characterize them across multiple molecular markers. The cellular phenotype, including morphology, could be valuable in helping to further characterize these cancer cells along with the molecular data of gene expression. We anticipate that the coupling of molecular data with the cellular phenotype and morphology can help to drive further understanding and identification of different types of cancer as well as provide the ability to interpret biological function.

Immunology

We believe that differential gene expression in combination with the cellular morphology as well as protein information will bring a powerful perspective to understanding the function and role of immune cells and their biological properties that have currently been unattainable. The genotype, morphology and protein associations that will be provided by our PX Instrument will help researchers dissect relationships between the functions of different cell types with more direct data on cellular structure. Additionally, we believe that the scale and throughput of our instrument will help to standardize the phenotypic assessment of cell morphology to the same level as researchers are accustomed to with genomic data.

We also anticipate that our single cell sequencing will be valuable for identifying the paired receptor data (light and heavy chains in B cell or alpha and beta chains in T cell) that is currently lacking at scale today. By having a high throughput method that will sequence and retain the linkage of the two chains of the immune receptors, researchers will be able to study in more depth the immune repertoire while also correlating each cell with its cellular phenotype. Additionally, we believe that we will be able to use a DNA-conjugated antibody that recognizes the antigen to confirm the immune cell is binding to a specific antigen. We believe this combination of data can provide powerful information to interpret biological function as well as to further characterize immune cell types.

Markets

We believe our product pipeline, which is designed to analyze biology comprehensively, targets multiple markets across life sciences. We believe that our G4 and the PX Integrated Solutions, which have capabilities spanning NGS, single cell, spatial analysis and proteomics, address a substantially large and growing market opportunity, based on our estimates that these markets are underserved by existing products and technologies and our target customers will recognize the value proposition offered by our products.

NGS market

According to Allied Market Research, the global NGS market is expected to grow to approximately $18.6 billion in 2026 at a CAGR of approximately 19.2% between 2020 and 2026. According to DeciBio, the NGS market in 2020 consisted of 58% basic research and translational medicine and 42% clinical applications, and in 2021, the basic research and translational medicine market was estimated to be approximately $4 billion and the clinical applications market was estimated to be approximately $3 billion, which we believe we can

access based on the capabilities of our G4 Integrated Solution and assuming that target customers will view our G4 Integrated Solution as a competitive alternative to existing tools and technologies. The current landscape of NGS instruments available in the market today are comprised of lower and medium throughput benchtop platforms, and production scale high throughput platforms. The lower throughput instruments are typically less expensive and cost around $100,000 or less, but these platforms generally have a higher cost per gigabase of data generated relative to other available instruments, which results in a cost per sample that is often too high for routine clinical applications. The medium throughput platforms typically range from $200,000 up to $500,000 and have a lower cost per gigabase relative to lower throughput platforms. The higher throughput production scale instruments have price points approaching $1,000,000, but typically have a much lower cost per gigabase than the other platforms. We believe that the majority of instruments currently in the market are medium throughput instruments and that these platforms generally have a larger number of applications for which the cost of ownership makes more sense to customers. For example, we believe these platforms are well suited for clinical applications particularly in more decentralized settings where the volume demands may not be high enough to justify a high throughput system. We purposely designed our G4 Integrated Solution to target specific applications and to be capable of competing with other instruments across a range of throughput levels, particularly in the medium throughput segment. Based on the current designs and capabilities we have demonstrated in our G4 Integrated Solution, we also believe the G4 Integrated Solution can capture market share from both the lower throughput applications but also some of the higher throughput applications given its speed and anticipated operating costs.

NGS basic research and clinical markets

Within the basic research market, we believe that our G4 Integrated Solution will address challenges that are currently seen in market segments within oncology, immunology and other disease areas. These market segments struggle with the current time needed for sequencing, the batching requirements and the cost of sequencing. We are developing our G4 Integrated Solution to address these concerns. Further, we are developing applications to provide new and currently inaccessible data with novel products for longer sequencing reads and higher accuracy.

While we initially plan to sell and market our G4 Integrated Solution for RUO, we believe that the capabilities (especially the speed and accuracy) of our G4 Integrated Solution may enable our customers to use our platforms in clinical applications. While we currently do not intend to pursue clinical diagnostics applications, we may in the future seek premarket approval or clearance for our platforms in order to allow our customers to use our platforms in other product offerings.

Single cell, spatial analysis and proteomics markets

We are building our PX Integrated Solution to address the single cell and spatial analysis markets, which we estimate to be approximately $17 billion in 2021 based on available market data. We believe that the single cell capabilities of our G4 and PX Integrated Solutions will address an estimated global market opportunity of approximately $15 billion. Our G4 Integrated Solution addresses this market through single cell sequencing, while our PX Integrated Solution has complete single cell capabilities. According to DeciBio, the spatial analysis market, which will be addressed by our PX Integrated Solution, has a total addressable market of more than $2 billion, of which less than 10% has been penetrated as of 2020. According to Allied Market Research, the life sciences research portion of the global proteomics market, which will be addressed by our PX Integrated Solution, was estimated at approximately $20 billion in 2020. Given the performance of our PX Integrated Solution, we believe that our platform will address the current limitations of scale and throughput for this market. We believe we can access these markets based on the capabilities we have designed for our PX Integrated Solution and assuming that target customers will view our PX Integrated Solution as a competitive alternative to existing tools and technologies. We are designing the PX Integrated Solution to allow researchers to undertake the scale of studies that we believe are needed to further understand the complexity of cellular and tissue organization.

New markets

Both of our integrated solutions can be used in many different and diverse market segments, including basic biology, oncology, immunology, genetic disease, neurological disease, infectious disease, the human microbiome and many others. We believe that the multiomics study of cells in their cellular and tissue environment will create a more complete, data rich understanding of biology that will advance a broad and growing range of industries including broader segments of the healthcare industry and beyond. Therefore, we believe that the capabilities offered by our integrated solutions and future products may potentially lead to new end markets, applications and business models that complement our current addressable markets, and will expand our market opportunity.

These markets are characterized by rapid technological changes, frequent new product introductions, established and emerging competition, extensive intellectual property disputes and litigation, price competition, aggressive marketing practices, evolving industry standards and changing customer preferences. Accordingly, our prospects must be considered in light of the uncertainties, risks, expenses, and difficulties frequently encountered by new companies operating in rapidly changing and competitive markets.

We plan to sell and market our products for RUO to academic institutions, life sciences and research laboratories that conduct research, and to biopharmaceutical and biotechnology companies for non-diagnostic and non-clinical purposes. Additionally, CLIA-certified laboratories have the ability to develop LDTs using RUO products, and we believe that the capabilities of our products will enable our customers to use them in clinical applications as LDTs. In fact, today a significant majority of NGS-based diagnostic tests are performed as LDTs on DNA sequencers that are labeled for RUO. Over the near term, references throughout this prospectus to clinicians, clinical markets and clinical practice all refer to the potential use of our RUO labeled products for LDTs. While our initial products are intended for RUO, our longer-term plans include seeking FDA clearance for IVD products, and corresponding clearances in other countries.

Competitive Strengths

To address the challenges of sequencing, single cell, spatial and proteomics we aim to bring together the following unique capabilities:

- **We are developing innovative purpose built products to address underserved applications**: We have designed our G4 Integrated Solution and are designing our PX Integrated Solution to address challenges and bottlenecks within specific NGS, single cell and spatial analysis applications that we believe are not well-addressed today. We believe this will provide a differentiated product offering in the market and facilitate adoption with our customers.
- **Our Sequencing Engine is a foundational platform technology that optimizes key performance characteristics for our products**: Our Sequencing Engine is designed to provide a fast, accurate and high throughput detection system to sequence the fundamental unit that encodes all biological information, DNA. This engine provides the advantages of accuracy, speed, flexibility and scale to our G4 Integrated Solution and our planned PX Integrated Solution as both a universal detection method and for in situ sequencing.
- **Our integrated solutions are designed around customer needs and intended to offer advantages in key performance metrics**: Our experience shows that KPIs include accuracy, read length, turnaround time, throughput and efficient operational workflows. Our G4 Integrated Solution and planned PX Integrated Solution each consist of consumables and an instrument, which offer KPIs that we believe customers value. We believe that focusing our development and commercialization processes around our customers' needs, we will optimize our ability to achieve broad commercial adoption at launch.
- **Our innovative assays in development are designed to support novel applications in oncology and immunology**: Building on the Sequencing Engine foundation of accuracy, speed and flexibility, we are developing applications that can extend SLR and increase accuracy in rare variant detection with HD-Seq.

- **Our complementary product portfolio can serve multiple customer needs**: We believe that our G4 Integrated Solution and PX Integrated Solution, while they are designed to address different biological questions, will have significant overlap in terms of the potential customer base. Academic and research labs often consist of different departments which are focused on sequencing on the one hand and would find the G4 Integrated Solution most convenient, and, on the other hand, separate departments which would find utility in the single cell and spatial capabilities of the PX Integrated Solution. Therefore, we believe once our G4 Integrated Solution is commercialized and our PX Integrated Solution is developed and commercialized we will be uniquely positioned to cross sell both products to our customers, as once customers use one integrated solution, they often find utility in also purchasing the other to address additional research and development needs.

Our Growth Strategy

Our goal is to establish our Sequencing Engine as the standard for genomics and proteomics detection and to drive adoption of our platforms. Our growth strategy includes the following key elements:

- **Drive commercial adoption and utilization of the G4 Integrated Solution**: We aim to execute a three step commercialization plan for our G4 Integrated Solution consisting of: (1) collaborating with select partners to conduct beta pilot tests, which we have completed, (2) expanding collaborations with additional potential customers in an early access program and (3) offering our G4 Integrated Solution broadly to the market, with commercial launch by the end of 2021 and shipping units in the first half of 2022. Throughout our commercial rollout, we aim to grow our sales and marketing team to foster deep customer relationships initially with customers running our target G4 Integrated Solutions. We intend to focus on driving expansion of the installed base of our instruments and facilitating utilization of our consumables. We also plan to offer different access options, including capital sale and lease options for the G4 Integrated Solution to meet each customer's unique needs. As we grow we aim to build other commercial capabilities and manufacturing infrastructure to the scale needed to facilitate broad commercial adoption.
- **Complete development and drive commercial adoption of our PX Integrated Solution**: We aim to complete development of our PX Integrated Solution which targets the single cell and spatial markets. We are currently in an advanced prototype development stage and expect to begin an early access program in 2022 and full commercial launch in 2023 through a targeted and phased commercial strategy similar to the strategy we are employing for the G4 Integrated Solution.
- **Create an ecosystem of customers, partners and collaborators whose expertise and offerings complement and enhance the capabilities and utility of our integrated solutions**: Recognizing the strength of the current NGS ecosystem, we have designed our G4 Integrated Solution to seamlessly integrate into existing NGS workflows with plug and play interoperability both upstream and downstream. Additionally, we aim to partner with leading kit manufacturers to develop a wide range of library prep kits that will be accessible for our G4 Integrated Solution for numerous applications. For our PX Integrated Solution, we intend to work with external collaborators to foster and create an ecosystem around single cell and spatial analysis technology. We expect that this will facilitate adoption and market creation for our PX Integrated Solution to be readily available for our customers. Through activities such as collaborations with KOLs, generation of peer-reviewed publications, sponsorship of targeted projects, joint publications and seminars and industry partnerships, we aim to establish the value of our sequencing detection method as well as the utility of multiomics cellular and tissue data at large scale.
- **Expand the G4 and PX Integrated Solutions beyond initial applications**: We aim to continually innovate and develop new products, applications, workflows and analysis tools. Our aim is to simplify and accelerate researchers and clinicians' ability to generate multiomics data that will drive novel biological insights and drive more powerful and efficient workflows beyond sequencing, single cell, spatial analysis and other initial applications of our integrated solutions. We believe that the

capabilities offered by our integrated solution and future products may potentially lead to new end markets, applications and business models that complement our current addressable markets, and will expand our market opportunity.

- **Expand our commercial geographic presence**: We are initially building our commercial infrastructure to sell and support our products directly in the United States and Canada. We also have plans in place to sell and support our products in the European Union, United Kingdom, Asia Pacific and Japan, and expect to expand access to our products in other geographies through distributors. We are also building our manufacturing capabilities in our facility in La Jolla, California, and plan to continually evaluate and optimize our manufacturing and supply chain footprint to meet the scale needed for worldwide expansion.

Commercialization Strategy

Commercial strategy overview

Our business model focuses on first driving customer adoption of our G4 Integrated Solution followed by our PX Integrated Solution. We believe customer adoption will then form a base of users who in turn drive an on going revenue stream by purchasing our consumables. We plan to focus our commercial efforts on (1) expanding the installed base of our G4 Integrated Solution and PX Integrated Solution across a wide array of customer segments and (2) driving applications, scale of experimentation and discoveries that lead to increasing utilization of our integrated platforms by our customers. Similar to our strategy of developing purpose built products based on feedback from potential customers, we also plan to develop a service and support organization that will focus on creating an unparalleled customer experience. We believe in the value of creating new customers while expanding utilization of existing customers through the sale of purpose built products and the establishment of customer loyalty.

We plan to initially target customers who are already familiar with genomic analysis, including academic institutions, genomic research centers/core labs, government laboratories, hospitals/integrated delivery networks, as well as pharmaceutical, CROs, biotechnology, consumer genomics, commercial molecular diagnostic laboratories and agrigenomics companies. Our direct sales, support and marketing efforts will be focused on the principal investigators, researchers, department heads, research laboratory directors, core facility directors, medical directors and scientific/technology officers who control the buying decisions. We expect these customers to purchase our integrated solutions in line with typical purchasing of other life sciences tools, and we anticipate pricing both of our integrated solutions on a competitive basis to other similar sequencing instruments currently available.

The general publication and scientific presentation of our system performance are a core pillar of our market awareness strategy and are important for establishing validity and utility of new products in the life sciences community. We plan to work closely with our customers, including KOLs and our select centers in our beta pilot and early access programs, to generate clear use-cases as well as peer-reviewed publications that illustrate our product performance claims and value proposition. Furthermore, we intend on generating our own authored publications detailing our novel applications to create awareness and validate the available applications unique to our integrated solutions. In addition, we plan to drive awareness by developing and deploying online and in-person training and education tools that explain our sequencing technology and key applications in easy-to-access, easy-to-understand, and scientifically rigorous and credible ways.

To service our customers, we expect to provide multiple levels of technical support for our G4 Integrated Solution and planned PX Integrated Solution. We recognize that excellent customer support can be a critical part of a customer’s experience, and we plan to invest accordingly in our technical, application and service support functions. Given the diversity of our target customers, both immediate phone support and on-site support will be required. Likewise, we intend to leverage these assets to develop general and specialized educational programs that will be delivered to our customers in a manner that will help them optimize instrument and consumables utilization.

G4 Integrated Solution commercial launch plan

We intend to follow a three-phase launch plan to commercialize our G4 Integrated Solution, which will include (1) collaborating with select partners to conduct beta pilot programs, which we have completed, (2) expanding collaborations with additional selected partners in an early access program and (3) offering our G4 Integrated Solution broadly to the market via commercial launch by the end of 2021 with intentions for shipping units in the first half of 2022. This three-phase approach has been successfully deployed to introduce transformative technologies in numerous life science sectors over many years, including previous genomics products and services, single cell technologies and proteomics platforms. We believe that this phased approach will allow us to introduce our products in a measured way, demonstrate clear customer use-cases and help ensure we are scaling and expanding efficiently to deliver a positive and differentiated customer experience. We believe this approach will also build a prospective customer pipeline and demonstrate visibility to future demand.

Validate core sequencing engine KPIs

We have established an applications lab, which began service in early 2020 as a way to create data that validated our platform's performance (the Applications Lab). We expect to continue to leverage our Applications Lab capabilities to demonstrate integrated system performance. We are targeting KOLs who are highly skilled at evaluating sequencing data and whose feedback could help solidify the attributes of our G4 Integrated Solution while simultaneously creating external validation to other interested target customers. Additionally, we believe these KOLs are highly influential in the genomics community. We intend to work with these collaborators to establish early models of impactful research and discovery that will highlight the unique capabilities and value proposition of our G4 Integrated Solution. These initial external partners have also been instrumental in validating our core Sequencing Engine, our differentiated applications and beginning to raise awareness in the scientific community.

Phase 1 beta pilots

We targeted a limited number of collaborators for our beta pilot program who are familiar with our G4 Integrated Solution. We plan to leverage these collaborators as our first externally installed integrated solutions to demonstrate how our products will be shipped, installed, validated and utilized in a field-based setting. We recently completed our beta pilot testing. We plan to work with these collaborators to establish early models of impactful research and discovery to highlight the unique attributes, capabilities and value proposition of our G4 Integrated Solution. Additionally, these sites have provided key feedback to us on the usability and functionality of our G4 Integrated Solutions from an end-user perspective. Additionally, we received validation on the performance, installation procedures, instrument validation processes and end user training.

Phase 2 early access program

For our early access program we plan to expand to six to ten additional collaborators across our target market segments who represent institutions across a broad spectrum of research centers and commercial companies pushing the frontiers of their science efforts. We intend to primarily focus on collaborators who can scale quickly and demonstrate the power and utility of our G4 Integrated Solution across a number of applications, such as immunology, oncology and biomedical research. During this phase, we expect to broaden our commercial footprint to access and support an increasing number of customers and to set the foundation for the final phase of our commercial roll out. We expect this early access program to provide a path for customers to adopt our G4 Integrated Solution.

Broad commercial availability

We intend to build on the momentum we expect to have created through our Applications Lab, beta pilot program and our early access program to provide for broad commercial availability in the first half of 2022. We

plan to launch our G4 Integrated Solution at the end of 2021 to targeted customers at our proposed list price, with certain volume discounts for consumables consistent with industry standards. We also intend to consider different sales strategies that have previously been used in the industry to drive demand and adoption of our instruments including among others, trade-in programs, reagent rentals, instrument leasing programs. As we grow our installed base, we plan to simultaneously optimize our customers' use and adoption of our corresponding consumables. We plan to further expand our penetration of our accessible markets by continuing to develop differentiated products, applications, workflows and analysis tools that simplify workflows, provide a complete solution and expand beyond sequencing, single cell, spatial analysis and other initial applications of our G4 Integrated Solution.

Commercial organization

We are in the process of building out our commercial organization and we expect to have direct commercial staff in sales, customer success, technical support, field service and market development functions. Throughout our commercial rollout, we will need to scale each function within our commercial organization in anticipation of demand and with the intent to deliver exceptional customer experience. We believe that coupling customer experience with a transformative integrated solution will allow us to deliver substantial value to our customers, build long-term customer loyalty and enhance our competitive differentiation.

We expect to initially target customers in North America through direct sales and customer support organizations. We also plan to expand outside North America to sell and support our products in the European Union, United Kingdom, Asia Pacific and Japan, and expect to expand access to our products in other geographies through well established distribution networks.

Our People, Culture and Human Capital Resources

As of March 31, 2021 we had 138 full-time employees, 106 of whom were engaged in research and development activities, and many of which are based at our global headquarters in La Jolla, California. Innovating in this field requires being able to attract, develop, engage and retain top scientific experts in a wide variety of scientific disciplines. Out of the full-time employees, 76 hold advanced degrees in their field of expertise, including 40 who hold medical or doctoral degrees. None of our employees are subject to a collective bargaining agreement and we have not experienced any work stoppages. We believe relations with our employees are generally good.

We invest significant resources to attract, develop, engage and retain the talent needed to achieve our mission of accelerating genomics for the advancement of science and medicine. By investing significant resources in our people, we are better able to make discoveries across the fastest growing markets in basic research, clinical applications, single cell analysis and spatial genomics and proteomics and grow our business. We offer competitive total rewards, including salary, bonuses, benefits and equity compensation for our employees. Further, we offer unique perks to delight our employees so that they will in turn delight our customers. We strive to maintain and promote a culture that fosters the values, behaviors and attributes necessary to advance our business and execute our strategy.

Our mission and core values are incorporated into everything we do. We reinforce our mission and core values at multiple touchpoints with our employees and intend to reinforce this messaging with our customers. The following core values guide the decisions that we make and permeate into all of our decisions and into our product and service offerings:

- Embrace the Challenge.
- Collaborate & Be Humble.
- Be an Ambassador.

- Think at Scale.
- Care Deeply & Be Accountable.
- Be Authentic and Thoughtful.

Our human capital resources objectives include, as applicable, identifying, recruiting, retaining, incentivizing and integrating our existing and additional employees. The principal purposes of our equity incentive plans are to attract, retain and motivate selected employees, consultants and directors through the granting of stock-based compensation awards and cash-based performance bonus awards.

Research and Development

Our research and development teams have designed and developed our proprietary products using an interdisciplinary approach that combines expertise across a broad range of scientific disciplines including chemistry, molecular biology, hardware, software and engineering. They work together to build products that enable researchers and clinicians to accelerate discoveries across the fastest growing markets in basic research, clinical applications, single cell analysis and spatial genomics and proteomics. Our research and development teams are currently located at our headquarters in La Jolla, California.

The overarching goal of our research and development programs is to accelerate genomics for the advancement of science and medicine. To this end, we focus our research and development efforts on the following areas:

- *Improve the performance of our core Sequencing Engine*: We plan to improve our existing core Sequencing Engine. These improvements may provide higher density on our flow cells, faster cycle time and larger amounts of biological information that can be obtained from each sequencing run.
- *Develop new applications for our G4 Integrated Solution*: We plan to expand the range of applications that are available on our G4 Integrated Solution to allow researchers access to new types of biological information. For example, we are planning to develop new methods that will allow for longer reads on the G4 Instrument.
- *Develop our PX Integrated Solution*: We plan to introduce a product that offers high spatial resolution and high sensitivity. We are working to develop our PX Integrated Solution to ensure high throughput, high spatial resolution and multiomics capabilities.
- *Enable Future Instruments*: We intend to continue to leverage our core Sequencing Engine to develop future instruments across fast growing market segments.

As of March 31, 2021, we had 106 employees in research and development. Looking forward, we will continue to invest in efforts to support the ongoing development of our instruments and consumables, as well as enhance the overall performance of our solutions.

Competition

The life sciences market is highly competitive. There are other companies, both established and early-stage, that have indicated that they are designing, manufacturing and marketing products for, among other things, genomics analysis, single cell analysis and spatial analysis. These companies include 10x Genomics Inc., Becton, Dickinson and Company, Bio-Rad Laboratories, Inc., Illumina Inc., MissionBio Inc., and Nanostring Technologies, Inc., Oxford Nanopore Technologies Inc., Pacific Biosciences Inc. and Thermo Fisher Scientific Inc., each of which has products that compete to varying degrees with some but not all of our product solutions, as well as a number of other emerging and established companies. Some of these companies may have substantially greater financial and other resources than us, including larger research and development staff or more established marketing and sales forces. Other competitors are in the process of developing novel technologies for the life sciences market which may lead to products that rival or replace our products.

However, we believe we are substantially differentiated from our competitors for many reasons, including our proprietary ultra-fast core Sequencing Engine and our unique G4 Integrated Solution and planned PX Integrated Solution, scalable infrastructure and multidisciplinary teams. We believe our customers will favor our products and company because of these differentiators.

For further discussion of the risks we face relating to competition, see the section titled “Risk Factors—Risks related to our business and industry — The life sciences technology market is highly competitive. If we fail to compete effectively, our business and operating results will suffer”.

Intellectual Property

Developing and maintaining a strong intellectual property position is an important element of our business. Our success depends in part on our ability to obtain and maintain intellectual property protection for our products, technologies and our brand. We utilize a variety of intellectual property protection strategies, including patents, trademarks, trade secrets and other methods of protecting proprietary information.

As of January 25, 2021, we own or exclusively license three (3) issued U.S. patents, fifteen (15) pending U.S. Utility patent applications, three (3) pending European patent applications, nine (9) pending Patent Cooperation Treaty (PCT) patent applications and twenty (20) pending U.S. Provisional patent applications. The pending European patent applications were filed in the European Patent Organization (EPO), designating all thirty-eight (38) member countries. Our owned patents and patent applications, if issued, are expected to expire between 2038 and 2041, in each case without taking into account any possible patent term adjustments or extensions and assuming payment of all appropriate maintenance, renewal, annuity, or other governmental fees.

Our patent strategy seeks broad patent protection on new developments in sequencing technology in addition to new implementations and applications of our technology. The intellectual property portfolio includes patents and pending patent applications that generally relate to the following areas: chemistry (e.g., nucleotides, dyes and polymers); enzymes; nucleic acid sequencing and amplification methodologies; systems, devices and software; spatial analysis; and applications of our technology.

The device components, reagents, and methods used in the G4 Integrated Solution are protected in, for example, at least two (2) issued U.S. patents, ten (10) pending U.S. Utility patent applications, two (2) pending European patent applications, six (6) pending PCT patent applications, and fourteen (14) pending U.S. Provisional patent applications of our intellectual property portfolio. The device components, reagents, and methods used in the PX Integrated Solution are protected in, for example, at least 2 issued U.S. patents, eight (8) pending U.S. Utility patent applications, two (2) pending European patent applications, six (6) pending PCT patent applications and twelve (12) pending U.S. Provisional patent applications of our intellectual property portfolio.

Additional specific protection for SLR is provided in, for example, at least one (1) pending PCT patent application and one (1) U.S. Utility pending patent application of our intellectual property portfolio. Additional protection for HD-Seq is provided in, for example, at least one (1) pending PCT patent application and one (1) U.S. Utility pending patent application of our intellectual property portfolio.

We exclusively license from The Trustees of Columbia University in the City of New York (Columbia), two (2) pending U.S. Utility patent applications, and one (1) pending European patent application, as of January 25, 2021. The pending European patent application was filed in the EPO, designating all thirty-eight (38) member countries. These patent applications are directed to compositions and methods for sequencing utilizing nucleotides containing disulfide linkers. Our in-licensed patent applications, if issued, are expected to expire in 2036 and 2037, in each case without taking into account any possible patent term adjustments or extensions and assuming payment of all appropriate maintenance, renewal, annuity, or other governmental fees.

In addition to our reliance on patent protection for our inventions, products and technologies, we also rely on trade secrets, know-how, confidentiality agreements and continuing technological innovation and licensing opportunities to develop and maintain our competitive position. For example, some elements of manufacturing processes such as our nucleotide synthesis and flow cell assembly, analytic techniques and assays, imaging and optics implementations, as well as computational algorithms, and related processes and software, are based on unpatented trade secrets and know-how that are not publicly disclosed. Our success will depend in part on our ability to obtain patent protection for our products and technologies, to preserve our trade secrets, to operate without infringing the proprietary rights of third parties and to acquire licenses related to enabling technology or products.

We use Singular Genomics, G4 and PX as trademarks in the United States. This disclosure contains references to our trademark and service marks and to those belonging to other entities. Solely for convenience, trademarks and trade names referred to in this disclosure, including logos, artwork and other visual displays, may appear without the ® or TM symbols, but such references are not intended to indicate in any way that we will not assert, to the fullest extent under applicable law, our rights or the rights of the applicable licensor to these trademarks and trade names. We do not intend our use or display of other entities' trade names, trademarks or service marks to imply a relationship with, or endorsement or sponsorship of us by, any other entity.

Columbia University License Agreement

In August 2016, we entered into an Exclusive License Agreement with Columbia (the Columbia License Agreement). Under the Columbia License Agreement, we received (i) an exclusive, sublicensable, worldwide license under certain patents owned by Columbia to discover, develop, make and sell products or services covered by the claims of such licensed patents (the Patent Products), and (ii) an exclusive, sublicensable, worldwide license under certain materials and technical information provided by Columbia to discover, develop, make and sell products or services that directly use or incorporate such materials or information (the Other Products).

The Columbia License Agreement requires us to use commercially reasonable efforts to research, discover, develop and market Patent Products and/or Other Products and to achieve certain fundraising and development milestone events.

Under the Columbia License Agreement, we are required to pay an annual license fee that increases each year, until it reaches a low six digit fee for the fifth, and for each subsequent year, for so long as the Columbia License Agreement remains in force. For any products within the scope of the Columbia License Agreement that we commercialize, we are required to pay royalties ranging from low to mid-single digits on net sales of Patent Products and low single digit royalty rates on net sales of Other Products. We can credit our yearly annual license fee against any yearly royalty fees payable to Columbia. Additionally, if we receive any income in connection with any sublicenses, we must pay Columbia a high single digit percentage of that income. Finally, the Columbia License Agreement provides for payments to Columbia based upon our achievement of certain development and commercialization milestones, which could total up to $3.9 million over the life of the Columbia License Agreement. As of March 31, 2021, we have paid an aggregate of $0.1 million to Columbia pursuant to the terms of the Columbia License Agreement.

The Columbia License Agreement, and any associated royalty payment obligations, continue in effect on a country-by-country, product-by-product basis until the later of (i) the expiration of the last to expire of the licensed patents covering a Patent Product or (ii) 12 years from the first commercial sale of an Other Product in the applicable country, or the termination of the Agreement. Each party has customary rights to terminate the Columbia License Agreement due to the other party's material breach, if such breach remains uncured. The Columbia License Agreement provides that we will use commercially reasonable efforts to research, discover, develop and market Patent Products and/or Other Products and to achieve certain fundraising and development milestone events. Columbia also has a right to terminate the Columbia License Agreement in the event we become insolvent or otherwise cease operations or in the event we assert any claim challenging the validity or enforceability of any patent licensed to us by Columbia under the Columbia License Agreement.

Suppliers and Manufacturing

Consumables

The majority of our consumable products are manufactured in-house at our facilities in La Jolla, California. These manufacturing operations include: flow cell surface synthesis and flow cell assembly, reagent formulation and cartridge filling, kit assembly and packaging as well as analytical and functional quality control testing. We are expecting to achieve ISO 9001:2015 certification in the next few years, which covers design, development, manufacturing, distribution, service and sales.

We obtain some components of our consumables from third-party suppliers. While some of these components are sourced from a single supplier, we have qualified second sources for several of our critical reagents, including flow cells, optics and oligonucleotides. We believe that having dual sources for our components helps reduce the risk of a production delay caused by a disruption in the supply of a critical component. For further discussion of the risks relating to our third-party suppliers, see the section titled “Risk factors—Risks related to our business and industry—We are dependent on single source suppliers for some components to our consumables and the loss of any of these suppliers could harm our business.”.

Instruments

The manufacturing for our instruments are conducted in-house at our facilities in La Jolla, California. We expect these operations to obtain 9001 and ISO 13485 certification within the next few years.

Regulatory

Government regulation

The development, testing, manufacturing, marketing, post-market surveillance, distribution, advertising and labeling of certain of medical devices are subject to regulation in the United States by the Center for Devices and Radiological Health of the FDA under the Federal Food, Drug, and Cosmetic Act (FDC Act) and comparable state and international agencies. FDA defines a medical device as an instrument, apparatus, implement, machine, contrivance, implant, in vitro reagent or other similar or related article, including any component part or accessory, which is (i) intended for use in the diagnosis of disease or other conditions, or in the cure, mitigation, treatment, or prevention of disease, in man or other animals, or (ii) intended to affect the structure or any function of the body of man or other animals and which does not achieve any of its primary intended purposes through chemical action within or on the body of man or other animals and which is not dependent upon being metabolized for the achievement of any of its primary intended purposes. Medical devices to be commercially distributed in the United States must receive from the FDA either clearance of a premarket notification, known as 510(k), premarket approval, or PMA, or authorization through a de-novo petition pursuant to the FDC Act prior to marketing, unless subject to an exemption.

We intend to label and sell our products for research purposes only (RUO) and expect to sell them to academic institutions, life sciences and research laboratories that conduct research, and biopharmaceutical and biotechnology companies for non-diagnostic and non-clinical purposes. Our products are not intended or promoted for use in clinical practice in the diagnosis of disease or other conditions, and they are labeled for research use only, not for use in diagnostic procedures. Accordingly, we believe our products, as we intend to market them, generally are not subject to regulation by FDA. Rather, while FDA regulations require that research use only products be labeled with – “For Research Use Only. Not for use in diagnostic procedures.” – the regulations do not subject such products to the FDA’s jurisdiction or the broader pre- and post-market controls for medical devices.

In November 2013, the FDA issued a final guidance on RUO labeled products, which, among other things, reaffirmed that a company may not make any clinical or diagnostic claims about an RUO product, stating that

merely including a labeling statement that the product is for research purposes only will not necessarily render the device exempt from the FDA's clearance, approval, or other regulatory requirements if the totality of circumstances surrounding the distribution of the product indicates that the manufacturer knows its product is being used by customers for diagnostic uses or the manufacturer intends such a use. These circumstances may include, among other things, written or verbal marketing claims regarding a product's performance in clinical diagnostic applications and a manufacturer's provision of technical support for such activities. If FDA were to determine, based on the totality of circumstances, that our products labeled and marketed for RUO are intended for diagnostic purposes, they would be considered medical devices that will require clearance or approval prior to commercialization. Further, sales of devices for diagnostic purposes may subject us to additional healthcare regulation. We continue to monitor the changing legal and regulatory landscape to ensure our compliance with any applicable rules, laws and regulations.

In the future, certain of our products or related applications could become subject to regulation as medical devices by the FDA. If we wish to label and expand product lines to address the diagnosis of disease, regulation by governmental authorities in the United States and other countries will become an increasingly significant factor in development, testing, production and marketing. Products that we may develop in the molecular diagnostic markets, depending on their intended use, may be regulated as medical devices or in vitro diagnostic products (IVDs) by the FDA and comparable agencies in other countries. In the U.S., if we market our products for use in performing clinical diagnostics, such products would be subject to regulation by the FDA under pre-market and post-market control as medical devices, unless an exemption applies, we would be required to obtain either prior 510(k) clearance or prior premarket approval from the FDA before commercializing the product.

The FDA classifies medical devices into one of three classes. Devices deemed to pose lower risk to the patient are placed in either class I or II, which, unless an exemption applies, requires the manufacturer to submit a pre-market notification requesting FDA clearance for commercial distribution pursuant to Section 510(k) of the FDC Act. This process, known as 510(k) clearance, requires that the manufacturer demonstrate that the device is substantially equivalent to a previously cleared and legally marketed 510(k) device or a "pre-amendment" class III device for which PMAs have not been required by the FDA. This FDA review process typically takes from four to twelve months, although it can take longer. Most class I devices are exempted from this 510(k) premarket submission requirement. If no legally marketed predicate can be identified for a new device to enable the use of the 510(k) pathway, the device is automatically classified under the FDC Act as class III, which generally requires PMA approval. However, FDA can reclassify or use "de novo classification" for a device that meets the FDC Act standards for a class II device, permitting the device to be marketed without PMA approval. To grant such a reclassification, FDA must determine that the FDC Act's general controls alone, or general controls and special controls together, are sufficient to provide a reasonable assurance of the device's safety and effectiveness. The de novo classification route is generally less burdensome than the PMA approval process.

Devices deemed by the FDA to pose the greatest risk, such as life-sustaining, life-supporting, or implantable devices, or those deemed not substantially equivalent to a legally marketed predicate device, are placed in class III. Class III devices typically require PMA approval. To obtain PMA approval, an applicant must demonstrate the reasonable safety and effectiveness of the device based, in part, on data obtained in clinical studies. The PMA application must also contain a full description of the device and its components, a full description of the methods, facilities, and controls used for manufacturing, and proposed labeling. If the FDA accepts the application for review, it has 180 days to complete its review of a PMA application, although in practice, the FDA's review often takes significantly longer, and can take up to several years. An advisory panel of experts from outside the FDA may be convened to review and evaluate the application and provide recommendations to the FDA as to the approvability of the device. The FDA may or may not accept the panel's recommendation. In addition, the FDA will generally conduct a pre-approval inspection of the applicant or its third-party manufacturers' or suppliers' manufacturing facility or facilities to ensure compliance with the current good manufacturing practices. If we are required to submit our products for pre-market review by the FDA, we may be

required to delay marketing and commercialization while we obtain premarket clearance or approval from the FDA. There would be no assurance that we could ever obtain such clearance or approval.

All clinical studies of investigational medical devices to determine safety and effectiveness must be conducted in accordance with FDA's investigational device exemption (IDE) regulations, including the requirement for the study sponsor to submit an IDE application to FDA, unless exempt, which must become effective prior to commencing human clinical studies. All clinical investigations of devices to determine safety and effectiveness must be conducted in accordance with the FDA's IDE regulations which govern investigational device labeling, prohibit promotion of the investigational device, and specify an array of recordkeeping, reporting and monitoring responsibilities of study sponsors and study investigators. If the device presents a "significant risk," to human health, as defined by the FDA, the FDA requires the device sponsor to submit an IDE application to the FDA, which must become effective prior to commencing human clinical trials. A significant risk device is one that presents a potential for serious risk to the health, safety or welfare of a patient and either is implanted, used in supporting or sustaining human life, substantially important in diagnosing, curing, mitigating or treating disease or otherwise preventing impairment of human health, or otherwise presents a potential for serious risk to a subject. An IDE application must be supported by appropriate data, such as animal and laboratory test results, showing that it is safe to test the device in humans and that the testing protocol is scientifically sound. The IDE will automatically become effective 30 days after receipt by the FDA unless the FDA notifies the company that the investigation may not begin. If the FDA determines that there are deficiencies or other concerns with an IDE for which it requires modification, the FDA may permit a clinical trial to proceed under a conditional approval. In addition, the study must be approved by, and conducted under the oversight of, an Institutional Review Board (IRB) for each clinical site. During a study, the sponsor is required to comply with the applicable FDA requirements, including, for example, trial monitoring, selecting clinical investigators and providing them with the investigational plan, ensuring IRB review, adverse event reporting, record keeping and prohibitions on the promotion of investigational devices or on making safety or effectiveness claims for them. The clinical investigators in the clinical study are also subject to FDA regulations and must obtain patient informed consent, rigorously follow the investigational plan and study protocol, control the disposition of the investigational device, and comply with all reporting and recordkeeping requirements. Additionally, after a trial begins, we, the FDA or the IRB could suspend or terminate a clinical trial at any time for various reasons, including a belief that the risks to study subjects outweigh the anticipated benefits.

As noted above, although we intend to label and sell our products for research purposes only, the regulatory requirements related to marketing, selling and supporting such products could be uncertain and depend on the totality of circumstances. This uncertainty exists even if such use by our customers occurs without our consent. If the FDA or other regulatory authorities assert that any of our RUO products are subject to regulatory clearance or approval, our business, financial condition, or results of operations could be adversely affected.

For example, in some cases, our customers may use our RUO products in their own laboratory-developed tests (LDTs) or in other FDA-regulated products for clinical diagnostic use. The FDA has historically exercised enforcement discretion in not enforcing the medical device regulations against LDTs and LDT manufacturers. However, on October 3, 2014, the FDA issued two draft guidance documents that set forth the FDA's proposed risk-based framework for regulating LDTs, which are designed, manufactured and used within a single laboratory. In January 2017, the FDA announced that it would not issue final guidance on the oversight of LDTs and LDT manufacturers, but would seek further public discussion on an appropriate oversight approach and give Congress an opportunity to develop a legislative solution. More recently, the FDA has issued warning letters to genomics labs for illegally marketing genetic tests that claim to predict patients' responses to specific medications, noting that the FDA has not created a legal "carve-out" for LDTs and retains discretion to take action when appropriate, such as when certain genomic tests raise significant public health concerns. Congress also has introduced legislation explicitly granting FDA jurisdiction to regulate LDTs, as well as create a regulatory framework for the regulation of LDTs based on risk. To date, no such legislation has been approved by Congress. Moreover, as part of the former Trump Administration's efforts to combat COVID-19 and consistent with Executive Orders 13771 (Executive Order on Reducing Regulation and Controlling Regulatory

Costs) and 13924 (Executive Order on Regulatory Relief to Support Economic Recovery), HHS announced rescission of guidance and other informal issuances of the FDA regarding premarket review of LDT absent notice-and-comment rulemaking, stating that, absent notice-and-comment rulemaking, those seeking approval or clearance of, or an emergency use authorization, for an LDT may nonetheless voluntarily submit a premarket approval application, premarket notification or an Emergency Use Authorization request, respectively, but are not required to do so. However, laboratories opting to use LDTs without FDA premarket review or authorization would not be eligible for liability protection under the Public Readiness and Emergency Preparedness Act. While this action by HHS is expected to reduce the regulatory burden on clinical laboratories certified under the Clinical Laboratory Improvement Amendments of 1988 that develop LDTs, it is unclear how this action as well as future legislation by federal and state governments and the FDA will impact the industry, including our business and that of our customers. Such HHS measure may compel the FDA to formalize earlier enforcement discretionary policies and informal guidance through notice-and-comment rulemaking or impose further restrictions on LDTs. HHS' rescission policy may change over time. Congress could also enact legislation restricting LDTs. Any restrictions on LDTs by the FDA, HHS, Congress, or state regulatory authorities may decrease the demand for our products. The adoption of new restrictions on RUOs, whether by the FDA or Congress, could adversely affect demand for our specialized reagents and instruments.

As laboratories and manufacturers develop more complex genetic tests and diagnostic software, FDA may increase its regulation of LDTs. Any future legislative or administrative rule making or oversight of LDTs and LDT manufacturers, if and when finalized, may impact the sales of our products and how customers use our products, and may require us to change our business model in order to maintain compliance with these laws. We would become subject to additional FDA requirements if our products are determined to be medical devices or if we elect to seek 510(k) clearance or premarket approval. If our products become subject to FDA regulation as medical devices, we would need to invest significant time and resources to ensure ongoing compliance with FDA quality system regulations and other post-market regulatory requirements.

International sales of medical devices are subject to foreign government regulations, which vary substantially from country to country. In the future, if we decide to distribute or market our diagnostic products as IVDs in Europe, such products will be subject to regulation under the European Union (EU) IVD Directive and/or the IVD Medical Device Regulation (IVDR) European Union (EU) 2017/746. The IVDR was published in 2017, will replace the IVD Directive, is significantly more extensive than the IVD Directive, including requirements on performance data and quality system, and will become fully enforceable in 2022. Outside of the EU, regulatory approval needs to be sought on a country-by-country basis in order to market medical devices. Although there is a trend towards harmonization of quality system, standards and regulations in each country may vary substantially which can affect timelines of introduction.

In the future, to the extent we develop any clinical diagnostic assays, we may pursue payment for such products through a diverse and broad range of channels and seek coverage and reimbursement by government health insurance programs and commercial third-party payors for such products. In the United States, there is no uniform coverage for clinical laboratory tests. The extent of coverage and rate of payment for covered services or items vary from payor to payor. Obtaining coverage and reimbursement for such products can be uncertain, time-consuming and expensive, and, even if favorable coverage and reimbursement status were attained for our tests, to the extent applicable, less favorable coverage policies and reimbursement rates may be implemented in the future. Changes in healthcare regulatory policies could also increase our costs and subject us to additional regulatory requirements that may interrupt commercialization of our products, decrease our revenue and adversely impact sales of, and pricing of and reimbursement for, our products.

In the event that we develop clinical diagnostic assays for which third-party reimbursement becomes available, we would also become subject to various federal and state fraud and abuse and transparency laws. Among other things, these laws may impact our arrangements with customers, as well as our consulting and other arrangements with healthcare providers and others who purchase, recommend or order our clinical diagnostic products. The federal anti-kickback statute prohibits, among other things, persons and entities from knowingly

and willfully offering, paying, soliciting, or receiving remuneration, directly or indirectly, overtly or covertly, in cash or in kind, in return for or to induce or reward the purchase, lease, order, arrangement for, or recommendation of, any item or service that is reimbursable, in whole or in part, under a federal healthcare program. In addition, the federal civil and criminal false claims laws (including the civil False Claims Act, for which claims can be brought by private citizens on behalf of the government through *qui tam* actions), impose liability for, among other things, knowingly presenting, or causing to be presented, false or fraudulent claims for payment of federal funds, and knowingly making, or causing to be made, a false record or statement material to a false or fraudulent claim. Further, the Physician Payments Sunshine Act requires certain manufacturers of drugs, devices, biologics, and medical supplies for which reimbursement is available under certain federal health care programs to collect and report annually certain information on payments and other transfers of value to U.S.-licensed physicians (defined to include doctors, dentists, optometrists, podiatrists, and chiropractors) and teaching hospitals, as well as ownership and investment interests held by physicians and their immediate family members. Beginning in 2022, applicable manufacturers also will be required to report such information regarding its payments and other transfers of value to physician assistants, nurse practitioners, clinical nurse specialists, anesthesiologist assistants, certified registered nurse anesthetists and certified nurse midwives during the previous year and various other providers. Analogous state laws addressing these topics may also affect our arrangements. Violations of these laws can result in significant penalties, including civil, criminal and administrative penalties, disgorgement, monetary fines, possible exclusion from participation in Medicare, Medicaid and other federal healthcare programs, imprisonment, and integrity oversight and reporting obligations.

For further discussion of the risks we face relating to regulation, see the section titled “Risk factors—Risks related to our business and industry—Our products could become subject to government regulation as medical devices by the FDA and other regulatory agencies even if we do not elect to seek regulatory clearance or approval to market our products for diagnostic purposes, which would adversely impact our ability to market and sell our products and harm our business. If our products become subject to FDA regulation, the regulatory clearance or approval and the maintenance of continued and post-market regulatory compliance for such products will be expensive, time-consuming, and uncertain both in timing and in outcome.”

HIPAA, as amended by HITECH, and their implementing regulations, impose obligations, including mandatory contractual terms, with respect to safeguarding the transmission, security and privacy of protected health information by covered entities subject to HIPAA, such as health plans, healthcare clearinghouses and certain healthcare providers and their respective business associates and covered subcontractors that access protected health information. HITECH also created new tiers of civil monetary penalties and made civil and criminal penalties directly applicable to business associates in some cases, and gave state attorneys general new authority to file civil actions for damages or injunctions in federal courts to enforce the federal HIPAA laws and seek attorneys’ fees and costs associated with pursuing federal civil actions.

In addition, in the U.S., numerous federal and state laws and regulations, including state data breach notification laws, state health information privacy laws state genetic privacy laws, federal and state research laws and federal and state consumer protection laws, govern the collection, use, disclosure and protection of health-related and other personal information. For example, in June 2018, the State of California enacted the CCPA, which came into effect on January 1, 2020 and provides new data privacy rights for consumers and new operational requirements for companies. While we do not believe we are currently subject to the CCPA, we may in the future be required to comply with the CCPA, which may increase our compliance costs and potential liability. In addition, in November 2020, California voters approved the California Privacy Rights Act (CPRA) ballot initiative which introduced significant amendments to the CCPA and established and funded a dedicated California privacy regulator, the California Privacy Protection Agency (CPPA). The amendments introduced by the CPRA go into effect on January 1, 2023, and new implementing regulations are expected to be introduced by the CPPA. This could mark the beginning of a trend toward more stringent state privacy legislation in the U.S., which could increase our potential liability and adversely affect our business.

Furthermore, the collection, use, storage, disclosure, transfer, or other processing of personal data regarding individuals in the European Economic Area (EEA), including personal health data, is subject to the GDPR, which

became effective on May 25, 2018. The GDPR is wide-ranging in scope and imposes numerous requirements on companies that process personal data, including requirements relating to processing health and other sensitive data, obtaining consent of the individuals to whom the personal data relates, providing information to individuals regarding data processing activities, implementing safeguards to protect the security and confidentiality of personal data, providing notification of data breaches and taking certain measures when engaging third-party processors. The GDPR also imposes strict rules on the transfer of personal data to countries outside the EEA, including the United States, and permits data protection authorities to impose large penalties for violations of the GDPR, including potential fines of up to €20 million or 4% of annual global revenues, whichever is greater. The GDPR also confers a private right of action on data subjects and consumer associations to lodge complaints with supervisory authorities, seek judicial remedies and obtain compensation for damages resulting from violations of the GDPR. In addition, the GDPR includes restrictions on cross-border data transfers. The GDPR may increase our responsibility and liability in relation to personal data that we process where such processing is subject to the GDPR, and we may be required to put in place additional mechanisms to ensure compliance with the GDPR, including as implemented by individual countries. Compliance with the GDPR will be a rigorous and time-intensive process that may increase our cost of doing business or require us to change our business practices, and despite those efforts, there is a risk that we may be subject to fines and penalties, litigation and reputational harm in connection with our European activities. Further, the United Kingdom's decision to leave the EU, often referred to as Brexit, has created uncertainty with regard to data protection regulation in the United Kingdom.

For further discussion of the risks we face relating to regulation, see the section titled "Risk factors—Risks related to our business and industry—We are currently subject to, and may in the future become subject to additional, U.S., state and foreign laws and regulations imposing obligations on how we collect, store and process personal information. Our actual or perceived failure to comply with such obligations could harm our business. Ensuring compliance with such laws could also impair our efforts to maintain and expand our future customer base, and thereby decrease our revenue compliance with such laws could also impair our efforts to maintain and expand our future customer base, and thereby decrease our revenue.

In addition, in the United States and certain foreign jurisdictions, there have been and continue to be a number of healthcare-related legislative initiatives that have significantly affected the healthcare industry. These reform initiatives may, among other things, result in modifications to the aforementioned laws and/or the implementation of new laws affecting the healthcare industry.

Facilities

We currently lease 86,698 square feet of office, laboratory, and manufacturing space in San Diego, California under various leases that expire in 2022, 2024, 2025 and 2026. Additionally, we have executed a lease for our new headquarters and laboratory space consisting of 76,778 square feet with a target lease commencement date of April 2022 and will replace our current headquarters and a portion of our laboratory space. We believe that the facilities under our current leases are sufficient to meet our needs for the foreseeable future and that any additional space we may require will be available on commercially reasonable terms.

Environmental Matters

Our operations require the use of hazardous materials (including biological materials) which subject us to a variety of federal, state and local environmental and safety laws and regulations. Some of the regulations under the current regulatory structure provide for strict liability, holding a party potentially liable without regard to fault or negligence. We could be held liable for damages and fines as a result of our, or others', business operations should contamination of the environment or individual exposure to hazardous substances occur. We cannot predict how changes in laws or development of new regulations will affect our business operations or the cost of compliance.

Legal Proceedings

We are not currently a party to any material legal proceedings. We endeavor to avoid being involved in legal proceedings or investigations, which could have an adverse impact on our reputation, business and financial condition. We are not aware of any issued patents that belong to third parties that would preclude the sale or use of our products. From time to time, we may become involved in legal proceedings arising in the ordinary course of our business. Regardless of outcome, litigation can have an adverse impact on us due to defense and settlement costs, diversion of management resources, negative publicity, reputational harm and other factors.

MANAGEMENT

Executive Officers and Directors

The following table sets forth the names, ages and positions of our executive officers and directors as of May 1, 2021:

Name	Age	Position
Executive Officers:		
Andrew Spaventa	36	Chief Executive Officer and Chairperson of the Board
Eli Glezer, Ph.D.	52	Chief Scientific Officer
David Daly	59	President and Chief Operating Officer
Jorge Velarde	54	Senior Vice President, Corporate Development and Strategy
Daralyn Durie	53	General Counsel
Dalen Meeter	43	Vice President, Finance
Vincent Brancaccio	38	Vice President, Human Resources
Non-Employee Directors:		
David Barker, Ph.D.(1)(3)	79	Director
Andrew ElBardissi, M.D.*	39	Director
Kim Kamdar, Ph.D.(2)(3)	53	Director
Michael Pellini, M.D.(1)(2)	55	Lead Independent Director
Jason Ryan(1)(2)	57	Director

(1) Member of the audit committee
(2) Member of the compensation committee
(3) Member of the nominating and corporate governance committee
* Dr. ElBardissi intends to submit a resignation letter to resign from the Board effective immediately prior the effectiveness of the registration statement of which this prospectus forms a part

Executive Officers

Andrew Spaventa. Mr. Spaventa is a founder, has served as our Chief Executive Officer and has served on our Board since the Company was created in 2016. Mr. Spaventa has also served as managing partner at Axon Ventures since March 2014. Mr. Spaventa is also a founder of Truvian Sciences, a company created in 2015. He also serves as a member of the board of directors of Aspen Neuroscience. He is a member of the board of the non-profit San Diego Venture Group. Previously, from 2009 to 2013, Mr. Spaventa was a co-founder of ecoATM, which was acquired by Outerwall (Coinstar) in 2012. From 2013 to 2016, Mr. Spaventa was a consultant for Edico Genome, which was acquired by Illumina in 2018. Mr. Spaventa received a B.A. in political science and international relations from the University of California, San Diego and attended law school at the University of San Diego for one year. Mr. Spaventa also holds an M.B.A. from University of California, San Diego – Rady School of Management. We believe Mr. Spaventa's service as our Chief Executive Officer, his experience as a venture capital investor, his professional experience in the life science and genomics space, and his extensive understanding of our business, operations, and strategy qualify him to serve on our board of directors.

Eli Glezer, Ph.D. Dr. Glezer is a founder and has been our Chief Scientific Officer since founding the Company in 2016. Prior to joining the Company, Dr. Glezer was the Chief Technology Officer for Meso Scale Diagnostics, where he led the design of design and development of multi-array electrochemiluminescence technology and multiplexed immunoassays from concept to multiple products, from 1997 to 2016. Dr. Glezer received a B.S. in Mechanical Engineering with highest honors from the University of California, Berkeley and a Ph.D. from Harvard University in Applied Physics. Dr. Glezer holds over 60 issued U.S. patents.

David Daly. Mr. Daly has served as our President and Chief Operating Officer since February 2021. Prior to joining the Company, Mr. Daly was the chief executive officer of Thrive Earlier Detection Corp., a cancer detection and diagnostic company, from August 2019 to January 2021. Mr. Daly previously was the senior vice president and general manager of commercial operations for the Americas region at Illumina, Inc. from November 2017 to August 2019. Prior to Illumina, Mr. Daly was general manager and chief commercial officer at Foundation Medicine from December 2014 to August 2017, where he was responsible for all commercial functions, including sales, marketing, client services, payer relations and medical affairs. Previously, he led the oncology business unit at Life Technologies, served as chief commercial officer at Clarient, Inc., and held roles at Roche Diagnostics and Abbott Laboratories. Mr. Daly holds a B.A. in economics from the University of California, Irvine and an M.A. in economics from the University of California, Santa Barbara.

Jorge Velarde. Mr. Velarde has served as our Senior Vice President of Corporate Development and Strategy since October 2018. Mr. Velarde also served as Chief Executive Officer and President of BaseHealth, Inc., a company focused on developing an integrated health management platform combining genomic data- with clinical and behavioral analysis, from January 2014 until January 2015. Earlier in his career, Mr. Velarde was Vice President of Business Development at Illumina, Inc, a business development lead at Gen-Probe, Inc. and the scientific co-founder of Chugai Biopharmaceuticals. Mr. Velarde holds a B.S. in Molecular Biology and minor in Chemistry from Loyola University New Orleans and an M.B.A. from the University of California Irvine – Paul Merage School of Business.

Daralyn Durie. Ms. Durie has served as our General Counsel since March 2021. Ms. Durie is a co-founding partner of Durie Tangri, a leading litigation law firm, commencing in 2009. Ms. Durie previously was a partner at Keker & Van Nest and was an associate at the firm before that. Ms. Durie commenced her career as a clerk for the Honorable Douglas Ginsburg on the United States Court of Appeals for the District of Columbia Circuit. Ms. Durie is a fellow in the American College of Trial Lawyers, a past President of the Board of Directors of the Northern California Association of Business Trial Lawyers, a former co-chair of the Lawyer Representatives to the Ninth Circuit Judicial Conference, and a court-appointed Early Neutral Evaluator for the Northern District of California. Ms. Durie holds an A.B. in Human Biology and Comparative Literature from Stanford University, an M.A. in Comparative Literature from the University of California, Berkeley and a J.D. from the University of California, Berkeley.

Dalen Meeter. Mr. Meeter has served as our Vice President of Finance since December 2019. Prior to joining the Company, Mr. Meeter served in various finance positions at Illumina, Inc., including Senior Director, Finance, from September 2010 to November 2019. Prior to Illumina, Mr. Meeter held a variety of finance and accounting leadership positions at Websense and EMC Captiva Software. Mr. Meeter started his career at KPMG LLP in the Audit and Advisory practice. He holds a B.A. in Business Economics from the University of California, Santa Barbara, an M.B.A. from the Marshall School of Business at the University of Southern California, and is a licensed CPA in the state of California.

Vincent Brancaccio. Mr. Brancaccio has served as our Vice President of Human Resources since September 2019. Prior to joining the Company, Mr. Brancaccio served as Director of Global Compensation at NuVasive from May 2014 until August 2019. Mr. Brancaccio also serves as a consultant to PeopleTech Partners, a venture capital firm focused on the human resources space. Mr. Brancaccio holds a B.A. in Business Management and Economics from University of California, Santa Cruz and an M.B.A. from the Rady School of Management at the University of California, San Diego.

Non-Employee Directors

David L. Barker, Ph.D. Dr. Barker has served as a member of our Board since September 2016. Dr. Barker has served as a member of the board of directors of AmideBio since August 2011, Bionano Genomics (Nasdaq: BNGO) since May 2010, and Aspen Neuroscience since October 2018. He is also a scientific advisor to Luna DNA. He served as Vice President and Chief Scientific Officer at Illumina, Inc., from 2000 to 2007, and on the

Illumina scientific advisory board until May 2016. He was previously on the boards of NextBio, which was acquired by Illumina in 2013, ProteinSimple, which was acquired by Bio-Techne in 2014, Zephyrus Biosciences, Inc., acquired by Bio-Techne in 2016, IntegenX, acquired by Thermo Fisher Scientific in 2018, and Integrated Diagnostics, acquired by Biodesix in 2018. In his academic career, Dr. Barker conducted interdisciplinary research in neurobiology as a postdoctoral fellow at Harvard Medical School, Assistant Professor at the University of Oregon and Associate Professor at Oregon State University. Dr. Barker holds a BS with honors in Chemistry from the California Institute of Technology and a PhD in Biochemistry from Brandeis University. We believe that Dr. Barker's extensive experience in managing and leading early stage and established companies within the clinical diagnostic and biotechnology industries qualifies him to serve as a member of our Board.

Andrew ElBardissi, M.D. Dr. ElBardissi has served as a member of our board of directors since June 2019. Dr. ElBardissi has been a Partner at Deerfield Management, a venture capital firm, since January 2017. Prior to his position at Deerfield, Dr. ElBardissi served as a Principal at Longitude Capital Management Co., LLC, a private investment firm that focuses on venture growth investments in drug development and medical technology, from January 2014 to January 2017. Prior to that, Dr. ElBardissi served as an Associate in J.P. Morgan's Healthcare Investment Banking practice from June 2011 to July 2013. Dr. ElBardissi has served on the board of Acutus Medical, Inc., (Nasdaq: AFIB) since July 2017. Dr. ElBardissi received a B.S. in biology, (Phi Beta Kappa) from the Schreyer Honors College at the Pennsylvania State University, an M.P.H. in quantitative methods from Harvard University, an M.B.A. from Harvard Business School and an M.D. from the Mayo Clinic College of Medicine. We believe Dr. ElBardissi is qualified to serve on our board of directors due to his background as a practicing physician, his extensive experience as an investor in medical technology and life science companies and as a member of the boards of directors of multiple private and public companies.

Kim Kamdar, Ph.D. Dr. Kamdar has served as a member of our Board since May 2017. She has been a Partner at Domain Associates, LLC since 2011. Dr. Kamdar is currently Chair of the Board of Directors of Seraphina Therapeutics and Truvian Sciences, Inc., and serves on the board of directors of EvoFem Biosciences, Inc. (Nasdaq: EVFM) and Obalon Therapeutics, Inc. (Nasdaq: OBLN). She served on the board of Syndax Pharmaceuticals (Nasdaq: SNDX) from September 2006 to May 2017. She also serves on the board of directors of several private companies including Epic Sciences, Sera Prognostics, Alume and Pleno. Formerly, Dr. Kamdar was a Kauffman Fellow with MPM Capital (MPM). Prior to joining MPM, Dr. Kamdar was a research director at Novartis, where she built and led a research team that focused on the biology, genetics and genomics of model organisms. Dr. Kamdar is the author of ten papers as well as the inventor on seven patents. Dr. Kamdar serves as an advisory board member of Dr. Eric Topol's NIH supported Clinical and Translational Science Award for Scripps Medicine and is also on the non-profit board for Access Youth Academy, an organization that is transforming the lives of underserved youth through academic enrichment, health and wellness, social responsibility and leadership through squash. Dr. Kamdar received her B.A. from Northwestern University and her Ph.D. in biochemistry and genetics from Emory University. We believe Dr. Kamdar is qualified to serve on our Board of Directors based on her extensive experience working and serving on the boards of directors of life sciences companies and her experience working in the venture capital industry.

Michael Pellini, M.D. Dr. Pellini has served as a member of our Board of Directors since April 2017. Dr. Pellini has been a Managing Partner at Section 32, LLC, a venture capital firm, since December 2017. Dr. Pellini previously served as chairman of the board of directors, chief executive officer and president at Foundation Medicine, Inc., a molecular information company, from April 2011 until 2018 when it was acquired by F. Hoffmann-La Roche Ltd. From 2008 to 2011, Dr. Pellini was the president and chief operating officer of Clarient, Inc., which was acquired by a General Electric Healthcare Company (NYSE:GE) in 2010. Dr. Pellini currently serves on the board of directors of Tango Therapeutics, Vineti, Cradle Genomics, Sema4, Octave Biosciences and Adaptive Biotechnologies Corporation (Nasdaq: ADPT). Dr. Pellini received a B.A. from Boston College, an M.B.A. from Drexel University and an M.D. from Jefferson Medical College, now the Sidney Kimmel Medical College of Thomas Jefferson University. Dr. Pellini's qualifications to sit on our Board of Directors include his extensive leadership, executive, managerial, business and diagnostic company experience, along with his years of industry experience in the development and commercialization of life

sciences products and services. We believe Dr. Pellini's background as a medical doctor, executive, extensive experience as a venture capital investor and as a member of the boards of directors of private and public companies qualify him to serve on our board of directors.

Jason Ryan. Mr. Ryan has served as a member of our Board of Directors since April 2021. Prior to joining the Board of Directors, Mr. Ryan served as Chief Operating and Financial Officer of Magenta Therapeutics, Inc. (Nasdaq: MGTA) from January 2019 to October 2020. Prior to joining Magenta Therapeutics, Inc., Mr. Ryan previously served as Chief Financial Officer of Foundation Medicine, Inc., which became a wholly-owned subsidiary of Roche Holdings, Inc., from March 2015 to November 2018. Prior to his position as Chief Financial Officer of Foundation Medicine, Inc., Mr. Ryan served in various other finance roles at Foundation Medicine. Prior to joining Foundation Medicine, Inc., Mr. Ryan led the finance and strategic planning functions of various other life science companies including, Taligen Therapeutics, Inc., Codon Devices Inc. and Genomics Collaborative, Inc. Mr. Ryan also served on the board of directors of ArcherDX, Inc. (which was acquired by Invitae Corporation (NYSE: NVTA)) from April 2020 to October 2020. He began his career at Deloitte & Touche. Mr. Ryan holds a B.S. in economics from Bates College and an M.B.A. from Babson College, and earned a C.P.A. in Massachusetts. We believe that Mr. Ryan is qualified to serve on our board of directors because of his extensive finance experience and his leadership experience in the life sciences industry.

Family Relationships

There are no family relationships among any of our executive officers or directors.

Board Composition

Our board of directors is currently authorized to have five members and currently consists of five members, who were elected pursuant to the amended and restated voting agreement that we entered into with certain holders of our common stock and certain holders of our convertible preferred stock and the related provisions of our amended and restated certificate of incorporation.

The provisions of this voting agreement will terminate upon the completion of this offering, after which there will be no further contractual obligations regarding the election of our directors. Our directors hold office until their successors have been elected and qualified or appointed, or the earlier of their death, resignation or removal.

In accordance with the terms of our amended and restated certificate of incorporation and amended and restated bylaws that will be in effect upon the completion of this offering, our board of directors will be divided into three classes with staggered three-year terms. At each annual meeting of stockholders, the successors to directors whose terms then expire will be elected to serve from the time of election and qualification until the third annual meeting following election. Our directors will be divided among the three classes as follows:

- the Class I directors will be and , and their terms will expire at the annual meeting of stockholders to be held in 2022;
- the Class II directors will be and , and their terms will expire at the annual meeting of stockholders to be held in 2023; and
- the Class III directors will be and , and their terms will expire at the annual meeting of stockholders to be held in 2024.

Directors in a particular class will be elected for three-year terms at the annual meeting of stockholders in the year in which their terms expire. As a result, only one class of directors will be elected at each annual meeting of our stockholders, with the other classes continuing for the remainder of their respective three-year terms. Each director's term continues until the election and qualification of his or her successor, or the earlier of his or her death, resignation or removal.

Our amended and restated certificate of incorporation and amended and restated bylaws that will be in effect upon the completion of this offering provide that only our board of directors can fill vacant directorships, including newly-created seats. Any additional directorships resulting from an increase in the authorized number of directors would be distributed pro rata among the three classes so that, as nearly as possible, each class would consist of one-third of the authorized number of directors.

The classification of our board of directors may have the effect of delaying or preventing changes in our control or management. See the section titled “Description of Capital Stock — Anti-Takeover Provisions — Certificate of Incorporation and Bylaw Provisions” elsewhere in this prospectus.

Director Independence

Upon the completion of this offering, we anticipate that our common stock will be listed on the Nasdaq Global Market. Under the rules of Nasdaq, independent directors must comprise a majority of a listed company’s board of directors within one year of the completion of this offering. In addition, the rules of Nasdaq require that, subject to specified exceptions and phase-in periods, each member of a listed company’s audit, compensation and nominating and corporate governance committees be independent. Audit committee members and compensation committee members must also satisfy the independence criteria set forth in Rule 10A-3 and Rule 10C-1, respectively, under the Securities Exchange Act of 1934, as amended (the Exchange Act). Under the rules of Nasdaq, a director will only qualify as an “independent director” if, in the opinion of that company’s board of directors, that person does not have a relationship that would interfere with the exercise of independent judgment in carrying out the responsibilities of a director.

To be considered to be independent for purposes of Rule 10A-3 and under the rules of Nasdaq, a member of an audit committee of a listed company may not, other than in his or her capacity as a member of the audit committee, the board of directors or any other board committee: (i) accept, directly or indirectly, any consulting, advisory or other compensatory fee from the listed company or any of its subsidiaries or (ii) be an affiliated person of the listed company or any of its subsidiaries.

To be considered independent for purposes of Rule 10C-1 and under the rules of Nasdaq, the board of directors must affirmatively determine that each member of the compensation committee is independent, including a consideration of all factors specifically relevant to determining whether the director has a relationship to the company which is material to that director’s ability to be independent from management in connection with the duties of a compensation committee member, including, but not limited to: (i) the source of compensation of such director, including any consulting, advisory or other compensatory fee paid by the company to such director and (ii) whether such director is affiliated with the company, a subsidiary of the company or an affiliate of a subsidiary of the company.

Our board of directors undertook a review of its composition, the composition of its committees and the independence of our directors and considered whether any director has a material relationship with us that could compromise his or her ability to exercise independent judgment in carrying out his or her responsibilities. Based upon information requested from and provided by each director concerning his background, employment and affiliations, including family relationships, our board of directors has determined that Drs. Barker, ElBardissi, Kamdar, Pellini, and Ryan, representing five of our six directors, do not have a relationship that would interfere with the exercise of independent judgment in carrying out the responsibilities of a director and that each of these directors is “independent” as that term is defined under the rules of Nasdaq, including in the case of all the members of our audit committee, the independence criteria set forth in Rule 10A-3 under the Exchange Act, and in the case of all the members of our compensation committee, the independence criteria set forth in Rule 10C-1 under the Exchange Act.

In making these determinations, our board of directors considered the current and prior relationships that each non-employee director has with our company and all other facts and circumstances our board of directors

deemed relevant in determining his or her independence, including the beneficial ownership of our capital stock by each non-employee director, and the transactions involving them described in the section titled "Certain Relationships and Related Party Transactions" elsewhere in this prospectus. There are no family relationships among any of our directors or executive officers.

Board Leadership Structure

Our board of directors has combined the roles of Chairperson and Chief Executive Officer, who is Andrew Spaventa. Our Board has determined that we would be best served by having a Chairperson with deep operational and strategic knowledge of our business. Our Board has also appointed Dr. Pellini as our Lead Independent Director. Our Board has determined that we would be best served by also having a lead independent director to be responsible for conducting sessions with the independent directors as part of every Board meeting, calling special meetings of the independent directors and chairing all meetings of the independent directors.

Role of the Board in Risk Oversight

One of the key functions of our board of directors is informed oversight of our risk management process. In particular, our board of directors is responsible for monitoring and assessing strategic risk exposure. Our executive officers are responsible for the day-to-day management of the material risks we face. Our board of directors administers its oversight function directly as a whole. Our board of directors will also administer its oversight through various standing committees, which will be constituted prior to the completion of this offering, that address risks inherent in their respective areas of oversight. For example, our audit committee will be responsible for overseeing the management of risks associated with our financial reporting, accounting and auditing matters; our compensation committee will oversee the management of risks associated with our compensation policies and programs; and our nominating and corporate governance committee will oversee the management of risks associated with director independence, conflicts of interest, composition and organization of our board of directors and director succession planning.

Board Committees

Our board of directors will establish an audit committee, a compensation committee and a nominating and corporate governance committee prior to the completion of this offering. Our board of directors may establish other committees to facilitate the management of our business. Our board of directors and its committees will set schedules for meeting throughout the year and can also hold special meetings and act by written consent from time to time, as appropriate. Our board of directors expects to delegate various responsibilities and authority to committees as generally described below. The committees will regularly report on their activities and actions to the full board of directors. Each member of each committee of our board of directors will qualify as an independent director in accordance with the listing standards of Nasdaq. Each committee of our board of directors will have a written charter approved by our board of directors. Upon the completion of this offering, copies of each charter will be posted on our website at www.singulargenomics.com under the Investor Relations section. The inclusion of our website address in this prospectus does not include or incorporate by reference the information on our website into this prospectus. Members will serve on these committees until their resignation or until otherwise determined by our board of directors.

Audit Committee

The members of our audit committee are Mr. Ryan and Drs. Barker and Pellini, each of whom can read and understand fundamental financial statements. Each member of our audit committee is independent under the rules and regulations of the SEC and the listing standards of Nasdaq applicable to audit committee members. Mr. Ryan is the chair of the audit committee. Our board of directors has determined that Mr. Ryan qualifies as an audit committee financial expert within the meaning of SEC regulations and each member meets the financial sophistication requirements of Nasdaq.

Our audit committee will assist our board of directors with its oversight of the integrity of our financial statements; our compliance with legal and regulatory requirements; the qualifications, independence and performance of the independent registered public accounting firm; the design and implementation of our risk assessment and risk management. Among other things, our audit committee is responsible for reviewing and discussing with our management the adequacy and effectiveness of our disclosure controls and procedures. The audit committee also will discuss with our management and independent registered public accounting firm the annual audit plan and scope of audit activities, scope and timing of the annual audit of our financial statements, and the results of the audit, quarterly reviews of our financial statements and, as appropriate, initiates inquiries into certain aspects of our financial affairs. Our audit committee is responsible for establishing and overseeing procedures for the receipt, retention and treatment of any complaints regarding accounting, internal accounting controls or auditing matters, as well as for the confidential and anonymous submissions by our employees of concerns regarding questionable accounting or auditing matters. In addition, our audit committee has direct responsibility for the appointment, compensation, retention and oversight of the work of our independent registered public accounting firm. Our audit committee has sole authority to approve the hiring and discharging of our independent registered public accounting firm, all audit engagement terms and fees and all permissible non-audit engagements with the independent auditor. Our audit committee will review and oversee all related person transactions in accordance with our policies and procedures.

Our audit committee will operate under a written charter that satisfies the applicable rules of the SEC and the listing standards of Nasdaq. We believe that the composition of our audit committee meets the requirements for independence under current Nasdaq and SEC rules and regulations.

Compensation Committee

The members of our compensation committee are Drs. Pellini and Kamdar and Mr. Ryan. Dr. Pellini is the chair of the compensation committee. Each member of our compensation committee is independent under the rules and regulations of the SEC and the listing standards of Nasdaq applicable to compensation committee members. Our compensation committee will assist our board of directors with its oversight of the forms and amount of compensation for our executive officers (including officers reporting under Section 16 of the Exchange Act), the administration of our equity and non-equity incentive plans for employees and other service providers and certain other matters related to our compensation programs. Our compensation committee, among other responsibilities, evaluates the performance of our chief executive officer and, in consultation with him, evaluates the performance of our other executive officers (including officers reporting under Section 16 of the Exchange Act).

Our compensation committee will operate under a written charter that satisfies the applicable rules of the SEC and the listing standards of Nasdaq. We believe that the composition of our compensation committee meets the requirements for independence under current Nasdaq and SEC rules and regulations.

Nominating and Corporate Governance Committee

The members of our nominating and corporate governance committee are Drs. Kamdar and Barker. Each member of our nominating and governance committee is independent under the rules and regulations of the SEC and the listing standards of Nasdaq applicable to nominating and governance committee members. Dr. Kamdar is the chair of the nominating and corporate governance committee. Our nominating and corporate governance committee will assist our board of directors with its oversight of and identification of individuals qualified to become members of our board of directors, consistent with criteria approved by our board of directors, and selects, or recommends that our board of directors selects, director nominees; develops and recommends to our board of directors a set of corporate governance guidelines and oversees the evaluation of our board of directors.

Our nominating and corporate governance committee will operate under a written charter that satisfies the applicable rules of the SEC and the listing standards of Nasdaq. We believe that the composition of our

nominating and corporate governance committee meets the requirements for independence under current Nasdaq and SEC rules and regulations.

Under our corporate governance guidelines, which will become effective upon the closing of this offering, our nominating and corporate governance committee will consider various factors when evaluating the composition of our board of directors, including in no particular order of importance: (a) various and relevant career experience, (b) relevant skills, such as an understanding of the Company's business, (c) financial expertise, (d) diversity, including race, ethnicity, gender, national origin, and geography and (e) local and community ties.

Compensation Committee Interlocks and Insider Participation

None of our executive officers currently serves, or in the past fiscal year has served, as a member of the board of directors or compensation committee (or other board committee performing equivalent functions or, in the absence of any such committee, the entire board of directors) of any entity that has one or more executive officers serving on our board of directors or compensation committee.

Code of Conduct

Our board of directors will adopt a Code of Conduct, or the Code of Conduct, prior to the completion of this offering. The Code of Conduct will apply to all of our employees, officers, directors, contractors, consultants, suppliers and agents. Upon the completion of this offering, the full text of the Code of Conduct will be posted on our website at www.singulargenomics.com under the Investor Relations section. We intend to disclose future amendments to, or waivers of, the Code of Conduct, as and to the extent required by SEC regulations, at the same location on our website identified above or in public filings. Information contained on our website is not incorporated by reference into this prospectus, and you should not consider information contained on our website to be part of this prospectus or in deciding whether to purchase shares of our common stock.

Director Compensation

Prior to this offering, we have not implemented a formal policy with respect to compensation payable to our non-employee directors. Other than as set forth in the table and described more fully below, we did not pay any compensation, including equity awards, to any of our non-employee directors in 2020. We have granted stock options to all of our non-employee directors. We also reimburse our directors for expenses associated with attending meetings of our board of directors and its committees. Following the completion of this offering, we expect to implement an annual cash and equity compensation program for our non-employee directors.

The following table presents the total compensation that we paid to Dr. ElBardissi and Dr. Kamdar, our non-employee directors who received compensation during the year ended December 31, 2020.

Name	Fees Earned or Paid in Cash ($)	Option Awards ($)(1)	All Other Compensation ($)	Total ($)
Andrew ElBardissi	—	$28,200 (2)	—	$28,200 (2)
Kim Kamdar	—	28,200 (2)	—	28,200 (2)

(1) In accordance with SEC rules, this column reflects the aggregate grant date fair value of option awards, calculated in accordance with ASC Topic 718 for stock-based compensation transactions. As of December 31, 2020, our non-employee directors held outstanding options to purchase the following number of shares of our common stock: Dr. Barker – 60,000; Dr. ElBardissi – 30,000; Dr. Kamdar – 30,000; Dr. Pellini – 154,939.

(2) Dr. ElBardissi and Dr. Kamdar each received an option grant for 30,000 shares of our common stock on March 19, 2020, which vest in 12 equal monthly installments commencing on the date of grant, subject to their continued service with us through each such date.

Directors who are also our employees or officers receive no additional compensation for their service as directors. See the section titled "Executive Compensation" elsewhere in this prospectus for additional information about the compensation of our employee directors.

EXECUTIVE COMPENSATION

Summary Compensation Table

The following table shows information regarding the compensation of our named executive officers for the fiscal year ended December 31, 2020.

Name and Principal Position	Year	Salary ($)	Bonus ($)	Stock Awards ($)	Option Awards ($)	Non-Equity Incentive Plan Compensation ($)	Nonqualified Deferred Compensation Earnings ($)	All Other Compensation ($)	Total ($)
Andrew Spaventa	2020	$365,750	$108,811	—	—	—	—	—	$474,561
Chief Executive Officer									
Eli Glezer	2020	313,500	67,119	—	—	—	—	—	$380,119
Chief Scientific Officer									
Dalen Meeter	2020	269,167	45,900	—	—	—	—	—	$315,067
Vice President, Finance									

Narrative Explanation of Compensation Arrangements with Our Named Executive Officers

Base Salaries and Annual Incentive Opportunities

The base salaries of all of our named executive officers are reviewed from time to time and adjusted when our board of directors or compensation committee determines an adjustment is appropriate. For our 2020 fiscal year, the base salaries for Mr. Spaventa, Dr. Glezer, and Mr. Meeter were $365,750, $313,500 and $270,000, respectively.

Each of our named executive officers is eligible to earn an incentive bonus for each of our fiscal years, with such bonus awarded based on individual performance goals, as well as corporate goals related to our product development and other goals established by our chief executive officer and approved by our board of directors. During our fiscal year ended December 31, 2020, our named executive officers were eligible to earn cash incentive bonuses based on a combination of corporate and individual goals. We require that participants continue to be employed through the payment date to receive a bonus. For our 2020 fiscal year, the target bonus rate (as a percentage of base salary) was 35%, 25%, and 20%, for Mr. Spaventa, Dr. Glezer, and Mr. Meeter, respectively.

Equity Compensation

We offer stock options to our employees, including our named executive officers, as the long-term incentive component of our compensation program. Our stock options allow our employees to purchase shares of our common stock at a price equal to the fair market value of our common stock on the date of grant. In the past, our board of directors or compensation committee has determined the fair market value of our common stock based on inputs including valuation reports prepared by third-party valuation firms. Generally, our stock options granted to new hires have vested as to 25% of the total number of option shares on the first anniversary of the award and in equal monthly installments over the following 36 months.

Employee Benefits and Perquisites

Our named executive officers are eligible to participate in our health and welfare plans to the same extent as are full-time employees generally. We generally do not provide our named executive officers with perquisites or other personal benefits.

Retirement Benefits

We have established a 401(k) tax-deferred savings plan through Trinet, which permits participants, including our named executive officers, to make contributions by salary deduction pursuant to Section 401(k) of

the Internal Revenue Code. We are responsible for administrative costs of the 401(k) plan. We may, at our discretion, make matching contributions to the 401(k) plan. Commencing in October 2020, the Company approved matching contributions of 2% of employee contribution.

Employment Arrangements with Named Executive Officers

We entered into offer letters with each of our named executive officers setting forth the initial terms of the officer's employment with us and providing that the officer's employment will be "at will" and may be terminated at any time. We also entered into amended employment letter agreements with each of Mr. Spaventa and Dr. Glezer in 2019, pursuant to which they are each eligible to receive certain severance and change in control benefits, as described in "Severance and Change in Control Benefits" below.

Outstanding Equity Awards at 2020 Fiscal Year-End

The following table sets forth information regarding each unexercised option held by each of our named executive officers as of December 31, 2020.

The vesting schedule applicable to each outstanding award is described in the footnotes to the table below.

In general, options granted to our named executive officers are immediately exercisable with respect to all of the option shares, subject to our repurchase right for the lower of the option exercise price or the fair market value of the shares in the event that the executive's service terminates before vesting in such shares.

Name	Number of Securities Underlying Unexercised Options Vested (#)	Number of Securities Underlying Unexercised Options Unvested (#)	Option Exercise Price ($)	Option Expiration Date
Andrew Spaventa	678,750(1)(2)	2,036,250(1)(2)	0.63	12/16/2029
Eli Glezer	302,500(3)	907,500(3)	0.63	12/16/2029
Dalen Meeter	40,000(4)	120,000(4)	0.63	12/16/2029

(1) The option vests in 48 substantially equal monthly installments beginning on December 17, 2019, provided Mr. Spaventa remains in continuous service through each such vesting date. Additionally, if Mr. Spaventa is involuntarily terminated more than three months prior to a change in control, the option will accelerate with respect to 12 months of vesting. Further, the option will become fully vested in the event of a change in control if Mr. Spaventa remains employed by us at the time of the change in control or is involuntarily terminated on or less than three months prior to the change in control.

(2) Pursuant to the option transfer agreement dated January 29, 2020, the option granted to Mr. Spaventa was transferred to the Andrew K. Spaventa Living Trust.

(3) The option vests in 48 substantially equal monthly installments beginning on December 17, 2019, provided Dr. Glezer remains in continuous service through each such vesting date. Additionally, if Dr. Glezer is involuntarily terminated more than three months prior to a change in control, the option will accelerate with respect to six months of vesting. Further, the option will become fully vested if Dr. Glezer is involuntarily terminated in connection with, within three months prior to, or within 18 months after, a change in control, subject to certain exceptions if Dr. Glezer is offered continued employment with the acquirer.

(4) 25% of the option vested on December 4, 2020, and the remaining 75% of the option vests in 36 substantially equal monthly installments beginning on January 4, 2021, provided Mr. Meeter remains in continuous service through each such vesting date.

Severance and Change in Control Benefits

The options to purchase shares of our common stock held by Mr. Spaventa and Dr. Glezer are eligible for vesting acceleration in connection with certain involuntary terminations of their employment and, in the case of Mr. Spaventa, full vesting acceleration in the event we are subject to a change in control prior to his termination of employment, as more fully described above in the "Outstanding Equity Awards at 2020 Fiscal Year-End" table.

Pursuant to their amended employment agreements, each of Mr. Spaventa and Dr. Glezer are eligible to receive severance benefits upon an involuntary termination of their employment with us, provided they execute a release of all claims against us. Mr. Spaventa is eligible to receive severance consisting of 12 months of his base salary, a prorated portion of his target bonus and 12 months of company-paid continued benefits coverage is he is subject to an involuntary termination. Dr. Glezer is eligible to receive severance consisting of six months of his base salary, a prorated portion of his target bonus and six months of company-paid continued benefits coverage

Equity Plans

2021 Equity Incentive Plan

Our board of directors intends to adopt our 2021 Plan prior to this offering, and it will be submitted to our stockholders for approval. We expect that our 2021 Plan will become effective immediately on adoption although no awards will be made under it until the effective date of the registration statement of which this prospectus is a part. Our 2021 Plan is intended to replace our 2016 Plan. However, awards outstanding under our 2016 Plan will continue to be governed by their existing terms. Although not yet adopted, we expect that our 2021 Plan will have the features described below.

Share Reserve. The number of shares of our common stock available for issuance under our 2021 Plan will equal the sum of shares plus up to shares remaining available for issuance under, or issued pursuant to or subject to awards granted under, our 2016 Plan. The number of shares reserved for issuance under our 2021 Plan will be increased automatically on the first business day of each of our fiscal years, commencing in 2022 and ending in 2031, by a number equal to the smallest of:

- shares;
- % of the shares of common stock outstanding on the last business day of the prior fiscal year; or
- the number of shares determined by our board of directors.

In general, to the extent that any awards under our 2021 Plan are forfeited, terminate, expire or lapse without the issuance of shares, or if we repurchase the shares subject to awards granted under our 2021 Plan, those shares will again become available for issuance under our 2021 Plan, as will shares applied to pay the exercise or purchase price of an award or to satisfy tax withholding obligations related to any award.

Administration. The compensation committee of our board of directors will administer our 2021 Plan. The compensation committee will have complete discretion to make all decisions relating to our 2021 Plan and outstanding awards, including repricing outstanding options and modifying outstanding awards in other ways.

Eligibility. Employees, non-employee directors, consultants and advisors will be eligible to participate in our 2021 Plan.

Under our 2021 Plan, the aggregate grant date fair value of awards granted to our non-employee directors may not exceed $ in any one fiscal year, except that the grant date fair value of awards granted to newly appointed non-employee directors may not exceed $ in the fiscal year in which such non-employee director is initially appointed to our board of directors.

Types of Awards. Our 2021 Plan will provide for the following types of awards:

- incentive and nonstatutory stock options;
- stock appreciation rights;
- restricted shares; and
- restricted stock units.

Options and Stock Appreciation Rights. The exercise price for options granted under our 2021 Plan may not be less than 100% of the fair market value of our common stock on the grant date. Optionees will be permitted to pay the exercise price in cash or, with the consent of the compensation committee:

- with shares of common stock that the optionee already owns;
- by an immediate sale of shares through a broker approved by us;
- by instructing us to withhold a number of shares having an aggregate fair market value that does not exceed the exercise price; or
- by other methods permitted by applicable law.

An optionee who exercises a stock appreciation right receives the increase in value of our common stock over the base price. The base price for stock appreciation rights may not be less than 100% of the fair market value of our common stock on the grant date. The settlement value of a stock appreciation right may be paid in cash, shares of our common stock or a combination.

Options and stock appreciation rights vest as determined by the compensation committee. In general, they will vest over a four-year period following the date of grant. Options and stock appreciation rights expire at the time determined by the compensation committee but in no event more than ten years after they are granted. These awards generally expire earlier if the participant's service terminates earlier.

Restricted Shares and Stock Units. Restricted shares and stock units may be awarded under our 2021 Plan in return for any lawful consideration, and participants who receive restricted shares or stock units generally are not required to pay cash for their awards. In general, these awards will be subject to vesting. Vesting may be based on length of service, the attainment of performance-based milestones or a combination of both, as determined by the compensation committee.

Corporate Transactions. In the event we are a party to a merger, consolidation or certain change in control transactions, outstanding awards granted under our 2021 Plan, and all shares acquired under our 2021 Plan, will be subject to the terms of the definitive transaction agreement (or, if there is no such agreement, as determined by our compensation committee). Unless an award agreement provides otherwise, such treatment may include any of the following with respect to each outstanding award:

- the continuation, assumption or substitution of an award by a surviving entity or its parent;
- the cancellation of an award without payment of any consideration;
- the cancellation of the vested portion of an award (and any portion that becomes vested as of the effective time of the transaction) in exchange for a payment equal to the excess, if any, of the value that the holder of each share of our common stock receives in the transaction over (if applicable) the exercise price otherwise payable in connection with the award; or
- the assignment of any reacquisition or repurchase rights held by us in respect of an award of restricted shares to the surviving entity or its parent (with proportionate adjustments made to the price per share to be paid upon exercise of such rights).

The compensation committee is not required to treat all awards, or portions thereof, in the same manner.

The vesting of an outstanding award may be accelerated by the administrator upon the occurrence of a change in control, whether or not the award is to be assumed or replaced in the transaction, or in connection with a termination of service following a change in control transaction.

A change in control includes:

- any person acquiring beneficial ownership of more than 50% of our total voting power;

- the sale or other disposition of all or substantially all of our assets; or
- our merger or consolidation after which our voting securities represent 50% or less of the total voting power of the surviving or acquiring entity.

Changes in Capitalization. In the event of certain changes in our capital structure without our receipt of consideration, such as a stock split, reverse stock split or dividend paid in common stock, proportionate adjustments will automatically be made to:

- the maximum number and kind of shares available for issuance under our 2021 Plan, including the maximum number and kind of shares that may be issued upon the exercise of incentive stock options;
- the maximum number and kind of shares covered by, and exercise price, base price or purchase price, if any, applicable to each outstanding stock award; and
- the maximum number and kind of shares by which the share reserve may increase automatically each year.

In the event that there is a declaration of an extraordinary dividend payable in a form other than our common stock in an amount that has a material effect on the price of our common stock, a recapitalization, a spin-off or a similar occurrence, the compensation committee may make such adjustments to any of the foregoing as it deems appropriate, in its sole discretion.

Amendments or Termination. Our board of directors may amend, suspend or terminate our 2021 Plan at any time. If our board of directors amends our 2021 Plan, it does not need stockholder approval of the amendment unless required by applicable law, regulation or rules. Our 2021 Plan will terminate automatically 10 years after the later of the date when our board of directors adopted our 2021 Plan or approved the latest share increase that was also approved by our stockholders.

2016 Stock Plan

Our board of directors adopted our 2016 Stock Plan in September, 2016, and it was approved by our stockholders on September 19, 2016. No further awards will be made under our 2016 Plan after this offering; however, awards outstanding under our 2016 Plan will continue to be governed by their existing terms.

Share Reserve. As of March 31, 2021, we have reserved 11,528,297 shares of our common stock for issuance under our 2016 Plan, all of which may be issued as incentive stock options. As of March 31, 2021, options to purchase 4,475,799 shares of our common stock, at exercise prices ranging from $0.10 to $8.95 per share, or a weighted-average exercise price of $3.05 per share were outstanding under our 2016 Plan, and 934,124 shares of our common stock remained available for future issuance. Unissued shares subject to awards that expire or are cancelled, shares reacquired by us and shares withheld in payment of the purchase price or exercise price of an award or in satisfaction of withholding taxes will again become available for issuance under our 2016 Plan or, following consummation of this offering, under our 2021 Plan.

Administration. Our board of directors has administered our 2016 Plan since its adoption; however, following this offering, the compensation committee of our board of directors will generally administer our 2016 Plan. The administrator has complete discretion to make all decisions relating to our 2016 Plan and outstanding awards.

Eligibility. Employees, non-employee members of our board of directors and consultants are eligible to participate in our 2016 Plan. However, only employees are eligible to receive incentive stock options.

Types of Awards. Our 2016 Plan provides for the following types of awards granted with respect to shares of our common stock:

- incentive and nonstatutory stock options to purchase shares of our common stock; and
- direct award or sale of shares of our common stock, including restricted shares.

Options. The exercise price for options granted under our 2016 Plan is determined by our board of directors, but may not be less than 100% of the fair market value of our common stock on the grant date. Optionees may pay the exercise price in cash or cash equivalents or by one, or any combination of, the following forms of payment, as permitted by the administrator in its sole discretion:

- surrender of shares of common stock that the optionee already owns;
- delivery of a full-recourse promissory note, with the option shares pledged as security against the principal and accrued interest on the note;
- an immediate sale of the option shares through a company-approved broker, if the shares of our common stock are publicly traded;
- surrendering a number of vested shares subject to the option having an aggregate fair market value no greater than the aggregate exercise price, or the sum of such exercise price plus all or a portion of the minimum amount required to be withheld under applicable law; or
- other methods permitted by the Delaware General Corporation Law, as amended.

Options vest as determined by the administrator. In general, we have granted options that vest over a four-year period. Options expire at the time determined by the administrator, but in no event more than ten years after they are granted, and generally expire earlier if the optionee's service terminates.

Restricted Shares. Restricted shares may be awarded or sold under our 2016 Plan in return for cash or cash equivalents or, as permitted by the administrator in its sole discretion, in exchange for services rendered to us, by delivery of a full-recourse promissory note or through any other means permitted by applicable law. Restricted shares vest as determined by the administrator.

Corporate Transactions. In the event that we are a party to a merger or consolidation or in the event of a sale of all or substantially all of our stock or assets, awards granted under our 2016 Plan will be subject to the agreement governing such transaction or, in the absence of such agreement, in the manner determined by the administrator. Such treatment may include, without limitation, one or more of the following with respect to outstanding awards:

- the continuation, assumption or substitution of an award by the surviving entity or its parent;
- cancellation of the vested portion of the award in exchange for a payment equal to the excess, if any, of the value of the shares subject to the award over any exercise price per share applicable to the award;
- cancellation of the award without payment of any consideration;
- suspension of the optionee's right to exercise the option during a limited period of time preceding the completion of the transaction; or
- termination of any right the optionee has to exercise the option prior to vesting in the shares subject to the option.

The administrator is not obligated to treat all awards in the same manner. The administrator has the discretion, at any time, to provide that an award under our 2016 Plan will vest on an accelerated basis in connection with a corporate transaction or to amend or modify an award so long as such amendment or modification is not inconsistent with the terms of the 2016 Plan or would not result in the impairment of a participant's rights without the participant's consent.

Changes in Capitalization. In the event of certain specified changes in the capital structure of our common stock, such as a combination or consolidation the outstanding stock into a lesser number of shares, the declaration of a stock dividend payable in shares, a reclassification or any other increase or decrease in the number of issued shares of stock effective without receipt of consideration by us, proportionate adjustments will

automatically be made in (i) each of the number and kind of shares available for future grants under our 2016 Plan, (ii) the number and kind of shares covered by each outstanding option and all restricted shares, (iii) the exercise price per share subject to each outstanding option and the purchase price applicable to each outstanding right to purchase shares, and (iv) any repurchase price applicable to shares granted under our 2016 Plan. In the event of an extraordinary cash divided that has a material effect on the fair market value of our common stock, a recapitalization, spin-off or other similar occurrence, the administrator at its sole discretion may make appropriate adjustments to one or more of the items described above.

Amendments or Termination. The administrator may at any time amend, suspend or terminate our 2016 Plan, subject to stockholder approval in the case of an amendment if the amendment increases the number of shares available for issuance or materially changes the class of persons eligible to receive incentive stock options. Our 2016 Plan will terminate automatically ten years after the later of the date when our board of directors adopted the plan or the date when our board of directors most recently approved an increase in the number of shares reserved thereunder which was also approved by our stockholders, provided, however, that in any event, it will terminate upon the completion of this offering, but as noted above, awards outstanding under our 2016 Plan will remain outstanding and will continue to be governed by their existing terms.

Employee Stock Purchase Plan

General. We expect that our board of directors will adopt a 2021 ESPP prior to this offering. If adopted, our 2021 ESPP will be subsequently approved by our stockholders. We expect that our 2021 ESPP will become effective as of the effective date of the registration statement of which this prospectus is a part. Our 2021 ESPP is intended to qualify under Section 423 of the Internal Revenue Code. Although not yet adopted, we expect that our 2021 ESPP will have the features described below.

Share Reserve. shares of our common stock will be reserved for issuance under our 2021 ESPP. The number of shares reserved for issuance under our 2021 ESPP will automatically be increased on the first business day of each of our fiscal years, commencing in 2022 and ending in 2041, by a number equal to the least of:

- shares;
- % of the shares of common stock outstanding on the last business day of the prior fiscal year; or
- the number of shares determined by our board of directors.

The number of shares reserved under our 2021 ESPP will automatically be adjusted in the event of a stock split, stock dividend or a reverse stock split (including an adjustment to the per-purchase period share limit).

Administration. The compensation committee of our board of directors will administer our 2021 ESPP.

Eligibility. All of our employees will be eligible to participate if we employ them for more than 20 hours per week and for five or more months per year. Eligible employees may begin participating in our 2021 ESPP at the start of any offering period.

Offering Periods. Each offering period will last a number of months determined by the compensation committee, not to exceed 27 months. A new offering period will begin periodically, as determined by the compensation committee. Offering periods may overlap or may be consecutive. Unless otherwise determined by the compensation committee, two offering periods of six months' duration will begin in each year on and . However, if so determined by the compensation committee, the first offering period may start on the effective date of the registration statement related to this offering and will end on , 2021, with the first purchase date occurring on , 2021.

Amount of Contributions. Our 2021 ESPP will permit each eligible employee to purchase common stock through payroll deductions. Each employee's payroll deductions may not exceed % of the employee's cash

compensation. Each participant may purchase up to the number of shares determined by our board of directors on any purchase date, not to exceed shares. The value of the shares purchased in any calendar year may not exceed $25,000. Participants may withdraw their contributions at any time before stock is purchased.

Purchase Price. The price of each share of common stock purchased under our 2021 ESPP will not be less than 85% of the lower of the fair market value per share of common stock on the first day of the applicable offering period (or, in the case of the first offering period, the price at which one share of common stock is offered to the public in this offering) or the fair market value per share of common stock on the purchase date.

Other Provisions. Employees may end their participation in our 2021 ESPP at any time. Participation ends automatically upon termination of employment with us. If we experience a change in control, our 2021 ESPP will end and shares will be purchased with the payroll deductions accumulated to date by participating employees. Our board of directors or our compensation committee may amend or terminate our 2021 ESPP at any time.

CERTAIN RELATIONSHIPS AND RELATED PARTY TRANSACTIONS

The following is a description of transactions since January 1, 2018 to which we have been a party in which the amount involved exceeded $120,000 and in which any of our executive officers, directors or beneficial holders of more than 5% of our capital stock (or any immediate family member of, or person sharing the household with, any of these individuals or entities), which we collectively refer to as a related person, had or will have a direct or indirect material interest, other than compensation arrangements which are described in the section titled "Management—Director Compensation" and "Executive Compensation." We believe that all of these transactions were on terms as favorable as could have been obtained from unrelated third parties.

Sales of Securities

Convertible Notes Financing

In February 2021, we sold and issued approximately $130.5 million aggregate principal amount of 2021 Notes, which included $48.5 million sold and issued to certain related parties (prior investors, some affiliated with members of the Company's board of directors). The 2021 Notes accrue 6% interest per annum and will automatically convert into shares of our common stock in connection with the closing of this offering at a conversion price equal to the lower of (i) 80% of the initial public offering price per share set forth on the cover page of this prospectus and (ii) the price per share obtained by dividing $1.5 billion by the fully-diluted capitalization of the Company prior to this offering. In connection with this offering, assuming an initial public offering price of $ per share, which is the midpoint of the price range set forth on the cover page of this prospectus we anticipate the 2021 Notes will convert into an aggregate of shares of our common stock. For further information regarding the Note Conversion, see the section titled "Capitalization—2021 Convertible Notes". The table below sets forth the 2021 Notes sold to our directors, executive officers and holders of more than 5% of our capital stock:

Investor	Affiliated Director(s) or Officer(s)	Principal Amount of Convertible Notes
Entities affiliated with Deerfield Private Design Fund IV, L.P.(1)	Dr. ElBardissi	$ 20,000,000
Axon Ventures X, LLC(2)	Mr. Spaventa	$ 3,000,000
Entities affiliated with Section 32 Fund 2, LP(3)	Dr. Pellini	$ 20,000,000
LC Healthcare Fund I, L.P.	—	$ 1,500,000
Revelation Alpine, LLC	—	$ 4,000,000

(1) Dr. ElBardissi, a member of our board of directors, is a partner of Deerfield Management, which is affiliated with Deerfield Private Design Fund IV, L.P.
(2) Mr. Spaventa is a managing partner of Axon Ventures X, LLC.
(3) Dr. Pellini is a managing partner of Section 32, LLC, which is affiliated with Section 32 Fund 2, LP.

Series B Convertible Preferred Stock Financing

In June and August of 2019, we issued and sold an aggregate of 19,373,169 shares of our Series B convertible preferred stock at a cash purchase price of $2.3228 per share for an aggregate purchase price of approximately $45 million. These shares of Series B convertible preferred stock will convert into an aggregate of 19,373,169 shares of common stock upon the completion of this offering. The table below sets forth the number of shares of Series B convertible preferred stock sold to our directors, executive officers and holders of more than 5% of our capital stock:

Investor	Affiliated Director(s) or Officer(s)	Shares of Series B Convertible Preferred Stock	Total Purchase Price
Deerfield Private Design Fund IV, L.P.(1)	Dr. ElBardissi	6,457,723	$ 14,999,999
Domain Partners IX, L.P.(2)	Dr. Kamdar	435,609	$ 1,011,833
LC Healthcare Fund I, L.P.	—	435,539	$ 1,011,670

Investor	Affiliated Director(s) or Officer(s)	Shares of Series B Convertible Preferred Stock	Total Purchase Price
ARCH Venture Fund IX, L.P.	—	1,306,618	$ 3,035,012
Axon Ventures X, LLC(3)	Mr. Spaventa	152,463	$ 354,141

(1) Dr. ElBardissi, a member of our board of directors, is a partner of Deerfield Management, which is affiliated with Deerfield Private Design Fund IV, L.P.
(2) Dr. Kamdar is a managing member of One Palmer Square Associates IX, L.L.C., which is the General Partner of Domain Partners IX, L.P.
(3) Mr. Spaventa is a managing partner of Axon Ventures X, LLC.

Directed Share Program

At our request, the underwriters have reserved up to 5% of the shares offered by this prospectus for sale at the initial public offering price to certain individuals through a directed share program, including our . See the section titled "Underwriting" for additional information.

Investors' Rights Agreement

We are party to an amended and restated voting agreement with (i) certain holders of our capital stock, including Deerfield Private Design Fund IV, L.P., Domain Partners IX, L.P., LC Healthcare Fund I, L.P., and ARCH Venture Fund IX, L.P. and (ii) Mr. Spaventa and Drs. Glezer and Barker. Under our investors' rights agreement, certain holders of our capital stock have the right to demand that we file a registration statement or request that their shares of our capital stock be covered by a registration statement that we are otherwise filing. See the section titled "Description of Capital Stock—Registration Rights" elsewhere in this prospectus for additional information regarding these registration rights.

Right of First Refusal and Co-Sale Agreement

We are party to an amended and restated first refusal and co-sale agreement with (i) certain holders of our capital stock including Deerfield Private Design Fund IV, L.P., Domain Partners IX, L.P., LC Healthcare Fund I, L.P., and ARCH Venture Fund IX, L.P. and (ii) Mr. Spaventa and Drs. Glezer and Barker. Under our first refusal and co-sale agreement, certain holders of our capital stock have the right of first refusal and co-sale relating to the shares of our common stock held by the parties to the agreement. Upon the consummation of this offering our first refusal and co-sale agreement will terminate.

Indemnification Agreements

We have entered, and intend to continue to enter, into separate indemnification agreements with each of our directors and executive officers, in addition to the indemnification provided for in our restated certificate of incorporation and amended and restated bylaws. The indemnification agreements and our restated certificate of incorporation and amended and restated bylaws that will be in effect upon the completion of this offering require us to indemnify our directors, executive officers and certain controlling persons to the fullest extent permitted by Delaware law. See the section titled "Executive Compensation—Limitation of Liability and Indemnification" elsewhere in this prospectus for additional information.

Related Party Transaction Policy

Prior to the completion of this offering, we intend to adopt a formal written policy providing that we are not permitted to enter into any transaction that exceeds $120,000 and in which any related person has a direct or indirect material interest without the consent of our audit committee. Our audit committee will have the primary responsibility for reviewing and approving or disapproving such "related party transactions." The charter of our audit committee will provide that our audit committee shall review and approve in advance any related party

transaction. In approving or rejecting any such transaction, our audit committee is to consider the relevant facts and circumstances available and deemed relevant to our audit committee, including whether the transaction is on terms no less favorable than terms generally available to an unaffiliated third-party under the same or similar circumstances and the extent of the related person's interest in the transaction.

All of the transactions described in this section were entered into prior to the adoption of this policy. Although we have not had a written policy for the review and approval of transactions with related persons, our board of directors has historically reviewed and approved any transaction where a director or officer had a financial interest, including the transactions described above. Prior to approving such a transaction, the material facts as to relationship or interest of the relevant director, officer or holder of 5% or more of any class of our voting securities in the agreement or transaction was disclosed to our board of directors. Our board of directors took this information into account when evaluating the transaction and in determining whether such transaction was fair to us and in the best interest of all our stockholders.

PRINCIPAL STOCKHOLDERS

The following table sets forth information with respect to the beneficial ownership of our common stock as of March 31, 2021 and as adjusted to reflect the sale of common stock offered by us in this offering, for:

- each of the named executive officers;
- each of our directors;
- all of our executive officers and directors as a group; and
- each person, or group of affiliated persons, who is known by us to beneficially own more than 5% of our common stock.

We have determined beneficial ownership in accordance with the rules of the SEC. Except as indicated in the footnotes below, we believe, based on the information furnished to us, that the persons and entities named in the table below have sole voting and investment power with respect to all shares of common stock that they beneficially own, subject to applicable community property laws.

Applicable percentage ownership prior to the offering is based on 50,274,959 shares of common stock outstanding as of March 31, 2021, after giving effect to the conversion of all outstanding shares of convertible preferred stock as of that date into an aggregate of 38,826,388 shares of our common stock (but not reflecting the automatic conversion of the 2021 Notes into an aggregate of shares of our common stock). For purposes of computing percentage ownership after this offering, we have assumed (i) that shares of common stock will be issued by us in this offering; (ii) the automatic conversion of the 2021 Notes into an aggregate of shares of our common stock, assuming an initial public offering price of $ per share, the midpoint of the price range set forth on the cover page of this prospectus in connection with the closing of this offering, (iii) the underwriters will not exercise their option to purchase up to additional shares and (iv) none of our executive officers, directors or stockholders who beneficially own more than five percent of our common stock will participate in this offering. In computing the number of shares of common stock beneficially owned by a person or entity and the percentage ownership of that person or entity, we deemed to be outstanding all shares of common stock subject to options held by that person or entity that are currently exercisable or that will become exercisable within 60 days of March 31, 2021. We did not deem these shares outstanding, however, such shares were included for the purpose of computing the percentage ownership of any other person or entity.

Unless otherwise indicated, the address of each beneficial owner listed in the table below is c/o Singular Genomics Systems, Inc., 10931 N. Torrey Pines Road, Suite #100, La Jolla, CA 92037.

In addition, the table below excludes any purchases that may be made through our directed share program and any potential purchases in this offering by the beneficial owners identified in the table below.

	Shares Beneficially Owned Prior to this Offering		Shares Beneficially Owned After this Offering	
Name of Beneficial Owner	Shares	Percentage	Shares	Percentage
Named Executive Officers and Directors:				
Andrew Spaventa(1)	5,529,455	10.08%		
Eli Glezer(2)	4,135,000	7.54%		
Dalen Meeter(3)	161,041	*		
David Barker(4)	1,060,000	1.93%		
Kim Kamdar(5)	4,656,982	8.49%		
Andrew ElBardissi(6)	—	—		
Michael Pellini(7)	323,124	*		
Jason Ryan(8)	—	—		
All executive officers and directors as a group (12 persons)(9)	17,194,975	31.19%		
5% Stockholders:				
Deerfield Private Design Fund IV, L.P. and affiliated entities and persons(10)	6,457,723	11.77%		
Domain Partners IX, L.P.(11)	4,626,982	8.43%		
Revelation Alpine, LLC(12)	4,757,743	8.67%		
LC Healthcare Fund I, L.P.(13)	4,471,090	8.15%		
ARCH Venture Fund IX, L.P.(14)	4,048,926	7.38%		

* Represents beneficial ownership of less than one percent.

(1) Consists of (i) 4,813,571 shares of common stock held directly by The Andrew K. Spaventa Living Trust dated April 9, 2014, of which Mr. Spaventa is a trustee and has voting and investment control with respect to these shares, and (ii) 715,884 shares of common stock held by Axon Ventures X, LLC. The total does not reflect 1,286,429 shares of common stock issuable pursuant to options not vested within 60 days of March 31, 2021. Mr. Spaventa is a managing partner of Axon Ventures X, LLC and in his capacity as such, Mr. Spaventa may be deemed to have shared voting and investment power over shares held by Axon Ventures X, LLC. Mr. Spaventa disclaims beneficial ownership of the shares held by Axon Ventures X, LLC except to the extent of his pecuniary interest in such shares.

(2) Consists of 4,135,000 shares of common stock held directly by Dr. Glezer.

(3) Consists of (i) 160,000 shares of common stock held directly by Mr. Meeter and (ii) 1,041 shares of common stock issuable pursuant to options held directly by Mr. Meeter exercisable within 60 days of March 31, 2021. The total does not reflect 23,959 shares of common stock issuable pursuant to options not vested within 60 days of March 31, 2021.

(4) Consists of (i) 1,000,000 shares of common stock held directly by The Barker/Loring Trust Dated August 27, 2013 and (ii) 60,000 shares of common stock issuable pursuant to options held directly by Mr. Barker exercisable within 60 days of March 31, 2021. Mr. Barker is a co-trustee of The Barker/Loring Trust Dated August 27, 2013 and has shared voting and investment control with respect to these shares.

(5) Consists of (i) 4,626,982 shares held directly by Domain Partners IX, L.P. (Domain Partners), (ii) 15,000 shares of common stock held directly by Dr. Kamdar and (iii) 15,000 shares of common stock held directly by Domain Associates, LLC (Domain Associates). The General Partner of Domain Partners is One Palmer Square Associates IX, LLC (One Palmer Square), Dr. Kamdar is a managing member of One Palmer Square and a managing member of Domain Associates. Dr. Kamdar disclaims beneficial ownership of the shares held by Domain Partners and Domain Associates, except to the extent of her pecuniary interest therein.

(6) Dr. ElBardissi holds 30,000 shares of common stock issuable pursuant to options held directly by Dr. ElBardissi exercisable within 60 days of March 31, 2021. Dr. ElBardissi, a partner at Deerfield Management Company, L.P., serves as director of the Company. The options granted to Dr. ElBardissi are held for the benefit, and at the direction, of Deerfield Management Company, L.P.

(7) Consists of (i) 96,994 shares held directly by The Pellini Family Trust, of which Dr. Pellini is the trustee and has voting and investment control with respect to these shares, (ii) 72,455 shares held directly by Dr. Pellini and (iii) 153,675 shares of common stock issuable pursuant to options held directly by Dr. Pellini exercisable within 60 days of March 31, 2021. The total does not reflect 1,264 shares of common stock issuable pursuant to options not vested within 60 days of March 31, 2021.

(8) Mr. Ryan was appointed to the board of directors in April 2021.

(9) Consists of (i) 16,923,386 shares of common stock beneficially owned by our directors and executive officers and (iii) 271,589 shares of common stock issuable to our directors and executive officers upon exercise of outstanding stock options exercisable within 60 days of March 31, 2021. The total does not reflect 1,827,279 shares of common stock issuable pursuant to options not vested within 60 days of March 31, 2021.

(10) Consists of (i) 6,457,723 shares held by Deerfield Private Design Fund IV, L.P. and (ii) 30,000 shares of common stock issuable pursuant to options held directly by Andrew ElBardissi exercisable within 60 days of March 31, 2021. Deerfield Mgmt IV, L.P. is the general partner of Deerfield Private Design Fund IV, L.P. Deerfield Management Company, L.P. is the investment manager of Deerfield Private Design Fund IV L.P. James E. Flynn is the sole member of the general partner of each of Deerfield Mgmt IV, L.P. and Deerfield Management Company, L.P. Each of Deerfield Mgmt IV, L.P., Deerfield Management Company, L.P. and James E. Flynn may be deemed to beneficially own the securities held by Deerfield Private Design Fund IV, L.P. Dr. ElBardissi is a partner at Deerfield Management, and the common stock issuable pursuant to options held directly by Dr. ElBardissi is held for the benefit, and at the direction, of Deerfield Management. The address of Deerfield Private Design Fund IV, L.P. is c/o Deerfield Management Company, L.P., 345 Park Avenue South, 12th Floor, New York, NY 10010.

(11) Consists of 4,626,982 shares held by Domain Partners. The General Partner of Domain Partners is One Palmer Square. The managing members of One Palmer Square are Dr Kamdar, James C. Blair, Brian H. Dovey, Brian K. Halak and Nicole Vitullo, and share voting and investment control with respect to holdings of Domain Partners. Each of the managing members disclaim beneficial ownership of the shares, except, in each case, to the extent of such person's pecuniary interest therein. The address of Domain Partners is 202 Carnegie Center, Suite 104, Princeton, New Jersey 08540.

(12) Consists of 4,757,743 shares held by Revelation Alpine, LLC. Revelation Alpine GP, LLC is the manager of Revelation Alpine, LLC. Revelation Alpine GP, LLC, through three managing members, composed of Scott Halsted, Zachary Scott, and Michael Boggs, has voting and dispositive authority over the shares held. Revelation Alpine, LLC, Revelation Alpine GP, LLC and each of the managing members disclaim beneficial ownership of the shares, except, in each case, to the extent of such person or entity's pecuniary interest therein. The address for each of these entities is 255 California Street, 12th Floor, San Francisco, CA 94111.

(13) Consists of 4,471,090 shares held by LC Healthcare Fund I, L.P., which is ultimately controlled and managed by Legend Capital, a limited liability Chinese company. Legend Capital is ultimately controlled by a management team consisting of three key individuals, Linan Zhu, Hao Chen, and Nengguang Wang. In addition, Junfeng Wang and Quan Zhou are Managing Directors of Legend Capital. Each of these individual managers of Legend Capital shares voting and investment power over the shares held by LC Healthcare Fund I, L.P, and each disclaims beneficial ownership of such shares. The address of the principal place of business for LC Healthcare Fund I, L.P. is Legend Capital, 16/F, Tower B, Raycom Infotech Park, No. 2 Kexueyuan South Road, Zhongguancun, Haidian District, Beijing 100190, People's Republic of China.

(14) Consists of 4,048,926 shares held by ARCH Venture Fund IX, L.P. (ARCH IX). ARCH Venture Partners IX, L.P. (AVP IX LP) is the sole general partner of ARCH IX. ARCH Venture Partners IX, LLC (AVP IX LLC) is the sole general partner of AVP IX LP. Keith Crandell, Clinton Bybee, and Robert Nelsen are managing directors of AVP IX LLC (the AVP IX MDs). AVP IX LP may be deemed to beneficially own the shares held by ARCH IX, respectively, AVP IX LLC may be deemed to beneficially own the shares held by ARCH IX, and each of the AVP IX MDs may be deemed to share the power to direct the disposition and vote of the shares held by ARCH IX. AVP IX LP, AVP IX LLC, and the AVP IX MDs each disclaim beneficial ownership of the shares, except, in each case, to the extent of any pecuniary interest therein. The address of the principal place of business for ARCH IX is 8755 W. Higgins Road, Suite 1025, Chicago, IL 60631.

DESCRIPTION OF CAPITAL STOCK

The following descriptions of our capital stock and certain provisions of our amended and restated certificate of incorporation and amended and restated bylaws are summaries and are qualified by reference to the amended and restated certificate of incorporation and the amended and restated bylaws that will be in effect upon completion of this offering. A description of our capital stock and the material terms and provisions of our amended and restated certificate of incorporation and amended and restated bylaws that will be in effect upon the completion of this offering and affecting the rights of holders of our capital stock is set forth below. The forms of our amended and restated certificate of incorporation and our amended and restated bylaws to be adopted in connection with this offering are filed as exhibits to the registration statement relating to this prospectus.

Upon the completion of this offering, our amended and restated certificate of incorporation will authorize shares of undesignated preferred stock, the rights, preferences and privileges of which may be designated from time to time by our board of directors.

Upon the completion of this offering, our authorized capital stock will consist of shares, all with a par value of $0.0001 per share, of which:

- shares will be designated common stock; and
- shares will be designated preferred stock.

As of March 31, 2021, after giving effect to (i) the conversion of all outstanding shares of convertible preferred stock into an aggregate of 38,826,388 shares of our common stock and (ii) the conversion of all outstanding 2021 Notes into an aggregate of shares of our common stock, assuming an initial public offering price of $ per share, the midpoint of the price range set forth on the cover page of this prospectus, there were outstanding:

- shares of our common stock held of record by stockholders;
- 4,475,799 shares of our common stock issuable upon exercise of outstanding stock options; and
- a warrant to purchase 129,156 shares of our common stock.

Common Stock

Dividend Rights

Subject to preferences that may apply to shares of preferred stock outstanding at the time, the holders of outstanding shares of our common stock are entitled to receive dividends out of funds legally available if our board of directors, in its discretion, determines to issue dividends and only then at the times and in the amounts that our board of directors may determine. See “Dividend Policy” for more information.

Voting Rights

The holders of our common stock are entitled to one vote per share. Stockholders do not have the ability to cumulate votes for the election of directors. Our amended and restated certificate of incorporation and amended and restated bylaws that will be in effect upon the completion of this offering will provide for a classified board of directors consisting of three classes of approximately equal size, each serving staggered three-year terms. Only one class of directors will be elected at each annual meeting of our stockholders, with the other classes continuing for the remainder of their respective three-year terms.

No Preemptive or Similar Rights

Our common stock is not entitled to preemptive rights and is not subject to conversion, redemption or sinking fund provisions.

Right to Receive Liquidation Distributions

Upon our dissolution, liquidation or winding-up, the assets legally available for distribution to our stockholders are distributable ratably among the holders of our common stock, subject to prior satisfaction of all outstanding debt and liabilities and the preferential rights and payment of liquidation preferences, if any, on any outstanding shares of preferred stock.

Preferred Stock

Upon the completion of this offering, no shares of preferred stock will be outstanding, but we will be authorized, subject to limitations prescribed by Delaware law, to issue preferred stock in one or more series, to establish from time to time the number of shares to be included in each series and to fix the designation, powers, preferences and rights of the shares of each series and any associated qualifications, limitations or restrictions. Our board of directors also can increase or decrease the number of shares of any series, but not below the number of shares of that series then outstanding, without any further vote or action by our stockholders. Our board of directors may authorize the issuance of preferred stock with voting or conversion rights that could adversely affect the voting power or other rights of the holders of the common stock. The issuance of preferred stock, while providing flexibility in connection with possible acquisitions and other corporate purposes, could, among other things, have the effect of delaying, deferring or preventing a change in control of our company and may adversely affect the market price of our common stock and the voting and other rights of the holders of common stock. We have no current plan to issue any shares of preferred stock.

Options

As of March 31, 2021, there were options to purchase 4,475,799 shares of our common stock outstanding, with a weighted-average exercise price per share of $3.05 all of which were subject to options granted under our 2016 Stock Plan.

Warrant

As of March 31, 2021, we had the immediately exercisable SVB warrant to purchase 129,156 shares of our Series B convertible preferred stock, with an exercise price of $2.32 per share. The SVB warrant is subject to a cashless exercise mechanism. Upon the conversion of our convertible preferred stock in connection with this offering, the SVB warrant will convert into a warrant to purchase shares of our common stock.

Convertible Notes

In February 2021, we sold and issued approximately $130.5 million aggregate principal amount of 2021 Notes. The 2021 Notes accrue 6% interest per annum and will automatically convert into shares of our common stock in connection with the closing of this offering at a conversion price equal to the lower of (i) 80% of the initial public offering price per share set forth on the cover page of this prospectus and (ii) the price per share obtained by dividing $1.5 billion by the fully-diluted capitalization of the Company prior to this offering. In connection with this offering, assuming an initial public offering price of $ per share, the midpoint of the price range set forth on the cover page of this prospectus, we anticipate the 2021 Notes will convert into an aggregate of shares of our common stock. For further information regarding the Note Conversion, see the section titled “Capitalization—2021 Convertible Notes.”

Registration Rights

Following the completion of this offering, the holders of 38,826,388 shares of our common stock issued upon the conversion of our convertible preferred stock and 11,448,571 shares of our common stock will be entitled to contractual rights to require us to register those shares under the Securities Act. These registration rights are provided under the terms of our amended and restated investors’ rights agreement between us and the holders of these shares, which we entered into on June 27, 2019.

We will pay all expenses relating to any demand or piggyback registration described below, other than underwriting discounts and commissions. The registration rights terminate upon the earliest to occur of: (i) the fifth anniversary of the completion of this offering; (ii) a liquidation event (other than an asset sale); or (iii) with respect to the registration rights of an individual holder, such earlier time after this offering at which the holder (a) can sell all of its shares in compliance with Rule 144(b)(1)(i) or (b) holds one percent or less of our outstanding common stock and all shares held by the holder can be sold in any three-month period without registration in compliance with Rule 144.

Demand Registration Rights

The holders of the registrable securities will be entitled to certain demand registration rights. At any time beginning six months following the effectiveness of this offering, the holders of 35% or more of the registrable securities then outstanding may make a written request that we register some or all of their registrable securities, subject to certain specified conditions and exceptions. We are required to use commercially reasonable efforts to effect the registration and will pay all registration expenses, other than underwriting discounts and commissions, related to any demand registration. Such request for registration must cover securities with an aggregate offering price of at least $10 million. We are not obligated to effect more than two of these registrations.

Piggyback Registration Rights

In connection with this offering, holders of our registrable securities were entitled to, and the necessary percentage of holders waived, their rights to notice of this offering and to include their registrable securities in this offering. If we propose to register any of our securities under the Securities Act either for our own account or for the account of other stockholders in another offering, the holders of shares having registration rights will, subject to certain exceptions, be entitled to include their shares in our registration statement, provided that the underwriters of any such offering have the right to limit the number of shares included in the registration. These registration rights are subject to specified other conditions and limitations as set forth in our amended and restated investors' rights agreement.

Form S-3 Registration Rights

At any time after we are qualified to file a registration statement on Form S-3, and subject to limitations and conditions specified in the amended and restated investors' rights agreement, the holders of 20% or more of the registrable securities then outstanding may make a written request that we prepare and file a registration statement on Form S-3 under the Securities Act covering their shares, so long as the aggregate price to the public is at least $1 million. We are not obligated to effect more than two of these Form S-3 registrations in any 12-month period. Such holders will pay pro rata all expenses related to filing a registration statement on Form S-3.

Anti-Takeover Provisions

Delaware Law

Upon the completion of this offering, we will be governed by the provisions of Section 203 of the Delaware General Corporation Law regulating corporate takeovers. This section prevents some Delaware corporations from engaging, under some circumstances, in a business combination, which includes a merger or sale of at least 10% of the corporation's assets with any interested stockholder, meaning a stockholder who, together with affiliates and associates, owns or, within three years prior to the determination of interested stockholder status, did own 15% or more of the corporation's outstanding voting stock, unless:

- the transaction is approved by the board of directors prior to the time that the interested stockholder became an interested stockholder;
- upon closing of the transaction that resulted in the stockholder becoming an interested stockholder, the interested stockholder owned at least 85% of the voting stock of the corporation outstanding at the time the transaction began, excluding for purposes of determining the voting stock outstanding those shares owned (i) by persons who are directors and also officers and (ii) employee stock plans in which employee participants do not have the right to determine confidentially whether shares held subject to the plan will be tendered in a tender or exchange offer; or

- subsequent to such time that the stockholder became an interested stockholder the business combination is approved by the board of directors and authorized at an annual or special meeting of stockholders by at least two-thirds of the outstanding voting stock which is not owned by the interested stockholder.

A Delaware corporation may "opt out" of these provisions with an express provision in its original certificate of incorporation or an express provision in its certificate of incorporation or amended and restated bylaws resulting from a stockholders' amendment approved by at least a majority of the outstanding voting shares. We have not opted out of these provisions. As a result, mergers or other takeover or change in control attempts of us may be discouraged or prevented.

Certificate of Incorporation and Bylaw Provisions

Upon the completion of this offering, our amended and restated certificate of incorporation and our amended and restated bylaws will include a number of provisions that may have the effect of deterring hostile takeovers or delaying or preventing changes in control of our management team, including the following:

- ***Board of Directors Vacancies.*** Our amended and restated certificate of incorporation and amended and restated bylaws will authorize our board of directors to fill vacant directorships, including newly-created seats. In addition, the number of directors constituting our board of directors will be set only by resolution adopted by a majority vote of our entire board of directors. These provisions will prevent a stockholder from increasing the size of our board of directors and gaining control of our board of directors by filling the resulting vacancies with its own nominees.
- ***Classified Board.*** Our amended and restated certificate of incorporation and amended and restated bylaws will provide that our board of directors will be classified into three classes of directors, each of which will hold office for a three-year term. In addition, directors may only be removed from the board of directors for cause and only by the approval of 66 2/3% of our then-outstanding shares of our common stock. A third-party may be discouraged from making a tender offer or otherwise attempting to obtain control of us as it is more difficult and time consuming for stockholders to replace a majority of the directors on a classified board of directors.
- ***Stockholder Action; Special Meeting of Stockholders.*** Our amended and restated certificate of incorporation will provide that stockholders will not be able to take action by written consent, and will only be able to take action at annual or special meetings of our stockholders. Stockholders will not be permitted to cumulate their votes for the election of directors. Our amended and restated bylaws will further provide that special meetings of our stockholders may be called only by a majority vote of our entire board of directors, the chair of our board of directors or our chief executive officer.
- ***Advance Notice Requirements for Stockholder Proposals and Director Nominations.*** Our amended and restated bylaws will provide advance notice procedures for stockholders seeking to bring business before our annual meeting of stockholders, or to nominate candidates for election as directors at any meeting of stockholders. Our amended and restated bylaws will also specify certain requirements regarding the form and content of a stockholder's notice. These provisions may preclude our stockholders from bringing matters before our annual meeting of stockholders or from making nominations for directors at our meetings of stockholders.
- ***Issuance of Undesignated Preferred Stock.*** Our board of directors will have, the authority, without further action by the holders of common stock, to issue up to shares of undesignated preferred stock with rights and preferences, including voting rights, designated from time to time by the board of directors. The existence of authorized but unissued shares of preferred stock will enable our board of directors to render more difficult or discourage an attempt to obtain control of us by means of a merger, tender offer, proxy contest or otherwise.

Choice of Forum

Upon the completion of this offering, our amended and restated certificate of incorporation will provide that the Court of Chancery of the State of Delaware will be the exclusive forum for any derivative action or

proceeding brought on our behalf; any action asserting a breach of fiduciary duty; any action asserting a claim against us arising pursuant to the Delaware General Corporation Law, our amended and restated certificate of incorporation or our amended and restated bylaws or any action asserting a claim against us that is governed by the internal affairs doctrine. Our amended and restated certificate of incorporation will also provide that the U.S. federal district courts will be the exclusive forum for resolving any complaint asserting a cause of action arising under the Securities Act, including all causes of action asserted against any defendant named in such complaint. For the avoidance of doubt, this provision is intended to benefit and may be enforced by us, our officers and directors, the underwriters to any offering giving rise to such complaint, and any other professional entity whose profession gives authority to a statement made by that person or entity and who has prepared or certified any part of the documents underlying the offering. Some companies that adopted a similar federal district court forum selection provision were subject to a suit in the Chancery Court of Delaware by stockholders who asserted that the provision is not enforceable. While the Delaware Supreme Court held that such federal district court forum selection provision was in fact valid, there can be no assurance that federal courts or other state courts will follow the holding of the Delaware Supreme Court or determine that our federal district court forum selection provision should be enforced in a particular case.

These choice of forum provisions do not apply to actions brought to enforce a duty or liability created by the Exchange Act. We intend for the choice of forum provision regarding claims arising under the Securities Act to apply despite the fact that Section 22 of the Securities Act creates concurrent jurisdiction for federal and state courts over all actions brought to enforce any duty or liability created by the Securities Act or the rules and regulations thereunder. There is uncertainty as to whether a court would enforce such provision with respect to claims under the Securities Act, and our stockholders will not be deemed to have waived our compliance with the federal securities laws and the rules and regulations thereunder.

These exclusive forum provisions may limit the ability of our stockholders to bring a claim in a judicial forum that such stockholders find favorable for disputes with us or our directors, officers or employees, which may discourage such lawsuits against us and our directors, officers and employees. Alternatively, if a court were to find such provisions contained in our certificate of incorporation to be inapplicable or unenforceable in an action, we may incur additional costs associated with resolving such action in other jurisdictions, which could materially adversely affect our business, financial condition and operating results.

Transfer Agent and Registrar

Upon the completion of this offering, the transfer agent and registrar for our common stock will be Continental Stock Transfer & Trust Company. The transfer agent's address is 1 State Street 30th Floor, New York, NY 10004, and its telephone number is (212) 509-4000.

Nasdaq Listing

We have applied to list our common stock on the Nasdaq Global Market under the symbol "OMIC."

SHARES ELIGIBLE FOR FUTURE SALE

Before this offering, there has not been a public market for shares of our common stock and a liquid trading market for common stock may not develop or be sustained after this offering. Future sales of substantial amounts of shares of our common stock, including shares issued upon the exercise of outstanding options, in the public market following this offering or the possibility of these sales occurring, could cause the prevailing market price for our common stock to fall or impair our ability to raise equity capital through sales of equity securities in the future.

Upon the closing of this offering, we will have outstanding shares of our common stock, based on the number of shares outstanding as of March 31, 2021. This includes (i) shares of common stock that we are selling in this offering, which shares may be resold in the public market immediately unless purchased by our affiliates, (ii) the conversion of all of our 38,826,388 outstanding shares of our convertible preferred stock into an aggregate of 38,826,388 shares of our common stock upon the closing of this offering and (iii) the conversion of all outstanding 2021 Notes into an aggregate of shares of common stock, assuming an initial public offering price of $ per share, the midpoint of the price range set forth on the cover page of this prospectus, in connection with the closing of this offering, and assumes no additional exercise of outstanding options other than as described elsewhere in this prospectus.

Of these shares, all shares sold in this offering will be freely tradable without restriction under the Securities Act, unless purchase by our "affiliates," as that term is defined in Rule 144 under the Securities Act. The remaining shares of common stock that are not sold in this offering will be "restricted securities," as that term is defined in Rule 144 under the Securities Act, and we expect that substantially all of these restricted securities will be subject to the 180-day lock-up period under the lock-up agreements as described below. These restricted securities are eligible for public sale only if they are registered under the Securities Act or if they qualify for an exemption from registration under Rule 144 or Rule 701 under the Securities Act, which are summarized below.

In addition, we, our executive officers and directors, and substantially all of our security holders have entered into market standoff agreements with us or lock-up agreements with the underwriters under which they have agreed, subject to specific exceptions, not to sell any of our capital stock until at least 180 days after the date of this prospectus, as described below. As a result of these agreements and the provisions of our investors' rights agreement disclosed in the section titled "Description of Capital Stock—Registration Rights," subject to the provisions of Rule 144 or Rule 701, based on an assumed offering date of , 2021, shares will be available for sale in the public market as follows:

- beginning on the date of this prospectus, the shares sold in this offering will be immediately available for sale in the public market, unless purchased by our affiliates;
- beginning 181 days after the date of this prospectus, additional shares will become eligible for sale in the public market, of which shares will be held by our current officers, directors and greater than 10% stockholders, assuming that our existing stockholders do not participate in this offering; and
- the remainder of the shares will be eligible for sale in the public market from time to time thereafter, subject in some cases to the volume and other restrictions of Rule 144, as described below.

We cannot estimate the number of shares of our common stock that our existing stockholders will elect to sell under Rule 144.

Rule 144

In general, under Rule 144 as currently in effect, a person who has beneficially owned shares of our restricted common stock for at least six months would be entitled to sell their securities provided that such person is not deemed to have been one of our affiliates at the time of, or at any time during the 90 days preceding, a sale, and we

are subject to the periodic reporting requirements of the Exchange Act, for at least 90 days before the sale. In addition, under Rule 144, any person who is not an affiliate of ours and has held their shares for at least one year, including the holding period of any prior owner other than one of our affiliates, would be entitled to sell an unlimited number of shares immediately upon the completion of this offering without regard to whether current public information about us is available. Persons who have beneficially owned shares of our restricted common stock for at least six months but who are our affiliates at the time of, or any time during the 90 days preceding, a sale, would be subject to additional restrictions, by which such person would be entitled to sell within any three-month period only a number of securities that does not exceed the greater of either of the following:

- 1% of the number of shares of our capital stock then outstanding, which will equal shares immediately after the completion of this offering, assuming no exercise by the underwriters of their option to purchase additional shares; or
- the average weekly trading volume of our common stock on Nasdaq during the four calendar weeks preceding the filing of a notice on Form 144 with respect to such sale.

provided, in each case, that we have been subject to the Exchange Act periodic reporting requirements for at least 90 days before the sale. Such sales both by affiliates and by non-affiliates must also comply with the manner of sale, current public information and notice provisions of Rule 144.

Rule 701

Any of our employees, directors, officers, consultants, advisors or service providers, other than a person who is deemed to have been one of our affiliates during the immediately preceding 90 days of the date of this prospectus, who purchased shares under a written compensatory plan or contract prior to this offering may be entitled to rely on the resale provisions of Rule 701. Rule 701, as currently in effect, permits resales of shares, in reliance upon Rule 144 but without compliance with certain restrictions, including the holding period requirement, of Rule 144. Rule 701 further provides that non-affiliates may sell such shares in reliance on Rule 144 without having to comply with the public information, volume limitation or notice provisions of Rule 144. All holders of Rule 701 shares are required to wait until 90 days after the date of this prospectus before selling such shares if such resale is pursuant to Rule 701. All Rule 701 shares are, however, subject to lock-up agreements and will only become eligible for sale upon the expiration of these lock-up agreements.

Lock-Up and Market Standoff Agreements

In connection with this offering, we and each of our directors and officers and the holders of substantially all of our outstanding stock and stock options have agreed with the underwriters, subject to certain exceptions, not to, among other things, offer, pledge, sell, contract to sell, sell any option or contract to purchase, purchase any option or contract to sell, grant any option, right or warrant to purchase, lend, or otherwise transfer or dispose of, directly or indirectly, shares of our common stock or any securities convertible into or exchangeable for shares of our common stock or enter into any hedging, swap or other arrangement that transfers to another any of the economic consequences of ownership of our common stock during the period from the date of this prospectus continuing through the date 180 days after the date of this prospectus, except with the prior written consent of J.P. Morgan Securities LLC and Goldman Sachs & Co. LLC. These agreements are subject to certain exceptions, as set forth in “Underwriting.”

In addition, substantially all other holders of our common stock, options and the SVB warrant have previously entered into market stand-off agreements with us not to sell or otherwise transfer any of their common stock or securities convertible into or exchangeable for shares of common stock for a period that extends through 180 days after the date of this prospectus.

Certain of our employees, including our executive officers, and directors may enter into written trading plans that are intended to comply with Rule 10b5-1 under the Exchange Act. Sales under these trading plans

would not be permitted until the expiration of the lock-up agreements relating to our initial public offering described above.

Registration Rights

Under our amended and restated investors' rights agreement, after the completion of this offering, the holders of up to 50,274,959 shares of our common stock will, subject to the lock-up agreements referred to above, be entitled to certain rights with respect to the registration of such shares under the Securities Act. The registration of these shares of our common stock under the Securities Act would result in these shares becoming eligible for sale in the public market without restriction under the Securities Act immediately upon the effectiveness of such registration, subject to the Rule 144 limitations applicable to affiliates. See the section titled "Description of Capital Stock—Registration Rights" for a description of these registration rights.

Equity Plans

As of March 31, 2021, we had outstanding options to purchase an aggregate of 4,475,799 shares of our common stock under the 2016 Plan. Following this offering, we intend to file a registration statement on Form S-8 under the Securities Act to register all of the shares of our common stock subject to options outstanding or reserved for issuance under the 2016 Plan, the 2021 Plan and the 2021 ESPP. We expect to file this registration statement as soon as practicable after the completion of this offering. This registration statement will become effective immediately upon filing, and shares covered by this registration statement will thereupon be eligible for sale in the public markets, subject to vesting restrictions, the lock-up agreements described above and Rule 144 limitations applicable to affiliates. For a more complete discussion of our stock plans, see the section titled "Executive Compensation—Equity Plans."

MATERIAL U.S. FEDERAL INCOME TAX CONSEQUENCES FOR NON-U.S. HOLDERS OF OUR COMMON STOCK

The following is a general discussion of the material U.S. federal income tax considerations applicable to non-U.S. holders (as defined below) with respect to their ownership and disposition of shares of our common stock issued pursuant to this offering. For purposes of this discussion, a non-U.S. holder means a beneficial owner of our common stock (other than an entity or arrangement that is treated as a partnership for U.S. federal income tax purposes) that is not, for U.S. federal income tax purposes, any of the following:

- an individual citizen or resident of the United States;
- a corporation (or other entity treated as a corporation for U.S. federal income tax purposes) created or organized in the United States or under the laws of the United States, any state thereof or the District of Columbia;
- an estate, the income of which is includable in gross income for U.S. federal income tax purposes regardless of its source; or
- a trust if (i) a court within the United States is able to exercise primary supervision over the administration of the trust and one or more "U.S. persons," as defined under the Code, have the authority to control all substantial decisions of the trust or (ii) such trust has made a valid election to be treated as a U.S. person for U.S. federal income tax purposes.

This discussion is based on current provisions of the Code, existing, temporary and proposed Treasury Regulations promulgated thereunder, judicial opinions, published positions of the Internal Revenue Service, or IRS, and other applicable authorities, all of which are subject to change or to differing interpretation, possibly with retroactive effect. This discussion assumes that a non-U.S. holder holds shares of our common stock as a capital asset (generally, property held for investment) for U.S. federal income tax purposes. This discussion does not address all aspects of U.S. federal income taxation that may be important to a particular non-U.S. holder in light of that non-U.S. holder's individual circumstances, nor does it address any aspects of the unearned income Medicare contribution tax pursuant to the Health Care and Education Reconciliation Act of 2010, any U.S. gift taxes, any U.S. alternative minimum taxes or any state, local or non-U.S. taxes. This discussion may not apply, in whole or in part, to particular non-U.S. holders in light of their individual circumstances or to holders subject to special treatment under the U.S. federal income tax laws (such as insurance companies, tax-exempt organizations, financial institutions, brokers or dealers in securities, "controlled foreign corporations," "passive foreign investment companies," non-U.S. holders that hold our common stock as part of a straddle, hedge, conversion transaction or other integrated investment and certain U.S. expatriates).

If a partnership (or other entity or arrangement treated as a partnership for U.S. federal income tax purposes) holds our common stock, the tax treatment of a partner therein will generally depend on the status of the partner and the activities of the partnership. Partners of a partnership holding our common stock should consult their tax advisor as to the particular U.S. federal income tax consequences applicable to them.

INVESTORS CONSIDERING THE PURCHASE OF OUR COMMON STOCK SHOULD CONSULT THEIR OWN TAX ADVISORS REGARDING THE APPLICATION OF THE U.S. FEDERAL INCOME AND ESTATE TAX LAWS TO THEIR PARTICULAR SITUATIONS AND THE CONSEQUENCES OF NON-U.S., STATE, OR LOCAL LAWS AND TAX TREATIES.

Dividends

We do not expect to declare or make any distributions on our common stock in the foreseeable future. If we do pay distributions on shares of our common stock, however, such distributions will constitute dividends for U.S. federal income tax purposes to the extent paid from our current or accumulated earnings and profits, as determined under U.S. federal income tax principles. Distributions in excess of our current and accumulated

earnings and profits will constitute a return of capital that is applied against and reduces, but not below zero, a non-U.S. holder's adjusted tax basis in shares of our common stock. Any excess will be treated as capital gain and will be subject to the treatment described below in the subsection titled "—Gain on Sale or Other Disposition of Common Stock." Any distributions will also be subject to the discussions below in the subsections titled "—Backup Withholding and Information Reporting" and "—Foreign Account Tax Compliance Act."

Any dividend paid to a non-U.S. holder on our common stock that is not effectively connected with a non-U.S. holder's conduct of a trade or business in the United States will generally be subject to U.S. withholding tax at a 30% rate. The withholding tax might apply at a reduced rate, however, under the terms of an applicable income tax treaty between the United States and the non-U.S. holder's country of residence. You should consult your own tax advisors regarding your entitlement to benefits under a relevant income tax treaty. Generally, in order for us or our paying agent to withhold tax at a lower treaty rate, a non-U.S. holder must certify its entitlement to treaty benefits. A non-U.S. holder generally can meet this certification requirement by providing an IRS Form W-8BEN, W-8BEN-E or other appropriate form (or any successor or substitute form thereof) to us or our paying agent. If the non-U.S. holder holds the stock through a financial institution or other agent acting on the holder's behalf, the holder will be required to provide appropriate documentation to the holder's agent. The holder's agent will then be required to provide certification to us or our paying agent, either directly or through other intermediaries. If you are eligible for a reduced rate of U.S. federal withholding tax under an income tax treaty, you may obtain a refund or credit of any excess amounts withheld by filing an appropriate claim for a refund with the IRS in a timely manner.

Dividends received by a non-U.S. holder that are effectively connected with a U.S. trade or business conducted by the non-U.S. holder, and if required by an applicable income tax treaty between the United States and the non-U.S. holder's country of residence, are attributable to a permanent establishment maintained by the non-U.S. holder in the United States, are not subject to U.S. withholding tax. To obtain this exemption, a non-U.S. holder must provide us or our paying agent with an IRS Form W-8ECI properly certifying such exemption. Such effectively connected dividends, although not subject to withholding tax, are taxed at the same rates applicable to U.S. persons, net of certain deductions and credits. In addition to being taxed at tax rates applicable to U.S. persons, dividends received by a corporate non-U.S. holder that are effectively connected with a U.S. trade or business of the corporate non-U.S. holder may also be subject to a branch profits tax at a rate of 30% or such lower rate as may be specified by an applicable tax treaty.

Gain on Sale or Other Disposition of Common Stock

Subject to the discussion below in the subsection titled "—Backup Withholding and Information Reporting" and "—Foreign Account Tax Compliance Act," non-U.S. holders will generally not be subject to U.S. federal income tax on any gains realized on the sale, exchange or other disposition of our common stock unless:

- the gain (i) is effectively connected with the conduct by the non-U.S. holder of a U.S. trade or business and (ii) if required by an applicable income tax treaty between the United States and the non-U.S. holder's country of residence, is attributable to a permanent establishment maintained by the non-U.S. holder in the United States (in which case the special rules described below apply);
- the non-U.S. holder is an individual who is present in the United States for 183 days or more in the taxable year of the sale, exchange or other disposition of our common stock, and certain other requirements are met (in which case the gain would be subject to a flat 30% tax, or such reduced rate as may be specified by an applicable income tax treaty, which may be offset by U.S. source capital losses, even though the individual is not considered a resident of the United States); or
- the rules of the Foreign Investment in Real Property Tax Act, or FIRPTA, treat the gain as effectively connected with a U.S. trade or business.

The FIRPTA rules may apply to a sale, exchange or other disposition of our common stock if we are, or were within the shorter of the five-year period preceding the disposition and the non-U.S. holder's holding

period, a "U.S. real property holding corporation," or USRPHC. In general, we would be a USRPHC if interests in U.S. real estate comprised at least half of the value of our business assets. We do not believe that we are a USRPHC and we do not anticipate becoming one in the future. Even if we are or were to become a USRPHC, gain arising from the sale or other taxable disposition by a non-U.S. holder will not be subject to U.S. federal income tax if our common stock is "regularly traded," as defined by applicable Treasury Regulations, on an established securities market, and such non-U.S. holder owned, actually and constructively, 5% or less of our common stock throughout the shorter of the five-year period ending on the date of the sale or other taxable disposition or the non-U.S. holder's holding period.

If any gain from the sale, exchange or other disposition of our common stock, (i) is effectively connected with a U.S. trade or business conducted by a non-U.S. holder and (ii) if required by an applicable income tax treaty between the United States and the non-U.S. holder's country of residence, is attributable to a permanent establishment maintained by such non-U.S. holder in the United States, then the gain generally will be subject to U.S. federal income tax at the same rates applicable to U.S. persons, net of certain deductions and credits. If the non-U.S. holder is a corporation, under certain circumstances, that portion of its earnings and profits that is effectively connected with its U.S. trade or business, subject to certain adjustments, generally would be subject also to a "branch profits tax" at a rate of 30% or such lower rate as may be specified by an applicable income tax treaty.

Backup Withholding and Information Reporting

We must report annually to the IRS and to each non-U.S. holder the amount of dividends paid to, and the tax withheld with respect to, each non-U.S. holder. These reporting requirements apply regardless of whether withholding was reduced or eliminated by an applicable tax treaty. Copies of this information reporting may also be made available under the provisions of a specific tax treaty or agreement with the tax authorities in the country in which the non-U.S. holder resides or is established.

A non-U.S. holder will generally be subject to backup withholding for dividends on our common stock paid to such holder unless such holder certifies under penalties of perjury that, among other things, it is a non-U.S. holder (and the payer does not have actual knowledge or reason to know that such holder is a U.S. person) or otherwise establishes an exemption.

Information reporting and backup withholding generally are not required with respect to the amount of any proceeds from the sale or other disposition of our common stock by a non-U.S. holder outside the United States through a foreign office of a foreign broker that does not have certain specified connections to the United States. However, if a non-U.S. holder sells or otherwise disposes of its shares of common stock through a U.S. broker or the U.S. offices of a foreign broker, the broker will generally be required to report the amount of proceeds paid to the non-U.S. holder to the IRS and impose backup withholding on that amount unless such non-U.S. holder provides appropriate certification to the broker of its status as a non-U.S. holder (and the payer does not have actual knowledge or reason to know that such holder is a U.S. person) or otherwise establishes an exemption.

Backup withholding is not an additional income tax. Any amounts withheld under the backup withholding rules from a payment to a non-U.S. holder generally can be credited against the non-U.S. holder's U.S. federal income tax liability, if any, or refunded, provided that the required information is furnished to the IRS in a timely manner. Non-U.S. holders should consult their tax advisors regarding the application of the information reporting and backup withholding rules to them.

Foreign Account Tax Compliance Act

Under the Foreign Account Tax Compliance Act, or FATCA, withholding tax of 30% applies to certain payments to foreign financial institutions, investment funds and certain other non-U.S. persons that fail to comply with certain information reporting and certification requirements pertaining to their direct and indirect

U.S. securityholders and/or U.S. accountholders and do not otherwise qualify for an exemption. Under applicable Treasury Regulations and IRS guidance, this withholding currently applies to payments of dividends, if any, on, and, subject to the proposed Treasury Regulations discussed below, gross proceeds from the sale or other disposition of, our common stock. An intergovernmental agreement between the United States and a foreign country may modify the requirements described in this paragraph.

While, beginning on January 1, 2019, withholding under FATCA would have applied also to payments of gross proceeds from the sale or other disposition of our common stock, proposed Treasury Regulations eliminate FATCA withholding on payments of gross proceeds entirely. Taxpayers generally may rely on these proposed Treasury Regulations until final Treasury Regulations are issued.

Prospective investors are encouraged to consult with their own tax advisors regarding the possible implications of FATCA on their investment in our common stock.

Federal Estate Tax

Common stock we have issued that is owned (or treated as owned) by an individual who is not a citizen or a resident of the United States (as defined for U.S. federal estate tax purposes) at the time of death will be included in the individual's gross estate for U.S. federal estate tax purposes unless an applicable estate or other tax treaty provides otherwise, and therefore may be subject to U.S. federal estate tax.

PROSPECTIVE INVESTORS SHOULD CONSULT THEIR OWN TAX ADVISORS REGARDING THE POTENTIAL APPLICATION OF WITHHOLDING UNDER FATCA TO THEIR INVESTMENT IN OUR COMMON STOCK. THE PRECEDING DISCUSSION OF U.S. FEDERAL TAX CONSIDERATIONS IS FOR GENERAL INFORMATION PURPOSES ONLY. IT IS NOT TAX ADVICE. EACH PROSPECTIVE INVESTOR SHOULD CONSULT ITS OWN TAX ADVISOR REGARDING THE PARTICULAR U.S. FEDERAL, GIFT, ESTATE, STATE, LOCAL, AND NON-U.S. TAX CONSEQUENCES OF PURCHASING, HOLDING, AND DISPOSING OF OUR COMMON STOCK, INCLUDING THE CONSEQUENCES OF ANY PROPOSED CHANGE IN APPLICABLE LAWS.

UNDERWRITING

We are offering the shares of common stock described in this prospectus through a number of underwriters. J.P. Morgan Securities LLC, Goldman Sachs & Co. LLC, BofA Securities, Inc., and Cowen and Company, LLC are acting as joint book-running managers of the offering and as representatives of the underwriters. UBS Securities LLC is also acting as a book-running manager. We have entered into an underwriting agreement with the underwriters. Subject to the terms and conditions of the underwriting agreement, we have agreed to sell to the underwriters, and each underwriter has severally agreed to purchase, at the public offering price less the underwriting discounts and commissions set forth on the cover page of this prospectus, the number of shares of common stock listed next to its name in the following table:

Name	Number of Shares
J.P. Morgan Securities LLC	
Goldman Sachs & Co. LLC	
BofA Securities, Inc.	
Cowen and Company, LLC	
UBS Securities LLC	
Total	

The underwriters are committed to purchase all the shares of common stock offered by us if they purchase any shares. The underwriting agreement also provides that if an underwriter defaults, the purchase commitments of non-defaulting underwriters may also be increased or the offering may be terminated.

The underwriters propose to offer the common stock directly to the public at the initial public offering price set forth on the cover page of this prospectus and to certain dealers at that price less a concession not in excess of $ per share. After the initial offering of the shares to the public, if all of the shares of common stock are not sold at the initial public offering price, the underwriters may change the offering price and the other selling terms. Sales of any shares made outside of the United States may be made by affiliates of the underwriters.

The underwriters have an option to buy up to additional shares of common stock from us to cover sales of shares by the underwriters which exceed the number of shares specified in the table above. The underwriters have 30 days from the date of this prospectus to exercise this option to purchase additional shares. If any shares are purchased with this option to purchase additional shares, the underwriters will purchase shares in approximately the same proportion as shown in the table above. If any additional shares of common stock are purchased, the underwriters will offer the additional shares on the same terms as those on which the shares are being offered.

The underwriting fee is equal to the public offering price per share of common stock less the amount paid by the underwriters to us per share of common stock. The underwriting fee is $ per share. The following table shows the per share and total underwriting discounts and commissions to be paid to the underwriters assuming both no exercise and full exercise of the underwriters' option to purchase additional shares.

	Without Option to Purchase Additional Shares Exercise	With Full Option to Purchase Additional Shares Exercise
Per Share	$	$
Total	$	$

We estimate that the total expenses of this offering, including registration, filing and listing fees, printing fees and legal and accounting expenses, but excluding the underwriting discounts and commissions, will be approximately $. We have agreed to reimburse the underwriters for expenses relating to the clearance of this offering with the Financial Industry Regulatory Authority, Inc. in an amount up to $.

A prospectus in electronic format may be made available on the web sites maintained by one or more underwriters, or selling group members, if any, participating in the offering. The underwriters may agree to allocate a number of shares to underwriters and selling group members for sale to their online brokerage account holders. Internet distributions will be allocated by the representatives to underwriters and selling group members that may make Internet distributions on the same basis as other allocations.

We have agreed that we will not, subject to certain exceptions, (i) offer, pledge, sell, contract to sell, sell any option or contract to purchase, purchase any option or contract to sell, grant any option, right or warrant to purchase, hedge, lend, or otherwise transfer or dispose of, directly or indirectly, or submit to, or file with, the Securities and Exchange Commission a registration statement under the Securities Act relating to, any shares of our common stock or any securities convertible into or exercisable or exchangeable for any shares of our common stock, or publicly disclose the intention to undertake any of the foregoing, or (ii) enter into any swap, hedging, or other agreement that transfers, in whole or in part, any of the economic consequences of ownership of any shares of common stock or any such other securities, (regardless of whether any of these transactions are to be settled by the delivery of shares of common stock or such other securities, in cash or otherwise), in each case without the prior written consent of J.P. Morgan Securities LLC and Goldman Sachs & Co. LLC for a period of 180 days after the date of this prospectus, other than the shares of our common stock to be sold in this offering.

The restrictions on our actions, as described above, do not apply to certain transactions, including (i) the issuance of shares of common stock or securities convertible into or exercisable for shares of our common stock pursuant to the conversion or exchange of convertible or exchangeable securities or the exercise of warrants or options (including net exercise) or the settlement of RSUs (including net settlement), in each case outstanding on the date of the underwriting agreement and described in this prospectus; (ii) grants of stock options, stock awards, restricted stock, RSUs, or other equity awards and the issuance of shares of common stock or securities convertible into or exercisable or exchangeable for shares of our common stock (whether upon the exercise of stock options or otherwise) to our employees, officers, directors, advisors, or consultants pursuant to the terms of an equity compensation plan in effect as of the closing date of this offering and described in this prospectus, provided that such recipients enter into a lock-up agreement with the underwriters; (iii) the issuance of up to 5% of the outstanding shares of common stock, or securities convertible into, exercisable for, or which are otherwise exchangeable for, common stock, immediately following the closing date of this offering, in acquisitions or other similar strategic transactions, provided that such recipients enter into a lock-up agreement with the underwriters; or (iv) the filing of any registration statement on Form S-8 relating to securities granted or to be granted pursuant to any plan in effect on the date of the underwriting agreement and described in this prospectus or any assumed benefit plan pursuant to an acquisition or similar strategic transaction.

Our directors and executive officers, and substantially all of our securityholders (such persons, the lock-up parties) have entered into lock-up agreements with the underwriters prior to the commencement of this offering pursuant to which each lock-up party, with limited exceptions, for a period of 180 days after the date of this prospectus (such period, the restricted period), may not and may not cause any of their direct or indirect affiliates to, without the prior written consent of J.P. Morgan Securities LLC and Goldman Sachs & Co. LLC, (i) offer, pledge, sell, contract to sell, sell any option or contract to purchase, purchase any option or contract to sell, grant any option, right or warrant to purchase, lend, or otherwise transfer or dispose of, directly or indirectly, any shares of our common stock or any securities convertible into or exercisable or exchangeable for our common stock (including without limitation, our common stock or such other securities which may be deemed to be beneficially owned by the lock-up party in accordance with the rules and regulations of the Securities and Exchange Commission and securities which may be issued upon exercise of a stock option or warrant) (collectively with the common stock, the lock-up securities), (ii) enter into any hedging, swap or other agreement or transaction that transfers, in whole or in part, any of the economic consequences of ownership of the lock-up securities, whether any such transaction described in clause (i) or (ii) above is to be settled by delivery of the lock-up securities, in cash or otherwise, (iii) make any demand for or exercise any right with respect to the registration of any the lock up securities, or (iv) publicly disclose the intention to do any of the foregoing.

Such persons or entities have further acknowledged that these undertakings preclude them from engaging from engaging in any hedging or other transactions or arrangements (including, without limitation, any short sale or the purchase or sale of, or entry into, any put or call option, or combination thereof, forward, swap or any other derivative transaction or instrument, however described or defined) designed or intended, or which could reasonably be expected to lead to or result in, a sale or disposition or transfer (whether by the lock-up party or any other person) of any economic consequences of ownership, in whole or in part, directly or indirectly, of any lock-up securities, whether any such transaction or arrangement (or instrument provided for thereunder) would be settled by delivery of lock-up securities, in cash or otherwise. Such persons or entities further confirm that they have furnished the representatives with the details of any transaction such persons or entities, or any of their respective affiliates, is a party to as of the date hereof, which transaction would have been restricted by the lock-up agreements if it had been entered into by such persons or entities during the restricted period.

The restrictions described in the immediately preceding paragraph and contained in the lock-up agreements between the underwriters and the lock-up parties do not apply, subject in certain cases to various conditions, to certain transactions, including:

(i) transfers of lock-up securities:

(1) as bona fide gifts, or for bona fide estate planning purposes, provided that, such transfer shall not involve a disposition for value and each donee, devisee, transferee or distributee shall execute and deliver to the representatives a lock-up letter in the form of the lock-up agreements, provided further that, no filing by any party (donor, donee, devisee, transferor, transferee, distributer or distributee) under the Exchange Act, or other public announcement shall be required or shall be made voluntarily in connection with such transfer or distribution (other than a filing on a Form 5 made after the expiration of the restricted period);

(2) by will, other testamentary document or intestacy, provided that, such transfer shall not involve a disposition for value and each donee, devisee, transferee or distributee shall execute and deliver to the representatives a lock-up letter in the form of the lock-up agreements, provided further that, no filing by any party (donor, donee, devisee, transferor, transferee, distributer or distributee) under the Exchange Act, or other public announcement shall be required or shall be made voluntarily in connection with such transfer or distribution (other than a filing on a Form 5 made after the expiration of the restricted period);

(3) to any trust for the direct or indirect benefit of the lock-up party or the immediate family of the lock-up party, or if the lock-up party is a trust, to a trustor or beneficiary of the trust or to the estate of a beneficiary of such trust (for purposes of the lock-up agreement, “immediate family” shall mean any relationship by blood, current or former marriage, domestic partnership or adoption, not more remote than first cousin), provided that, such transfer shall not involve a disposition for value and each donee, devisee, transferee or distributee shall execute and deliver to the representatives a lock-up letter in the form of the lock-up agreements, provided further that, no filing by any party (donor, donee, devisee, transferor, transferee, distributer or distributee) under the Exchange Act, or other public announcement shall be required or shall be made voluntarily in connection with such transfer or distribution (other than a filing on a Form 5 made after the expiration of the restricted period);

(4) to a partnership, limited liability company or other entity of which the lock-up party and the immediate family of the lock-up party are the legal and beneficial owner of all of the outstanding equity securities or similar interests, provided that, such transfer shall not involve a disposition for value and each donee, devisee, transferee or distributee shall execute and deliver to the representatives a lock-up letter in the form of the lock-up agreements, provided further that, no filing by any party (donor, donee, devisee, transferor, transferee, distributer or distributee) under the Exchange Act, or other public announcement shall be required or shall be made voluntarily in connection with such transfer or distribution (other than a filing on a Form 5 made after the expiration of the restricted period);

(5) to a nominee or custodian of a person or entity to whom a disposition or transfer would be permissible under clauses (1) through (4), provided that, such transfer shall not involve a disposition for value and each donee, devisee, transferee or distributee shall execute and deliver to the representatives a lock-up letter in the form of the lock-up agreements, provided further that, no filing by any party (donor, donee, devisee, transferor, transferee, distributer or distributee) under the Exchange Act, or other public announcement shall be required or shall be made voluntarily in connection with such transfer or distribution (other than a filing on a Form 5 made after the expiration of the restricted period);

(6) if the lock-up party is a corporation, partnership, limited liability company, trust or other business entity, (A) to another corporation, partnership, limited liability company, trust or other business entity that is an affiliate (as defined in Rule 405 promulgated under the Securities Act, as amended) of the lock-up party, or to any investment fund or other entity controlling, controlled by, managing or managed by or under common control with the lock-up party or affiliates of the lock-up party (including, for the avoidance of doubt, where the lock-up party is a partnership, to its general partner or a successor partnership or fund, or any other funds managed by such partnership), or (B) as part of a distribution, transfer or disposition to partners, members, shareholders or other equity holders of the lock-up party, provided that, such transfer shall not involve a disposition for value and each donee, devisee, transferee or distributee shall execute and deliver to the representatives a lock-up letter in the form of the lock-up agreements, provided further that, no filing by any party (donor, donee, devisee, transferor, transferee, distributer or distributee) under the Exchange Act, or other public announcement shall be required or shall be made voluntarily in connection with such transfer or distribution (other than a filing on a Form 5 made after the expiration of the restricted period);

(7) by operation of law, such as pursuant to a qualified domestic order, divorce settlement, divorce decree or separation agreement, provided that, such transfer shall not involve a disposition for value and each donee, devisee, transferee or distributee shall execute and deliver to the representatives a lock-up letter in the form of the lock-up agreements, provided further that no public filing, report or announcement shall be voluntarily made and if any filing under Section 16(a) of the Exchange Act, or other public filing, report or announcement reporting a reduction in beneficial ownership of shares of common stock in connection with such transfer or distribution shall be legally required during the restricted period, such filing, report or announcement shall clearly indicate in the footnotes thereto the nature and conditions of such transfer

(8) to us from an employee upon death, disability or termination of employment, in each case, of such employee, provided that no public filing, report or announcement shall be voluntarily made and if any filing under Section 16(a) of the Exchange Act, or other public filing, report or announcement reporting a reduction in beneficial ownership of shares of common stock in connection with such transfer or distribution shall be legally required during the restricted period, such filing, report or announcement shall clearly indicate in the footnotes thereto the nature and conditions of such transfer;

(9) as part of a sale of lock-up securities acquired in open market transactions after the closing date of this offering, provided that, no filing by any party (donor, donee, devisee, transferor, transferee, distributer or distributee) under the Exchange Act, or other public announcement shall be required or shall be made voluntarily in connection with such transfer or distribution (other than a filing on a Form 5 made after the expiration of the restricted period);

(10) to us in connection with the vesting, settlement, or exercise of restricted stock units, options, warrants or other rights to purchase shares of common stock (including, in each case, by way of “net” or “cashless” exercise), including for the payment of exercise price and tax and remittance payments due as a result of the vesting, settlement, or exercise of such restricted stock units,

options, warrants or rights, provided that any such shares of common stock received upon such exercise, vesting or settlement shall be subject to the terms of the lock-up agreement, and provided further that any such restricted stock units, options, warrants or rights are held by the lock-up party pursuant to an agreement or equity awards granted under a stock incentive plan or other equity award plan, each such agreement or plan which is described in this prospectus, provided no public filing, report or announcement reporting a reduction in beneficial ownership of shares of common stock shall be required or shall be voluntarily made during the restricted period within 60 days after the date of pricing, and after such 60th day, if the lock-up party is required to file a report reporting a reduction in beneficial ownership of shares of common stock during the restricted period, the lock-up party shall clearly indicate in the footnotes thereto that the filing relates to the circumstances described in this clause and that the shares of common stock received upon exercise of the stock option or warrant or restricted stock unit or other right or vesting event are subject to the lock-up agreement, and no public filing, report or announcement shall be voluntarily made, or

(11) pursuant to a bona fide third-party tender offer, merger, consolidation or other similar transaction that is approved by our board of directors and made to all holders of our capital stock involving a change of control (as defined in the lock-up agreement) of us, provided that in the event that such tender offer, merger, consolidation or other similar transaction is not completed, the lock-up securities shall remain subject to the provisions of the lock-up agreement;

(ii) exercise outstanding options, settle restricted stock units or other equity awards or exercise warrants pursuant to plans described in this prospectus; provided that any lock-up securities received upon such exercise, vesting or settlement shall be subject to the terms of the lock-up agreement;

(iii) the conversion of outstanding preferred stock, warrants to acquire preferred stock or convertible securities into shares of common stock or warrants to acquire shares of common stock; provided that any such shares of common stock or warrants received upon such conversion shall be subject to the terms of the lock-up agreement; and

(iv) the establishment by lock-up parties of trading plans under Rule 10b5-1 under the Exchange Act for the transfer of the lock-up securities, provided that (1) such plan does not provide for the transfer of lock-up securities during the restricted period and (2) no filing by any party under the Exchange Act or other public announcement shall be required or made voluntarily in connection with such trading plan during the restricted period.

J.P. Morgan Securities LLC and Goldman Sachs & Co. LLC, in their sole discretion, may release the securities subject to any of the lock-up agreements with the underwriters described above, in whole or in part at any time.

We have agreed to indemnify the underwriters against certain liabilities, including liabilities under the Securities Act.

We have applied to list our shares of common stock on the Nasdaq Global Market under the symbol “OMIC.”

In connection with this offering, the underwriters may engage in stabilizing transactions, which involves making bids for, purchasing and selling shares of common stock in the open market for the purpose of preventing or retarding a decline in the market price of the common stock while this offering is in progress. These stabilizing transactions may include making short sales of common stock, which involves the sale by the underwriters of a greater number of shares of common stock than they are required to purchase in this offering, and purchasing shares of common stock on the open market to cover positions created by short sales. Short sales may be “covered” shorts, which are short positions in an amount not greater than the underwriters’ option to purchase additional shares referred to above, or may be “naked” shorts, which are short positions in excess of that amount.

The underwriters may close out any covered short position either by exercising their option to purchase additional shares, in whole or in part, or by purchasing shares in the open market. In making this determination, the underwriters will consider, among other things, the price of shares available for purchase in the open market compared to the price at which the underwriters may purchase shares through the option to purchase additional shares. A naked short position is more likely to be created if the underwriters are concerned that there may be downward pressure on the price of the common stock in the open market that could adversely affect investors who purchase in this offering. To the extent that the underwriters create a naked short position, they will purchase shares in the open market to cover the position.

The underwriters have advised us that, pursuant to Regulation M of the Securities Act, they may also engage in other activities that stabilize, maintain or otherwise affect the price of the common stock, including the imposition of penalty bids. This means that if the representatives of the underwriters purchase common stock in the open market in stabilizing transactions or to cover short sales, the representatives can require the underwriters that sold those shares as part of this offering to repay the underwriting discount received by them.

These activities may have the effect of raising or maintaining the market price of the common stock or preventing or retarding a decline in the market price of the common stock, and, as a result, the price of the common stock may be higher than the price that otherwise might exist in the open market. If the underwriters commence these activities, they may discontinue them at any time. The underwriters may carry out these transactions on the Nasdaq, in the over-the-counter market or otherwise.

Prior to this offering, there has been no public market for our common stock. The initial public offering price will be determined by negotiations between us and the representatives of the underwriters. In determining the initial public offering price, we and the representatives of the underwriters expect to consider a number of factors including:

- the information set forth in this prospectus and otherwise available to the representatives;
- our prospects and the history and prospects for the industry in which we compete;
- an assessment of our management;
- our prospects for future earnings;
- the general condition of the securities markets at the time of this offering;
- the recent market prices of, and demand for, publicly traded common stock of generally comparable companies; and
- other factors deemed relevant by the underwriters and us.

Neither we nor the underwriters can assure investors that an active trading market will develop for shares of our common stock, or that the shares will trade in the public market at or above the initial public offering price.

Directed Share Program

At our request, the underwriters have reserved up to 5% of the common stock being offered by this prospectus for sale at the initial public offering price to our directors, officers, employees and other individuals associated with us and members of their families. The sales will be made by UBS Financial Services Inc., a selected dealer affiliated with UBS Securities LLC, an underwriter of this offering, through a directed share program. We do not know if these persons will choose to purchase all or any portion of these reserved shares, but any purchases they do make will reduce the number of shares available to the general public. Any reserved shares not so purchased will be offered by the underwriters to the general public on the same terms as the other shares of common stock. Participants in the directed share program who purchase more than $1 million of shares shall be subject to a 25-day lock-up with respect to any shares sold to them pursuant to that program. This lock-up will have similar restrictions and an identical extension provision to the lock-up agreements described below. Any shares sold in the directed share program to our directors or executive officers shall be subject to the lock-up agreements described below.

Other Relationships

Certain of the underwriters and their affiliates have provided in the past to us and our affiliates and may provide from time to time in the future certain commercial banking, financial advisory, investment banking and other services for us and such affiliates in the ordinary course of their business, for which they have received and may continue to receive customary fees and commissions. In addition, from time to time, certain of the underwriters and their affiliates may effect transactions for their own account or the account of customers, and hold on behalf of themselves or their customers, long or short positions in our debt or equity securities or loans, and may do so in the future.

Selling Restrictions

Other than in the United States, no action has been taken by us or the underwriters that would permit a public offering of the securities offered by this prospectus in any jurisdiction where action for that purpose is required. The securities offered by this prospectus may not be offered or sold, directly or indirectly, nor may this prospectus or any other offering material or advertisements in connection with the offer and sale of any such securities be distributed or published in any jurisdiction, except under circumstances that will result in compliance with the applicable rules and regulations of that jurisdiction. Persons into whose possession this prospectus comes are advised to inform themselves about and to observe any restrictions relating to the offering and the distribution of this prospectus. This prospectus does not constitute an offer to sell or a solicitation of an offer to buy any securities offered by this prospectus in any jurisdiction in which such an offer or a solicitation is unlawful.

Notice to Prospective Investors in the European Economic Area

In relation to each Member State of the European Economic Area (each a Relevant State), no shares have been offered or will be offered pursuant to the offering to the public in that Relevant State prior to the publication of a prospectus in relation to the shares which has been approved by the competent authority in that Relevant State or, where appropriate, approved in another Relevant State and notified to the competent authority in that Relevant State, all in accordance with the Prospectus Regulation, except that the shares may be offered to the public in that Relevant State at any time:

(i) to any legal entity which is a qualified investor as defined under Article 2 of the Prospectus Regulation;

(ii) to fewer than 150 natural or legal persons (other than qualified investors as defined under Article 2 of the Prospectus Regulation), subject to obtaining the prior consent of the representatives for any such offer; or

(iii) in any other circumstances falling within Article 1(4) of the Prospectus Regulation,

provided that no such offer of shares shall require us or any of the representatives to publish a prospectus pursuant to Article 3 of the Prospectus Regulation or supplement a prospectus pursuant to Article 23 of the Prospectus Regulation.

For the purposes of this provision, the expression an “offer to the public” in relation to shares in any Relevant State means the communication in any form and by any means of sufficient information on the terms of the offer and any shares to be offered so as to enable an investor to decide to purchase or subscribe for any shares, and the expression “Prospectus Regulation” means Regulation (EU) 2017/1129.

Notice to Prospective Investors in the United Kingdom

No shares have been offered or will be offered pursuant to the offering to the public in the United Kingdom prior to the publication of a prospectus in relation to the shares which has been approved by the Financial Conduct Authority, except that the shares may be offered to the public in the United Kingdom at any time:

(i) to any legal entity which is a qualified investor as defined under Article 2 of the UK Prospectus Regulation;

(ii) to fewer than 150 natural or legal persons (other than qualified investors as defined under Article 2 of the UK Prospectus Regulation), subject to obtaining the prior consent of the representatives for any such offer; or

(iii) in any other circumstances falling within Section 86 of the FSMA,

provided that no such offer of the shares shall require the Issuer or any Manager to publish a prospectus pursuant to Section 85 of the FSMA or supplement a prospectus pursuant to Article 23 of the UK Prospectus Regulation. For the purposes of this provision, the expression an "offer to the public" in relation to the shares in the United Kingdom means the communication in any form and by any means of sufficient information on the terms of the offer and any shares to be offered so as to enable an investor to decide to purchase or subscribe for any shares and the expression "UK Prospectus Regulation" means Regulation (EU) 2017/1129 as it forms part of domestic law by virtue of the European Union (Withdrawal) Act 2018.

Notice to Prospective Investors in Canada

The shares may be sold only to purchasers purchasing, or deemed to be purchasing, as principal that are accredited investors, as defined in National Instrument 45-106 Prospectus Exemptions or subsection 73.3(1) of the Securities Act (Ontario), and are permitted clients, as defined in National Instrument 31-103 Registration Requirements, Exemptions and Ongoing Registrant Obligations. Any resale of the shares must be made in accordance with an exemption from, or in a transaction not subject to, the prospectus requirements of applicable securities laws.

Securities legislation in certain provinces or territories of Canada may provide a purchaser with remedies for rescission or damages if this prospectus (including any amendment thereto) contains a misrepresentation, provided that the remedies for rescission or damages are exercised by the purchaser within the time limit prescribed by the securities legislation of the purchaser's province or territory. The purchaser should refer to any applicable provisions of the securities legislation of the purchaser's province or territory for particulars of these rights or consult with a legal advisor.

Pursuant to section 3A.3 of National Instrument 33-105 Underwriting Conflicts (NI 33-105), the underwriters are not required to comply with the disclosure requirements of NI 33-105 regarding underwriter conflicts of interest in connection with this offering.

Notice to Prospective Investors in Switzerland

The shares may not be publicly offered in Switzerland and will not be listed on the SIX Swiss Exchange (SIX) or on any other stock exchange or regulated trading facility in Switzerland. This document does not constitute a prospectus within the meaning of, and has been prepared without regard to the disclosure standards for issuance prospectuses under art. 652a or art. 1156 of the Swiss Code of Obligations or the disclosure standards for listing prospectuses under art. 27 ff. of the SIX Listing Rules or the listing rules of any other stock exchange or regulated trading facility in Switzerland. Neither this document nor any other offering or marketing material relating to the shares or the offering may be publicly distributed or otherwise made publicly available in Switzerland.

Neither this document nor any other offering or marketing material relating to the offering, the Company, the shares have been or will be filed with or approved by any Swiss regulatory authority. In particular, this document will not be filed with, and the offer of shares will not be supervised by, the Swiss Financial Market Supervisory Authority FINMA (FINMA), and the offer of shares has not been and will not be authorized under the Swiss Federal Act on Collective Investment Schemes (CISA). The investor protection afforded to acquirers of interests in collective investment schemes under the CISA does not extend to acquirers of shares.

Notice to Prospective Investors in the Dubai International Financial Centre

This document relates to an Exempt Offer in accordance with the Markets Rules 2012 of the Dubai Financial Services Authority (DFSA). This document is intended for distribution only to persons of a type specified in the Markets Rules 2012 of the DFSA. It must not be delivered to, or relied on by, any other person. The DFSA has no responsibility for reviewing or verifying any documents in connection with Exempt Offers. The DFSA has not approved this prospectus supplement nor taken steps to verify the information set forth herein and has no responsibility for this document. The securities to which this document relates may be illiquid and/or subject to restrictions on their resale. Prospective purchasers of the securities offered should conduct their own due diligence on the securities. If you do not understand the contents of this document you should consult an authorized financial advisor.

In relation to its use in the DIFC, this document is strictly private and confidential and is being distributed to a limited number of investors and must not be provided to any person other than the original recipient, and may not be reproduced or used for any other purpose. The interests in the securities may not be offered or sold directly or indirectly to the public in the DIFC.

Notice to Prospective Investors in the United Arab Emirates

The shares have not been, and are not being, publicly offered, sold, promoted or advertised in the United Arab Emirates (including the Dubai International Financial Centre) other than in compliance with the laws of the United Arab Emirates (and the Dubai International Financial Centre) governing the issue, offering and sale of securities. Further, this prospectus does not constitute a public offer of securities in the United Arab Emirates (including the Dubai International Financial Centre) and is not intended to be a public offer. This prospectus has not been approved by or filed with the Central Bank of the United Arab Emirates, the Securities and Commodities Authority or the Dubai Financial Services Authority.

Notice to Prospective Investors in Australia

This prospectus:

- does not constitute a disclosure document or a prospectus under Chapter 6D.2 of the Corporations Act 2001 (Cth) (the Corporations Act);
- has not been, and will not be, lodged with the Australian Securities and Investments Commission (ASIC), as a disclosure document for the purposes of the Corporations Act and does not purport to include the information required of a disclosure document for the purposes of the Corporations Act; and
- may only be provided in Australia to select investors who are able to demonstrate that they fall within one or more of the categories of investors, available under section 708 of the Corporations Act (Exempt Investors).

The shares may not be directly or indirectly offered for subscription or purchased or sold, and no invitations to subscribe for or buy the shares may be issued, and no draft or definitive offering memorandum, advertisement or other offering material relating to any shares may be distributed in Australia, except where disclosure to investors is not required under Chapter 6D of the Corporations Act or is otherwise in compliance with all applicable Australian laws and regulations. By submitting an application for the shares, you represent and warrant to us that you are an Exempt Investor.

As any offer of shares under this document will be made without disclosure in Australia under Chapter 6D.2 of the Corporations Act, the offer of those securities for resale in Australia within 12 months may, under section 707 of the Corporations Act, require disclosure to investors under Chapter 6D.2 if none of the exemptions in section 708 applies to that resale. By applying for the shares you undertake to us that you will not, for a period of 12 months from the date of issue of the shares, offer, transfer, assign or otherwise alienate those shares to investors in Australia except in circumstances where disclosure to investors is not required under Chapter 6D.2 of the Corporations Act or where a compliant disclosure document is prepared and lodged with ASIC.

Notice to Prospective Investors in Japan

The shares have not been and will not be registered pursuant to Article 4, Paragraph 1 of the Financial Instruments and Exchange Act. Accordingly, none of the shares nor any interest therein may be offered or sold, directly or indirectly, in Japan or to, or for the benefit of, any "resident" of Japan (which term as used herein means any person resident in Japan, including any corporation or other entity organized under the laws of Japan), or to others for re-offering or resale, directly or indirectly, in Japan or to or for the benefit of a resident of Japan, except pursuant to an exemption from the registration requirements of, and otherwise in compliance with, the Financial Instruments and Exchange Act and any other applicable laws, regulations and ministerial guidelines of Japan in effect at the relevant time.

Notice to Prospective Investors in Hong Kong

The shares have not been offered or sold and will not be offered or sold in Hong Kong, by means of any document, other than (i) to "professional investors" as defined in the Securities and Futures Ordinance (Cap. 571 of the Laws of Hong Kong), or the SFO, of Hong Kong and any rules made thereunder; or (ii) in other circumstances which do not result in the document being a "prospectus" as defined in the Companies (Winding Up and Miscellaneous Provisions) Ordinance (Cap. 32) of Hong Kong, or the CO, or which do not constitute an offer to the public within the meaning of the CO. No advertisement, invitation or document relating to the shares has been or may be issued or has been or may be in the possession of any person for the purposes of issue, whether in Hong Kong or elsewhere, which is directed at, or the contents of which are likely to be accessed or read by, the public of Hong Kong (except if permitted to do so under the securities laws of Hong Kong) other than with respect to shares which are or are intended to be disposed of only to persons outside Hong Kong or only to "professional investors" as defined in the SFO and any rules made thereunder.

Notice to Prospective Investors in Singapore

Each representative has acknowledged that this prospectus has not been registered as a prospectus with the Monetary Authority of Singapore. Accordingly, each representative has represented and agreed that it has not offered or sold any shares or caused the shares to be made the subject of an invitation for subscription or purchase and will not offer or sell any shares or cause the shares to be made the subject of an invitation for subscription or purchase, and has not circulated or distributed, nor will it circulate or distribute, this prospectus or any other document or material in connection with the offer or sale, or invitation for subscription or purchase, of the shares, whether directly or indirectly, to any person in Singapore other than:

(i) to an institutional investor (as defined in Section 4A of the Securities and Futures Act (Chapter 289) of Singapore, as modified or amended from time to time, or the SFA) pursuant to Section 274 of the SFA;

(ii) to a relevant person (as defined in Section 275(2) of the SFA) pursuant to Section 275(1) of the SFA, or any person pursuant to Section 275(1A) of the SFA, and in accordance with the conditions specified in Section 275 of the SFA; or

(iii) otherwise pursuant to, and in accordance with the conditions of, any other applicable provision of the SFA.

Where the shares are subscribed or purchased under Section 275 of the SFA by a relevant person which is:

(i) a corporation (which is not an accredited investor (as defined in Section 4A of the SFA)) the sole business of which is to hold investments and the entire share capital of which is owned by one or more individuals, each of whom is an accredited investor; or

(ii) a trust (where the trustee is not an accredited investor) whose sole purpose is to hold investments and each beneficiary of the trust is an individual who is an accredited investor,

securities or securities-based derivatives contracts (each term as defined in Section 2(1) of the SFA) of that corporation or the beneficiaries' rights and interest (howsoever described) in that trust shall not be transferred

within six months after that corporation or that trust has acquired the shares pursuant to an offer made under Section 275 of the SFA except:

(1) to an institutional investor or to a relevant person, or to any person arising from an offer referred to in Section 275(1A) or Section 276(4)(i)(B) of the SFA;

(2) where no consideration is or will be given for the transfer;

(3) where the transfer is by operation of law;

(4) as specified in Section 276(7) of the SFA; or

(5) as specified in Regulation 37A of the Securities and Futures (Offers of Investments) (Securities and Securities-based Derivatives Contracts) Regulations 2018.

Singapore SFA Product Classification—In connection with Section 309B of the SFA and the CMP Regulations 2018, unless otherwise specified before an offer of the shares, the Company has determined, and hereby notifies all relevant persons (as defined in Section 309A(1) of the SFA), that the shares are "prescribed capital markets products" (as defined in the CMP Regulations 2018) and Excluded Investment Products (as defined in MAS Notice SFA 04-N12: Notice on the Sale of Investment Products and MAS Notice FAA-N16: Notice on Recommendations on Investment Products).

Notice to Prospective Investors in Bermuda

Shares may be offered or sold in Bermuda only in compliance with the provisions of the Investment Business Act of 2003 of Bermuda which regulates the sale of securities in Bermuda. Additionally, non-Bermudian persons (including companies) may not carry on or engage in any trade or business in Bermuda unless such persons are permitted to do so under applicable Bermuda legislation.

Notice to Prospective Investors in Saudi Arabia

This document may not be distributed in the Kingdom of Saudi Arabia except to such persons as are permitted under the Offers of Securities Regulations as issued by the board of the Saudi Arabian Capital Market Authority, or CMA, pursuant to resolution number 2-11-2004 dated 4 October 2004 as amended by resolution number 1-28-2008, as amended. The CMA does not make any representation as to the accuracy or completeness of this document and expressly disclaims any liability whatsoever for any loss arising from, or incurred in reliance upon, any part of this document. Prospective purchasers of the securities offered hereby should conduct their own due diligence on the accuracy of the information relating to the securities. If you do not understand the contents of this document, you should consult an authorized financial adviser.

Notice to Prospective Investors in the British Virgin Islands

The shares are not being, and may not be offered to the public or to any person in the British Virgin Islands for purchase or subscription by or on behalf of the Company. The shares may be offered to companies incorporated under the BVI Business Companies Act, 2004 (British Virgin Islands), or BVI Companies, but only where the offer will be made to, and received by, the relevant BVI Company entirely outside of the British Virgin Islands.

Notice to Prospective Investors in China

This prospectus will not be circulated or distributed in the PRC and the shares will not be offered or sold, and will not be offered or sold to any person for re-offering or resale directly or indirectly to any residents of the PRC except pursuant to any applicable laws and regulations of the PRC. Neither this prospectus nor any advertisement or other offering material may be distributed or published in the PRC, except under circumstances that will result in compliance with applicable laws and regulations.

Notice to Prospective Investors in Korea

The shares have not been and will not be registered under the Financial Investments Services and Capital Markets Act of Korea and the decrees and regulations thereunder, or the FSCMA, and the shares have been and will be offered in Korea as a private placement under the FSCMA. None of the shares may be offered, sold or delivered directly or indirectly, or offered or sold to any person for re-offering or resale, directly or indirectly, in Korea or to any resident of Korea except pursuant to the applicable laws and regulations of Korea, including the FSCMA and the Foreign Exchange Transaction Law of Korea and the decrees and regulations thereunder, or the FETL. The shares have not been listed on any of the securities exchanges in the world including, without limitation, the Korea Exchange in Korea. Furthermore, the purchaser of the shares shall comply with all applicable regulatory requirements (including but not limited to requirements under the FETL) in connection with the purchase of the shares. By the purchase of the shares, the relevant holder thereof will be deemed to represent and warrant that if it is in Korea or is a resident of Korea, it purchased the shares pursuant to the applicable laws and regulations of Korea.

Notice to Prospective Investors in Malaysia

No prospectus or other offering material or document in connection with the offer and sale of the shares has been or will be registered with the Securities Commission of Malaysia, or Commission, for the Commission's approval pursuant to the Capital Markets and Services Act 2007. Accordingly, this prospectus and any other document or material in connection with the offer or sale, or invitation for subscription or purchase, of the shares may not be circulated or distributed, nor may the shares be offered or sold, or be made the subject of an invitation for subscription or purchase, whether directly or indirectly, to persons in Malaysia other than (i) a closed end fund approved by the Commission; (ii) a holder of a Capital Markets Services License; (iii) a person who acquires the shares, as principal, if the offer is on terms that the shares may only be acquired at a consideration of not less than RM250,000 (or its equivalent in foreign currencies) for each transaction; (iv) an individual whose total net personal assets or total net joint assets with his or her spouse exceeds RM3 million (or its equivalent in foreign currencies), excluding the value of the primary residence of the individual; (v) an individual who has a gross annual income exceeding RM300,000 (or its equivalent in foreign currencies) per annum in the preceding twelve months; (vi) an individual who, jointly with his or her spouse, has a gross annual income of RM400,000 (or its equivalent in foreign currencies), per annum in the preceding twelve months; (vii) a corporation with total net assets exceeding RM10 million (or its equivalent in a foreign currencies) based on the last audited accounts; (viii) a partnership with total net assets exceeding RM10 million (or its equivalent in foreign currencies); (ix) a bank licensee or insurance licensee as defined in the Labuan Financial Services and Securities Act 2010; (x) an Islamic bank licensee or takaful licensee as defined in the Labuan Financial Services and Securities Act 2010; and (xi) any other person as may be specified by the Commission; provided that, in the each of the preceding categories (i) to (xi), the distribution of the shares is made by a holder of a Capital Markets Services License who carries on the business of dealing in securities. The distribution in Malaysia of this prospectus is subject to Malaysian laws. This prospectus does not constitute and may not be used for the purpose of public offering or an issue, offer for subscription or purchase, invitation to subscribe for or purchase any securities requiring the registration of a prospectus with the Commission under the Capital Markets and Services Act 2007.

Notice to Prospective Investors in Taiwan

The shares have not been and will not be registered with the Financial Supervisory Commission of Taiwan pursuant to relevant securities laws and regulations and may not be sold, issued or offered within Taiwan through a public offering or in circumstances which constitutes an offer within the meaning of the Securities and Exchange Act of Taiwan that requires a registration or approval of the Financial Supervisory Commission of Taiwan. No person or entity in Taiwan has been authorized to offer, sell, give advice regarding or otherwise intermediate the offering and sale of the shares in Taiwan.

Notice to Prospective Investors in South Africa

Due to restrictions under the securities laws of South Africa, no "*offer to the public*" (as such term is defined in the South African Companies Act, No. 71 of 2008 (as amended or re-enacted), or the South African

Companies Act) is being made in connection with the issue of the shares in South Africa. Accordingly, this document does not, nor is it intended to, constitute a "*registered prospectus*" (as that term is defined in the South African Companies Act) prepared and registered under the South African Companies Act and has not been approved by, and/or filed with, the South African Companies and Intellectual Property Commission or any other regulatory authority in South Africa. The shares are not offered, and the offer shall not be transferred, sold, renounced or delivered, in South Africa or to a person with an address in South Africa, unless one or other of the following exemptions stipulated in section 96 (1) applies:

Section 96 (1)(a)	the offer, transfer, sale, renunciation or delivery is to: (i) persons whose ordinary business, or part of whose ordinary business, is to deal in securities, as principal or agent; (ii) the South African Public Investment Corporation; (iii) persons or entities regulated by the Reserve Bank of South Africa; (iv) authorized financial service providers under South African law; (v) financial institutions recognized as such under South African law; (vi) a wholly-owned subsidiary of any person or entity contemplated in (c), (d) or (e), acting as agent in the capacity of an authorized portfolio manager for a pension fund, or as manager for a collective investment scheme (in each case duly registered as such under South African law); or (vii) any combination of the person in (i) to (vi); or
Section 96 (1) (b)	the total contemplated acquisition cost of the securities, for any single addressee acting as principal is equal to or greater than ZAR1,000,000 or such higher amount as may be promulgated by notice in the Government Gazette of South Africa pursuant to section 96(2)(a) of the South African Companies Act.

Information made available in this prospectus should not be considered as "advice" as defined in the South African Financial Advisory and Intermediary Services Act, 2002.

LEGAL MATTERS

The validity of the issuance of our common stock offered in this prospectus will be passed upon for us by Gunderson Dettmer Stough Villeneuve Franklin & Hachigian, LLP, San Diego, California. Cooley LLP is representing the underwriters in this offering. Certain investment partnerships comprised of partners of Gunderson Dettmer Stough Villeneuve Franklin & Hachigian, LLP, own an interest representing less than 1% of the shares of our common stock.

EXPERTS

Ernst & Young LLP, independent registered public accounting firm, has audited our financial statements at December 31, 2019 and 2020, and for each of the two years then ended, as set forth in their report. We've included our financial statements in the prospectus and elsewhere in the registration statement in reliance on Ernst & Young LLP's report, given on their authority as experts in accounting and auditing.

WHERE YOU CAN FIND ADDITIONAL INFORMATION

We have filed with the SEC a registration statement on Form S-1 under the Securities Act of 1933, as amended, with respect to the shares of common stock offered by this prospectus. This prospectus, which constitutes a part of the registration statement, does not contain all of the information set forth in the registration statement or the exhibits, schedules and amendments to the registration statement. Please refer to the registration statement and to the exhibits and schedules for further information with respect to the common stock offered by this prospectus. Statements contained in this prospectus regarding the contents of any contract, agreement or other document are only summaries. With respect to any contract, agreement or document that is filed as an exhibit to the registration statement, you should refer to the exhibit for a copy of the contract, agreement or document, and each statement in this prospectus regarding that contract, agreement or document is qualified by reference to the exhibit. The SEC maintains an Internet website that contains the registration statement of which this prospectus forms a part, as well as the exhibits thereto. These documents, along with future reports, proxy statements and other information about us, are available at the SEC's website, www.sec.gov. The information on the SEC's web site is not part of this prospectus, and any references to this web site or any other web site are inactive textual references only.

Upon completion of this offering, we will become subject to the information and reporting requirements of the Exchange Act, and, in accordance with this law, will be required to file periodic reports, proxy statements and other information with the SEC. These periodic reports, proxy statements and other information will be available on the SEC's website referred to above. We also maintain a website at www.singulargenomics.com, at which you may access these materials free of charge as soon as reasonably practicable after they are electronically filed with, or furnished to, the SEC. The information contained on, or that can be accessed through, our website is not a part of this prospectus. Investors should not rely on any such information in deciding whether to purchase our common stock. We have included our website address in this prospectus solely as an inactive textual reference.

SINGULAR GENOMICS SYSTEMS, INC.

INDEX TO THE FINANCIAL STATEMENTS

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Stockholders and the Board of Directors of Singular Genomics Systems, Inc.

Opinion on the Financial Statements

We have audited the accompanying balance sheets of Singular Genomics Systems, Inc. (the Company) as of December 31, 2019 and 2020, the related statements of operations and comprehensive loss, changes in convertible preferred stock and stockholders' deficit, and cash flows for the years then ended, and the related notes (collectively referred to as the "financial statements"). In our opinion, the financial statements present fairly, in all material respects, the financial position of the Company at December 31, 2019 and 2020, and the results of its operations and its cash flows for the year then ended in conformity with U.S. generally accepted accounting principles.

Basis for Opinion

These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on the Company's financial statements based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (PCAOB) and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. The Company is not required to have, nor were we engaged to perform, an audit of its internal control over financial reporting. As part of our audit we are required to obtain an understanding of internal control over financial reporting but not for the purpose of expressing an opinion on the effectiveness of the Company's internal control over financial reporting. Accordingly, we express no such opinion.

Our audits included performing procedures to assess the risks of material misstatement of the financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. We believe that our audits provide a reasonable basis for our opinion.

/s/ Ernst & Young LLP

We have served as the Company's auditor since 2018.

San Diego, California
March 19, 2021

SINGULAR GENOMICS SYSTEMS, INC.

BALANCE SHEETS
(in thousands, except share, liquidation preference, and par value amounts)

	December 31, 2019	December 31, 2020	March 31, 2021 (unaudited)
Assets			
Current assets:			
Cash and cash equivalents	$ 5,500	$ 11,688	$ 45,526
Short-term investments	40,696	15,231	104,595
Prepaid expenses and other assets	261	652	1,385
Total current assets	46,457	27,571	151,506
Property and equipment, net	1,613	2,368	2,750
Restricted cash	23	482	482
Other long-term assets	81	81	885
Total assets	$ 48,174	$ 30,502	$ 155,623
Liabilities, Convertible Preferred Stock and Stockholders' deficit			
Current liabilities:			
Accounts payable	$ 561	$ 427	$ 657
Accrued expenses	460	1,592	2,177
Current portion of long-term debt, net of issuance costs	—	926	2,183
Warrant liability	64	451	2,653
Other short-term liabilities	27	294	236
Total current liabilities	1,112	3,690	7,906
Convertible promissory notes (including related party amounts of $48,500)	—	—	141,900
Long-term debt, net of current portion and issuance costs	2,400	8,469	7,290
Other long-term liabilities	173	714	2,685
Total liabilities	3,685	12,873	159,781
Commitment and contingencies (Note 8)			
Series Seed convertible preferred stock, $0.0001 par value; 6,520,790 shares authorized and outstanding at December 31, 2019, 2020 and March 31, 2021 (unaudited); liquidation preference of $4,499,998 at December 31, 2019, 2020 and March 31, 2021 (unaudited)	4,486	4,486	4,486
Series A convertible preferred stock, $0.0001 par value; 12,932,429 shares authorized and outstanding at December 31, 2019, 2020 and March 31, 2021 (unaudited); liquidation preference of $20,000,002 at December 31, 2019, 2020 and March 31, 2021 (unaudited)	19,908	19,908	19,908
Series B convertible preferred stock, $0.0001 par value; 19,373,169 shares authorized, 19,373,169 shares outstanding at December 31, 2019, 2020 and March 31, 2021 (unaudited); liquidation preference of $44,999,997 at December 31, 2019, 2020 and March 31, 2021 (unaudited)	44,820	44,790	44,790
Stockholders' Deficit:			
Common stock, $0.0001 par value; 60,272,685 of shares authorized, 10,063,023, 10,816,937 and 12,824,184 shares outstanding at December 31, 2019, 2020 and March 31, 2021 (unaudited), respectively	1	1	1
Additional paid-in capital	440	1,552	3,735
Accumulated other comprehensive income (loss)	14	17	(32)
Accumulated deficit	(25,180)	(53,125)	(77,046)
Total stockholders' deficit	(24,725)	(51,555)	(73,342)
Total liabilities, convertible preferred stock and stockholders' deficit	$ 48,174	$ 30,502	$ 155,623

See accompanying notes.

SINGULAR GENOMICS SYSTEMS, INC.

STATEMENTS OF OPERATIONS AND COMPREHENSIVE LOSS
(in thousands, except share and per share amounts)

	Year Ended December 31,		Three Months Ended March 31,	
	2019	2020	2020	2021
			(unaudited)	
Operating expenses:				
Research and development	$ 10,484	$ 21,247	$ 4,026	$ 6,608
General and administrative	2,286	6,287	1,377	3,654
Total operating expenses	$ 12,770	$ 27,534	$ 5,403	$ 10,262
Loss from operations	(12,770)	(27,534)	(5,403)	(10,262)
Other income (expense):				
Interest and other income	463	505	216	131
Interest expense	(17)	(718)	(66)	(188)
Change in fair value of convertible promissory notes	—	—	—	(11,400)
Change in fair value of warrant liability	—	(198)	—	(2,202)
Total other income (expense)	446	(411)	150	(13,659)
Net loss	$ (12,324)	$ (27,945)	$ (5,253)	$ (23,921)
Other comprehensive loss:				
Unrealized gain (loss) on available-for-sale securities	48	3	(542)	(49)
Comprehensive loss	$ (12,276)	$ (27,942)	$ (5,795)	$ (23,970)
Net loss per share attributable to common stockholders:				
Basic and diluted	$ (1.43)	$ (2.64)	$ (0.52)	$ (2.05)
Weighted-average shares of common stock outstanding:				
Basic and diluted	8,620,121	10,575,941	10,191,923	11,652,998

See accompanying notes.

SINGULAR GENOMICS SYSTEMS, INC.

STATEMENTS OF CHANGES IN CONVERTIBLE PREFERRED STOCK AND STOCKHOLDERS' DEFICIT
(in thousands, except share data)

	Series Seed Convertible Preferred Stock		Series A Convertible Preferred Stock		Series B Convertible Preferred Stock		Common Stock		Additional Paid-In Capital	Accumulated Other Comprehensive Income (Loss)	Accumulated Deficit	Total Stockholders' Deficit
	Shares	Amount	Shares	Amount	Shares	Amount	Shares	Amount				
Balance at December 31, 2018	6,520,790	$ 4,486	12,932,429	$ 19,908	—	$ —	7,314,531	$ —	$ 195	$ (34)	$ (12,856)	$ (12,695)
Issuance of preferred stock, net of offering costs of $179	—	—	—	—	19,373,169	44,820	—	—	—	—	—	—
Vesting of restricted common stock	—	—	—	—	—	—	2,300,000	1	—	—	—	1
Vesting of common stock issued for early exercise of stock options	—	—	—	—	—	—	214,680	—	34	—	—	34
Issuance of common stock in connection with exercise of stock options	—	—	—	—	—	—	233,812	—	41	—	—	41
Stock-based compensation	—	—	—	—	—	—	—	—	170	—	—	170
Unrealized gain on available-for-sale marketable securities	—	—	—	—	—	—	—	—	—	48	—	48
Net loss	—	—	—	—	—	—					(12,324)	(12,324)
Balance at December 31, 2019	6,520,790	$ 4,486	12,932,429	$ 19,908	19,373,169	$ 44,820	10,063,023	$ 1	$ 440	$ 14	$ (25,180)	$ (24,725)
Vesting of restricted common stock (unaudited)	—	—	—	—	—	—	420,833	—	—	—	—	—
Vesting of common stock issued for early exercise of stock options (unaudited)	—	—	—	—	—	—	6,445	—	8	—	—	8
Issuance of common stock in connection with exercise of stock options (unaudited)	—	—	—	—	—	—	18,124	—	4	—	—	4
Stock-based compensation (unaudited)	—	—	—	—	—	—	—	—	239	—	—	239
Unrealized loss on available-for-sale marketable securities (unaudited)	—	—	—	—	—	—	—	—	—	(542)	—	(542)
Net loss (unaudited)	—	—	—	—	—	—	—	—	—	—	(5,253)	(5,253)
Balance at March 31, 2020 (unaudited)	6,520,790	$ 4,486	12,932,429	$ 19,908	19,373,169	$ 44,820	10,508,425	$ 1	$ 691	$ (528)	$ (30,433)	$ (30,269)

	Series Seed Convertible Preferred Stock		Series A Convertible Preferred Stock		Series B Convertible Preferred Stock		Common Stock		Additional Paid-In	Accumulated Other Comprehensive	Accumulated	Total Stockholders'
	Shares	Amount	Shares	Amount	Shares	Amount	Shares	Amount	Capital	Income (Loss)	Deficit	Deficit
Balance at December 31, 2019	6,520,790	$ 4,486	12,932,429	$ 19,908	19,373,169	$ 44,820	10,063,023	$ 1	$ 440	$ 14	$ (25,180)	$ (24,725)
Offering costs in connection with issuance of preferred stock	—	—	—	—	—	(30)	—	—	—	—	—	—
Vesting of restricted common stock	—	—	—	—	—	—	650,000	—	—	—	—	—
Vesting of common stock issued for early exercise of stock options	—	—	—	—	—	—	35,490	—	33	—	—	33
Issuance of common stock in connection with exercise of stock options	—	—	—	—	—	—	68,424	—	19	—	—	19
Stock-based compensation	—	—	—	—	—	—	—	—	1,060	—	(23,921)	(23,921)
Unrealized gain on available-for-sale marketable securities	—	—	—	—	—	—	—	—	—	3	—	3
Net loss	—	—	—	—	—	—	—	—	—	—	(27,945)	(27,945)
Balance at December 31, 2020	6,520,790	$ 4,486	12,932,429	$ 19,908	19,373,169	$ 44,790	10,816,937	$ 1	$ 1,552	$ 17	$ (53,125)	$ (51,555)
Vesting of common stock issued for early exercise of stock options (unaudited)	—	—	—	—	—	—	151,343	—	92	—	—	92
Issuance of common stock in connection with exercise of stock options (unaudited)	—	—	—	—	—	—	1,855,904	—	995	—	—	995
Stock-based compensation (unaudited)	—	—	—	—	—	—	—	—	1,096	—	—	1,096
Unrealized loss on available-for-sale marketable securities (unaudited)	—	—	—	—	—	—	—	—	—	(49)	—	(49)
Net loss (unaudited)	—	—	—	—	—	—	—	—	—	—	(23,921)	(23,921)
Balance at March 31, 2021 (unaudited)	6,520,790	$ 4,486	12,932,429	$ 19,908	19,373,169	$ 44,790	12,824,184	$ 1	$ 3,735	$ (32)	$ (77,046)	$ (73,342)

See accompanying notes.

SINGULAR GENOMICS SYSTEMS, INC.

STATEMENTS OF CASH FLOWS
(in thousands)

	Year Ended December 31,		Three Months Ended March 31,	
	2019	2020	2020	2021
			(unaudited)	
Operating activities				
Net loss	$(12,324)	$(27,945)	$ (5,253)	$ (23,921)
Adjustments to reconcile net loss to net cash used in operating activities:				
Depreciation	350	639	131	211
Stock-based compensation	170	1,060	239	1,096
Change in fair value of convertible promissory notes			—	11,400
Change in fair value of warrant liability	—	198	—	2,202
Amortization of discount on short-term investments	(10)	83	21	72
Accretion of debt issuance cost	—	234	31	78
Changes in operating assets and liabilities:				
Prepaid expenses and other assets	(146)	(391)	(174)	(264)
Other long-term assets	(81)	—	—	(804)
Accounts payable	244	(148)	128	144
Accrued expenses	259	1,132	172	585
Other short-term liabilities	27	240	9	(58)
Other long-term liabilities	112	25	(13)	74
Net cash used in operating activities	(11,399)	(24,873)	(4,709)	(9,185)
Investing activities				
Purchases of short-term investments	(42,729)	(6,077)	(2,037)	(101,608)
Maturities of short-term investments	12,029	31,462	4,694	11,654
Purchases of property and equipment	(800)	(1,380)	(261)	(507)
Net cash provided by (used in) investing activities	(31,500)	24,005	2,396	(90,461)
Financing activities				
Proceeds from issuance of common stock	41	47	10	2,984
Proceeds from issuance of Series B convertbile preferred stock, net of issuance cost	44,820	(30)	—	—
Repurchase of unvested options	(21)	(2)	—	—
Proceeds from issuance of convertible promisorry notes	—	—	—	130,500
Proceeds from long-term debt, net of issuance costs	2,464	7,500	7,500	—
Net cash provided by financing activities	47,304	7,515	7,510	133,484
Increase in cash and cash equivalents and restricted cash	4,405	6,647	5,197	33,838
Cash and cash equivalents and restricted cash, beginning of year	1,118	5,523	5,523	12,170
Cash and cash equivalents and restricted cash, end of year	$ 5,523	$ 12,170	$10,720	$ 46,008
Supplemental disclosure for cash activities				
Interest paid	$ 5	$ 461	$ 37	$ 148
Supplemental disclosure for non-cash activities				
Vesting of restricted stock	$ 35	$ 33	$ 8	$ 92
Warrant issued in connection with issuance of long-term debt	$ 64	$ 189	$ 189	$ —
Deferred offering costs in accrued expenses	$ —	$ —	$ —	$ 804
Purchase of property plant and equipment included in accounts payable	$ 80	$ 14	$ 60	$ 86

See accompanying notes.

NOTES TO THE FINANCIAL STATEMENTS
(Information as of March 31, 2021 and thereafter and for the three months ended March 31, 2020 and 2021 is unaudited; all tabular amounts presented in thousands, except share, per share and number of years)

1. Organization, Business and Basis of Presentation

Organization and Business

Singular Genomics Systems, Inc. (the "Company") is a life science technology company that is leveraging novel next generation sequencing ("NGS") and multiomics technology to build products that are designed to empower researchers and clinicians to advance science and medicine. The Company developed a novel and proprietary NGS technology, which it refers to as its "Sequencing Engine". This Sequencing Engine is the foundational platform technology that forms the basis of the Company's products in development. The Company is currently developing two integrated solutions that are purpose built to target specific applications. Its first integrated solution is targeted at the NGS market and comprises an instrument (the "G4 Instrument") and an associated menu of consumable kits, which is referred to collectively as the G4 Integrated Solution. The G4 Instrument is a benchtop next generation sequencer designed to produce fast and accurate genetic sequencing results. The integrated purpose built kits that run on the G4 Instrument address specific applications in fast growing markets including oncology and immune profiling. The Company has completed its beta pilot program and anticipates initiating an early access program followed by a commercial launch of the G4 Integrated Solution by the end of 2021, with intentions for units to ship in the first half of 2022. The Company's second integrated solution in development comprises an instrument (the "PX Instrument") and an associated menu of consumable kits, which is referred to collectively as the PX Integrated Solution. Leveraging sequencing as a universal readout, the PX Integrated Solution combines single cell analysis, spatial analysis, genomics and proteomics in one integrated instrument providing a versatile multiomics solution. The Company anticipates commercial launch of the PX Integrated Solution in 2023.

The Company was incorporated in the state of Delaware in June 2016 and has its principal operations in La Jolla, California.

Basis of Presentation

The accompanying financial statements have been prepared in conformity with accounting principles generally accepted in the United States of America ("GAAP"). Any reference in these notes to applicable guidance is meant to refer to the authoritative GAAP as found in the Accounting Standards Codification ("ASC") and Accounting Standards Updates ("ASU") of the Financial Accounting Standards Board ("FASB").

Unaudited Interim Financial Information

The accompanying interim balance sheet as of March 31 2021, the statements of operations and comprehensive loss, changes in convertible preferred stock and stockholders' deficit, and cash flows for the three months ended March 31, 2020 and 2021 and the related footnote disclosures are unaudited. In management's opinion, the unaudited interim financial statements have been prepared on the same basis as the audited financial statements and include all adjustments, which include only normal recurring adjustments, necessary for the fair presentation of the Company's financial position as of March 31, 2021 and its results of operations and cash flows for the three months ended March 31, 2020 and 2021 in accordance with GAAP. The results for the three months ended March 31, 2021 are not necessarily indicative of the results expected for the full fiscal year or any other interim period.

Liquidity and Capital Resources

The Company has experienced net losses since inception and, as of December 31, 2020 and March 31, 2021, had an accumulated deficit of $53.1 and $77.0 million, respectively. The Company has a limited operating

NOTES TO THE FINANCIAL STATEMENTS
(Information as of March 31, 2021 and thereafter and for the three months ended March 31, 2020 and 2021 is unaudited; all tabular amounts presented in thousands, except share, per share and number of years)

history and the revenue and income potential of the Company's business are unproven. From incorporation in June 2016 through December 31, 2020, substantially all of the Company's operations have been funded by the sales of equity securities and issuances of debt. In February 2021, the Company raised an aggregate of $130.5 million of proceeds through the issuance of convertible promissory notes (the "2021 Notes"). As of March 31, 2021, the Company had cash and cash equivalents and short-term investments totaling, in aggregate, $150.1 million. Management has performed an assessment and determined that the Company has sufficient resources on hand to fund its operations for a period of at least one year from the date the financial statements are issued, and as such, has the ability to continue as a going concern. However, the Company may need to seek additional funding in the future to support its operations, research and development activities and commercialization plans. If the Company is not able to generate sufficient revenue to finance its cash requirements or raise additional capital or enter into financing agreement or arrangements when required or on favorable terms, or at all, it may have to delay, reduce the scope of, or discontinue one or more development programs, delay potential commercialization or reduce the scope of sales or marketing activities, and pursue other cost cutting measures, including the reduction of headcount, scope of operations, and planned capital expenditures, which may have a material adverse effect on the Company's business, results of operations, financial condition and/or ability to fund its scheduled obligations on a timely basis, or continue as a going concern. The Company cannot be certain that it will ever be profitable or generate positive cash flow from operating activities or that, if it achieves profitability, it will be able to sustain it.

Impact of the COVID-19 Pandemic

As a result of the outbreak of a novel coronavirus ("COVID-19") pandemic, the Company has, and could continue to, experience disruptions that could severely impact its business. For instance, there have been standing "stay-at-home" orders in California, and specifically San Diego County where the Company's headquarters is located. The Company has continued to operate within the rules applicable to its business; however, an extended implementation of these governmental mandates or reinstitution of additional more stringer mandates could further impact the Company's ability to operate effectively and conduct ongoing research and development or other activities. The COVID-19 pandemic has also adversely affected the broader economy and created volatility in the financial markets, which could curtail the research and development budgets of the Company's customers, its ability to hire additional personnel and its financing prospects.

The Company is continuing to assess the impact of the COVID-19 pandemic on its current and future business and operations, as well as on the Company's industry and the healthcare system. Any of the foregoing could harm the Company's operations and the Company cannot anticipate all the ways in which it could be adversely impacted by health epidemics such as COVID-19.

2. Summary of Significant Accounting Policies

Use of Estimates

The preparation of the Company's financial statements in conformity with GAAP requires management to make estimates and assumptions that impact the reported amounts of assets, liabilities, and expenses and the disclosure of contingent assets and liabilities in the Company's financial statements and accompanying notes. Although these estimates are based on the Company's knowledge of current events and actions it may undertake in the future, actual results may significantly differ from these estimates and assumptions. Significant estimates and assumptions include the useful lives of property and equipment, the fair value of warrant liabilities, the fair value of the Company's preferred and common stock and stock-based compensation and the fair value of the 2021 Notes.

NOTES TO THE FINANCIAL STATEMENTS
(Information as of March 31, 2021 and thereafter and for the three months ended March 31, 2020 and 2021 is unaudited; all tabular amounts presented in thousands, except share, per share and number of years)

Segment Information

Operating segments are identified as components of an enterprise about which separate discrete financial information is available for evaluation by the chief operating decision-maker in making decisions regarding resource allocation and assessing performance. The Company's singular focus is the development and eventual commercialization of proprietary sequencing solutions. The Company views its operations and manages its business in one operating and reporting segment. The Company's long-lived assets are located in the United States.

Cash, Cash Equivalents and Restricted Cash

Cash and Cash Equivalents

Cash and cash equivalents include cash readily available in checking, savings, money market and sweep accounts. The Company considers all highly liquid investments with an original maturity of three months or less at the date of purchase to be cash equivalents.

Restricted Cash

Restricted cash is held in a separate restricted bank account as the collateral for the security deposits on two executed lease agreements and the collateral on the Company's corporate credit card program. The Company has classified these deposits as long-term restricted cash on its balance sheets.

The following table provides a reconciliation of cash, cash equivalents, and restricted cash reported within the balance sheets that sum to the total of the same such amounts shown in the statements of cash flows as of December 31, 2019 and 2020 and March 31, 2021 (in thousands):

	December 31,		March 31,
	2019	2020	2021 (unaudited)
Cash and cash equivalents	$5,500	$11,688	$ 45,526
Restricted cash	23	482	482
Total cash, cash equivalents and restricted cash	$5,523	$12,170	$ 46,008

Concentration of Credit Risk

Financial instruments, which potentially subject the Company to a concentration of credit risk, consist primarily of cash, cash equivalents and short-term investments. The Company maintains deposits in federally insured financial institutions in excess of federally insured limits. The Company has not experienced any losses in such accounts and management believes that the Company is not exposed to significant credit risk due to the financial position of the depository institutions in which those deposits are held.

Short-Term Investments

As of December 31, 2019 and 2020 and March 31, 2021, short-term investments primarily consisted of government and corporate debt securities, and U.S. treasury securities. The Company classifies all short-term investments as available-for-sale, as the sale of such investments may be required prior to maturity to implement management strategies, and therefore classifies all short-term investments with maturity dates beyond 90 days at the date of purchase as current assets in the accompanying balance sheets. Short-term investments are carried at fair

NOTES TO THE FINANCIAL STATEMENTS
(Information as of March 31, 2021 and thereafter and for the three months ended March 31, 2020 and 2021 is unaudited; all tabular amounts presented in thousands, except share, per share and number of years)

value with the unrealized gains and losses included in other comprehensive income (loss) as a component of stockholders' equity until realized. Any premium or discount arising at purchase is amortized and/or accreted to interest income as an adjustment to yield using the straight-line method over the life of the instrument. A decline in the market value of any short-term investment below amortized cost that is determined to be other-than-temporary will result in a revaluation of its carrying amount to fair value. The impairment is charged to earnings and a new cost basis for the security is established. No such impairment charges were recorded for any period presented. Realized gains and losses are determined using the specific identification method and are included in other income (expense).

The following tables summarize the short-term investments held at December 31, 2019, 2020 and March 31, 2021 (in thousands):

	December 31, 2019		
	Amortized Cost	Unrealized Gain	Estimated Fair Value
Asset backed securities	$ 15,149	$ 1	15,150
Corporate debt securities	25,533	13	25,546
Total short-term investments	$ 40,682	$ 14	$ 40,696

	December 31, 2020		
	Amortized Cost	Unrealized Gain	Estimated Fair Value
Asset backed securities	$ 3,938	$ 5	3,943
Corporate debt securities	11,276	12	11,288
Total short-term investments	$ 15,214	$ 17	$ 15,231

	March 31, 2021 (unaudited)		
	Amortized Cost	Unrealized Loss	Estimated Fair Value
Asset backed securities	$ 41,996	$ (10)	41,986
Corporate debt securities	62,631	(22)	62,609
Total short-term investments	$ 104,627	$ (32)	$ 104,595

The following table summarizes contractual maturities of available-for-sale debt securities held at December 31, 2019, 2020 and March 31, 2021 (in thousands):

	December 31,		March 31,
	2019	2020	2021 (unaudited)
	Estimated Fair Value	Estimated Fair Value	Estimated Fair Value
Due within one year	$ 11,497	$ 9,559	$ 65,540
After one but within five years	29,199	5,672	39,055
Total contractual maturities for available-for-sale securities	$ 40,696	$ 15,231	$ 104,595

The Company determined there was no material change in the credit risk of any of its investments.

Property and Equipment, Net

Property and equipment, net, which consists primarily of computers, software, lab equipment, furniture and fixtures, and leasehold improvements, are stated at cost less accumulated depreciation. Depreciation is calculated

NOTES TO THE FINANCIAL STATEMENTS
(Information as of March 31, 2021 and thereafter and for the three months ended March 31, 2020 and 2021 is unaudited; all tabular amounts presented in thousands, except share, per share and number of years)

using the straight-line method over the estimated useful lives of the assets (generally three to five years). Leasehold improvements are amortized over the remaining life of the lease or the useful life, whichever is shorter. Repairs and maintenance costs are charged to expense as incurred.

Deferred Offering Costs

The Company has deferred offering costs consisting of legal and accounting fees directly attributable to its planned initial public offering. The deferred offering costs will be offset against the proceeds received upon the completion of this offering. In the event this offering is terminated, all of the deferred offering costs will be expensed within the Company's statements of operations. As of March 31, 2021, $0.8 million of deferred offering costs were recorded within other long-term assets on the balance sheet.

Deferred Rent

Rent expense is recognized on a straight-line basis over the initial lease term. The difference between rent expense and amounts paid under the lease agreement is deferred and recorded in short and long-term liabilities in the accompanying balance sheet.

Impairment of Long-Lived Assets

Long-lived assets consist primarily of property and equipment. The Company reviews long-lived assets for impairment whenever events or changes in circumstances indicate the carrying amount of an asset may not be recoverable. Recoverability of assets to be held and used is measured by a comparison of the carrying amount of an asset to the future undiscounted net cash flows expected to be generated by the asset. If such assets are considered to be impaired, the impairment to be recognized is measured as the amount by which the carrying amount of the assets exceeds the fair value of the assets. Fair value would be assessed using discounted cash flows or other appropriate measures of fair value. The Company did not recognize any impairment losses for the years ended December 31, 2019 and 2020 and March 31, 2021.

Convertible Preferred Stock

The Company's Series Seed, Series A and Series B convertible preferred stock (collectively, the "convertible preferred stock") have been classified as temporary equity in the accompanying balance sheets in accordance with authoritative guidance for the classification and measurement of potentially redeemable securities whose redemption is based upon certain change in control events outside the Company's control, including the sale or transfer of the Company. The Company records all convertible preferred stock upon issuance at its respective fair value. The Company has determined not to adjust the carrying values of the convertible preferred stock to the liquidation preferences of such shares because the occurrence of any such deemed liquidation event is not probable.

Fair Value Measurements

Certain assets and liabilities are carried at fair value under GAAP and consist principally of cash equivalents, restricted cash, accounts payable, accrued liabilities, a warrant to purchase convertible preferred stock and convertible promissory notes. The carrying amounts of cash equivalents, accounts payable, and accrued liabilities approximate their related fair values due to the short-term nature of these instruments. None of the Company's non-financial assets or liabilities are recorded at fair value on a recurring basis.

As permitted under Accounting Standards Codification ("ASC") 825, Financial Instruments, ("ASC 825"), the Company has elected the fair value option to account for its convertible promissory notes issued during the

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(Information as of March 31, 2021 and thereafter and for the three months ended March 31, 2020 and 2021 is unaudited; all tabular amounts presented in thousands, except share, per share and number of years)

three months ended March 31, 2021. In accordance with ASC 825, the Company records these convertible promissory notes at fair value on it's balance sheet. Changes in fair value of the warrant to purchase convertible preferred stock and the convertible promissory notes are recorded in the statements of operations and comprehensive loss. As a result of applying the fair value option, direct costs and fees related to the convertible promissory notes were recognized as incurred and not deferred.

There are significant judgments and estimates inherent in the determination of the fair value of these liabilities. If the Company had made different assumptions including, among others, those related to the timing and probability of various corporate scenarios, discount rates, volatilities and exit valuations, the carrying values of the warrant liabilities and the 2021 Notes, and net loss and net loss per common share could have been significantly different.

The Company accounts for the convertible promissory notes at fair value and classifies the interest that has been accrued in the change in fair value of convertible promissory notes on the statement of operations.

Research and Development Expenses

The Company's research and development costs consist primarily of salaries, payroll taxes, employee benefits and stock-based compensation for personnel engaged in research and development activities; fees paid to consultants; license fees paid to third parties for use of their intellectual property, laboratory supplies and development compound materials; allocated overhead costs; and facilities and depreciation costs . All research and development costs are charged to expense as incurred.

Patent Costs

Costs related to filing and pursuing patent applications are recorded as general and administrative expenses within the Company's statements of operations and comprehensive loss and expensed as incurred since recoverability of such expenditures is uncertain.

Issuance Costs Related to Equity and Debt

The Company allocates issuance costs between the individual freestanding instruments identified on the same basis as proceeds were allocated. Issuance costs associated with the issuance of stock or equity contracts (e.g., convertible preferred stock) are recorded against the gross proceeds of the offering. Issuance costs associated with the issuance of debt is recorded as a direct reduction of the carrying amount of the debt liability but limited to the notional value of the debt. The Company accounts for the SVB Loan Agreement debt as liabilities measured at amortized cost and amortizes the resulting debt discount to interest expense using the effective interest method over the expected term of the debt pursuant.

Stock-Based Compensation

The Company accounts for stock-based compensation by measuring and recognizing compensation expense for all share-based awards made to employees and non-employees based on estimated grant-date fair values. The Company uses the straight-line method to allocate compensation cost to reporting periods over the requisite service period, which is generally the vesting period. The Company recognizes actual forfeitures by reducing the stock-based compensation in the same period as the forfeitures occur. The Company estimates the fair value of share-based awards to employees and non-employees using the Black-Scholes option pricing model. The Black-Scholes option pricing model requires the input of subjective assumptions, including fair value of common stock, expected term, expected volatility, risk-free interest rate, and expected dividend yield, which are described in greater detail below.

NOTES TO THE FINANCIAL STATEMENTS
(Information as of March 31, 2021 and thereafter and for the three months ended March 31, 2020 and 2021 is unaudited; all tabular amounts presented in thousands, except share, per share and number of years)

Estimating the fair value of equity-settled awards as of the grant date using the Black-Scholes option pricing model is affected by assumptions regarding a number of complex variables. Changes in the assumptions can materially affect the fair value and ultimately how much stock-based compensation is recognized. These inputs are subjective and generally require significant analysis and judgment to develop. These inputs are as follows:

- ***Fair value of common stock***—There has been no public market for the Company's common stock to date. The exercise price of the Company's grants was determined by the Company's board of directors based in part on valuations of the Company's common stock prepared by a third-party valuation specialist. In connection with the preparation of the financial statements for the year ended December 31, 2020 and the three months ended March 31, 2021, the Company performed a retrospective review of the fair value of its common stock related to the current events available. Based on this review, the Company recorded stock compensation as reflected in the financial statements.
- ***Expected term***—The expected term represents the average period that the Company's options granted are expected to be outstanding and is determined using the simplified method (based on the mid-point between the weighted-average vesting date and the end of the contractual term). The Company has very limited historical information to develop reasonable expectations about future exercise patterns and post-vesting employment termination behavior for its stock option grants.
- ***Expected volatility***—Since the Company has been a privately-held company and has not had any trading history for its common stock, the expected volatility was estimated based on the historical average volatility for comparable publicly traded life sciences technology companies over a period equal to the expected term of the stock option grants. The comparable companies were chosen based on their similar size, life cycle stage, or area of specialty. The Company will continue to apply this process until enough historical information regarding the volatility of its own stock price becomes available.
- ***Risk-free interest rate***—The risk-free interest rate is based on the U.S. Treasury zero coupon issues in effect at the time of grant for periods corresponding with the expected term of the options.
- ***Expected dividend yield***—The Company has never paid dividends on its common stock and have no plans to pay dividends on its common stock. Therefore, the Company used an expected dividend yield of zero.

For options granted to non-employee consultants, the fair value of these options is also measured using the Black-Scholes option pricing model reflecting the same assumptions as applied to employee options in each of the reported periods, other than the expected term which is assumed to be the remaining contractual life of the option.

The Company will continue to use judgment in evaluating the expected volatility, expected terms, and interest rates utilized for its stock-based compensation calculations on a prospective basis. Assumptions the Company used in applying the Black-Scholes option pricing model to determine the estimated fair value of its stock options granted involve inherent uncertainties and the application of significant judgment. As a result, if factors or expected outcomes change and the Company uses significantly different assumptions or estimates, its equity-based compensation could be materially different.

Income Taxes

The Company accounts for income taxes under the asset and liability method, which requires the recognition of deferred tax assets and liabilities for the expected future tax consequences of events that have been included in the financial statements. Under this method, deferred tax assets and liabilities are determined on the basis of the differences between the financial statements and tax basis of assets and liabilities using enacted tax rates in effect for the year in which the differences are expected to reverse. The effect of a change in tax rates on deferred tax assets and liabilities is recognized as income or expense in the period that includes the enactment date.

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The Company recognizes net deferred tax assets to the extent that the Company believes these assets are more likely than not to be realized. In making such a determination, management considers all available positive and negative evidence, including future reversals of existing taxable temporary differences, projected future taxable income, tax-planning strategies and results of recent operations.

If management determines that the Company would be able to realize its deferred tax assets in the future in excess of their net recorded amount, management would make an adjustment to the deferred tax asset valuation allowance, which would reduce the provision for income taxes.

The Company records uncertain tax positions on the basis of a two-step process whereby (i) management determines whether it is more likely than not that the tax positions will be sustained on the basis of the technical merits of the position and (ii) for those tax positions that meet the more-likely-than-not recognition threshold, management recognizes the largest amount of tax benefit that is more than 50% likely to be realized upon ultimate settlement with the related tax authority. The Company recognizes interest and penalties related to unrecognized tax benefits within income tax expense.

Comprehensive Income (Loss)

Comprehensive income (loss) is defined as a change in equity during a period from transactions and other events and circumstances from non-owner sources. The only component of other comprehensive income (loss) is unrealized gain (loss) on available-for-sale securities. Comprehensive gains have been reflected in the statements of operations and comprehensive loss, and as a separate component in the statements of stockholders' equity.

Net Loss Per Share

In periods of net loss, basic loss per share is computed by dividing net loss available to common stockholders by the weighted-average number of shares of common stock outstanding during the period. The convertible preferred stock contain non-forfeitable rights to dividends with the common stockholders, and therefore are considered to be participating securities. For purposes of this calculation, outstanding stock options, an outstanding warrant, convertible preferred stock and shares of common stock subject to repurchase by the Company are excluded from the calculation of diluted net loss per common share for the periods presented as their effect would be anti-dilutive. For all periods presented, there is no difference in the number of shares used to calculate basic and diluted shares outstanding due to the anti-dilutive effect of the securities.

The following table summarizes the number of potentially dilutive securities that were excluded from the Company's calculation of diluted net loss per share:

	December 31,		March 31,
	2019	2020	2021 (unaudited)
Employee stock options	6,338,939	7,274,953	4,475,799
Restricted Stock	650,000	—	—
Warrant for Series B convertible preferred stock	32,289	129,156	129,156
Series Seed convertible preferred stock	6,520,790	6,520,790	6,520,790
Series A convertible preferred stock	12,932,429	12,932,429	12,932,429
Series B convertible preferred stock	19,373,169	19,373,169	19,373,169
Total	45,197,616	46,230,497	43,431,343

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Recently Adopted Accounting Pronouncements

During 2016, the FASB issued ASU No. 2016-01, *Recognition and Measurement of Financial Assets and Financial Liabilities* ("ASU No. 2016-01") which eliminates the requirement for companies to disclose the fair value of financial instruments measured at amortized cost on the balance sheet. Furthermore, the standard requires presentation of assets and liabilities separately, by measurement category and form of financial asset on the balance sheet or accompanying notes to the financial statements. The updated guidance is effective for annual periods beginning after December 15, 2018, and early adoption is permitted. The Company adopted this standard on January 1, 2019. The Company has evaluated the effect that the updated standard had on its internal processes, financial statements and related disclosures, and has determined that the adoption did not have a material impact on the Company's financial statements.

In July 2017, the FASB issued ASU No. 2017-11, *Earnings Per Share (Topic 260); Distinguishing Liabilities from Equity (Topic 480); Derivatives and Hedging (Topic 815): Accounting for Certain Financial Instruments with Down Round Features (*"ASU 2017-11"*)*. The amendments of this ASU update the classification analysis of certain equity-linked financial instruments, or embedded features, with down round features, as well as clarify existing disclosure requirements for equity-classified instruments. When determining whether certain financial instruments should be classified as liabilities or equity instruments, a down round feature no longer precludes equity classification when assessing whether the instrument is indexed to an entity's own stock. The accounting standard update is effective for fiscal years beginning after December 15, 2019. The Company adopted this standard on January 1, 2020 and evaluated all outstanding financial instruments that would fall under the scope of ASU 2017-11. The Company has evaluated the effect that the updated standard had on its internal processes, financial statements and related disclosures, and has determined that the adoption did not have a material impact on the Company's financial statements.

In June 2018, the FASB issued ASU No. 2018-07 *Compensation-Stock Compensation (Topic 718), Improvements to Nonemployee Share-based Payment Accounting* ("ASU 2018-07") which simplifies the accounting for share-based payments to nonemployees by aligning it with the accounting for share-based payments to employees, with certain exceptions. ASU 2018-07 is effective for fiscal years beginning after December 15, 2019. Early adoption is permitted for those entities that have adopted the new revenue guidance. The Company adopted this standard on January 1, 2020. The Company has evaluated the effect that the updated standard had on its internal processes, financial statements and related disclosures, and has determined that the adoption did not have a material impact on the Company's financial statements.

In August 2018, the FASB issued ASU No. 2018-13, *Changes to the Disclosure Requirements for Fair Value Measurement* ("ASU 2018-13"), which modifies certain disclosure requirements on fair value measurements. ASU 2018-13 is effective for interim and annual periods beginning after December 15, 2019, and early adoption is permitted. The Company adopted this standard on January 1, 2020. The Company has evaluated the effect that the updated standard had on its internal processes, financial statements and related disclosures, and has determined that the adoption did not have a material impact on the Company's historical financial statements. The Company has updated its fair value footnote (Note 3) with additional and modified disclosures as required by the standard upon adoption.

In August 2020, FASB issued ASU No. 2020-06, *Debt—Debt with Conversion and Other Options (Subtopic 470-20) and Derivatives and Hedging—Contracts in Entity's Own Equity (Subtopic 815-40): Accounting for Convertible Instruments and Contracts in an Entity's Own Equity* ("ASU 2020-06"), which, among other things, provides guidance on how to account for contracts on an entity's own equity. This ASU

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simplifies the accounting for certain financial instruments with characteristics of liabilities and equity. Specifically, the ASU eliminated the need for the Company to assess whether a contract on the entity's own equity (i) permits settlement in unregistered shares, (ii) whether counterparty rights rank higher than shareholder's rights, and (iii) whether collateral is required. In addition, the ASU requires incremental disclosure related to contracts on the entity's own equity and clarifies the treatment of certain financial instruments accounted for under this ASU on earnings per share. This ASU may be applied on a full retrospective or modified retrospective basis. The Company adopted this standard on January 1, 2021, on a modified retrospective basis. The Company has evaluated the effect that the updated standard had on its internal processes, financial statements and related disclosures, and has determined that the adoption did not have a material impact on the Company's historical financial statements. The Company has updated its fair value footnote (Note 3) with additional and modified disclosures as required by the standard upon adoption.

Recent Accounting Pronouncements—Not Yet Adopted

In February 2016, the FASB issued ASU No. 2016-02, *Leases* ("ASU 2016-02"*)*. The new standard establishes a right-of-use model and requires a lessee to recognize on the balance sheet a right-of-use asset and corresponding lease liability for all leases with terms longer than 12 months. Leases will be classified as either finance or operating, with classification affecting the pattern of expense recognition in the income statement. ASU 2016-02 is effective for the Company's annual periods beginning after December 15, 2021 and early adoption is permitted. The Company is currently evaluating the impact that the adoption of this guidance will have on its financial statements and related disclosures.

In June 2016, the FASB issued ASU No. 2016-13, *Financial Instruments–Credit Losses: Measurement of Credit Losses on Financial Instruments* ("ASU 2016-13") which amends the impairment model by requiring entities to use a forward-looking approach based on expected losses to estimate credit losses on certain types of financial instruments, including trade receivables and available-for-sale debt securities. ASU 2016-13 is effective for the Company's annual periods beginning after December 15, 2022, with early adoption permitted. The Company is currently evaluating the impact that the adoption of this guidance will have on its financial statements and related disclosures.

In November 2018, the FASB issued ASU No. 2018-18 ("ASU 2018-18"), which clarifies the interaction between ASC Topic 808, *Collaborative Arrangements*, and ASC Topic 606, *Revenue from Contracts with Customers*. This guidance, among other items, clarifies that certain transactions between collaborative participants should be accounted for as revenue under Topic 606 when the collaborative arrangement participant is a customer in the context of a unit of account. ASU 2018-18 is effective for the Company's fiscal years beginning after December 15, 2020. The Company is currently evaluating the impact of the adoption of this standard on its financial statements and related disclosures.

In December 2019, the FASB issued ASU No. 2019-12, *Simplifying the Accounting for Income Taxes* ("ASU 2019-12"), as part of its initiative to reduce complexity in accounting standards. The amendments in the ASU are effective for the Company's fiscal years beginning after December 15, 2020, including interim periods therein. Early adoption of the standard is permitted, including adoption in interim or annual periods for which financial statements have not yet been issued. The Company is currently evaluating the impact of the adoption of this standard on its financial statements and related disclosures.

3. Fair Value Measurements

The accounting guidance defines fair value, establishes a consistent framework for measuring fair value and expands disclosure for each major asset and liability category measured at fair value on either a recurring or

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nonrecurring basis. Fair value is defined as an exit price, representing the amount that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants. As such, fair value is a market-based measurement that should be determined based on assumptions that market participants would use in pricing an asset or liability. As a basis for considering such assumptions, the accounting guidance establishes a three-tier fair value hierarchy, which prioritizes the inputs used in measuring fair value as follows:

Level 1: Observable inputs such as quoted prices in active markets.

Level 2: Inputs, other than the quoted prices in active markets, that are observable either directly or indirectly.

Level 3: Unobservable inputs in which there is little or no market data, which require the reporting entity to develop its own assumptions.

When quoted market prices are available in active markets, the fair value of assets and liabilities is estimated within Level 1 of the valuation hierarchy.

If quoted prices are not available, then fair values are estimated by using pricing models, quoted prices of assets and liabilities with similar characteristics, or discounted cash flows, within Level 2 of the valuation hierarchy. In cases where Level 1 or Level 2 inputs are not available, the fair values are estimated by using inputs within Level 3 of the hierarchy. The fair value of short-term investments is based upon market prices quoted on the last day of the fiscal period or other observable market inputs. During 2019 and 2020, the Company issued a warrant in connection with its long-term debt (Note 6), which is measured at fair value at each reporting date. The value for the warrant liability balance is based on significant inputs not observable in the market, which represents a Level 3 measurement within the fair value hierarchy. Except for short-term investments, the 2021 Notes and the warrant, none of the Company’s assets or liabilities are recorded at fair value on a recurring basis.

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The following tables summarize the Company's assets and liabilities measured at fair value on a recurring basis as of December 31, 2019, 2020 and March 31, 2021 (in thousands):

	December 31, 2019			
Assets:	**Level 1**	**Level 2**	**Level 3**	**Total**
Money market funds (cash equivalents)	$ 4,682		$ —	$ 4,682
Asset backed securities	—	15,150	—	15,150
Corporate debt securities	—	25,546	—	25,546
Total assets	$ 4,682	$ 40,696	$ —	$ 45,378
Liability:				
Warrant liabilities	$ —	$ —	$ 64	$ 64
Total liabilities	$ —	$ —	$ 64	$ 64

	December 31, 2020			
Assets:	**Level 1**	**Level 2**	**Level 3**	**Total**
Money market funds (cash equivalents)	$ 5,426	$ —	$ —	$ 5,426
Asset backed securities	—	3,943	—	3,943
Corporate debt securities	—	11,288	—	11,288
Total assets	$ 5,426	$ 15,231	$ —	$ 20,657
Liability:				
Warrant liabilities	$ —	$ —	$ 451	451
Total liabilities	$ —	$ —	$ 451	$ 451

	March 31, 2021 (unaudited)			
Assets:	**Level 1**	**Level 2**	**Level 3**	**Total**
Money market funds (cash equivalents)	$37,518	$ —	$ —	$ 37,518
Asset backed securities	—	41,986	—	41,986
Corporate debt securities	—	62,609	—	62,609
Total assets	$37,518	$ 104,595	$ —	$ 142,113
Liability:				
Warrant liability	$ —	$ —	$ 2,653	2,653
Convertible promissory notes			$ 141,900	141,900
Total liabilities	$ —	$ —	$ 144,553	$ 144,553

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The following table provides reconciliation for all liabilities measured at fair value using significant unobservable inputs (Level 3) for years ended December 31, 2019, 2020 and the three months ended March 31, 2021 (in thousands):

Balance at December 31, 2018	$ —
Fair value of warrant at issuance	64
Balance at December 31, 2019	$ 64
Fair value of warrant at issuance	189
Change in fair value of warrant during 2020	198
Balance at December 31, 2020	$ 451
Change in fair value of warrant during three months of 2021 (unaudited)	2,202
Change in fair value of 2021 Notes during three months of 2021 (unaudited)	11,400
Balance at March 31, 2021 (unaudited)	$ 14,504

In connection with the second draw of the Company's debt agreement the warrant was amended to increase the number of shares by 96,867. The change in fair value of the warrant between December 31, 2019 and December 31, 2020 was $0.2 million.

Below are the assumptions used for the Black-Scholes option pricing valuation model for the fair value of the warrant liability as of December 31, 2019, 2020 and March 31, 2021:

Assumption	December 31, 2019	December 31, 2020	March 31, 2021 (unaudited)
Fair value	$ 2.32	$ 4.59	$ 20.53
Expected volatility	60.00%	60.00%	82.50%
Expected term (years)	9.99	8.99	8.42
Expected dividend yield	0.00%	0.00%	0.00%
Risk-free interest rate	1.91%	0.93%	1.73%

The fair value on the date of measurement of the Series B convertible preferred stock, the underlying instrument, was estimated by management with the assistance of a third-party valuation specialist. The expected volatility is based on historical volatilities from guideline companies, since there is no active market for the Company's common stock. The Company based the expected term assumption on the actual remaining contractual term of the warrant as of the date of measurement. The Company has not paid, and does not expect to pay, any cash dividends in the foreseeable future. The risk-free interest rate used is the rate for a U.S. Treasury zero coupon issue with a term consistent with the remaining contractual term of the warrant on the date of measurement.

In February 2021, the Company sold and issued approximately $130.5 million aggregate principal amount of the convertible promissory notes in a private placement transaction. The 2021 Notes accrue 6% interest per annum and will automatically convert into shares of the Company's common stock in connection with the completion of this offering at a conversion price equal to the lower of (i) 80% of the initial public offering price per share and (ii) the price per share obtained by dividing $1.5 billion by the fully-diluted capitalization of our Company prior to the completion of this offering.

The Company elected to account for the 2021 Notes at fair value, as of the issuance date. Management believes that the fair value option better reflects the underlying economics of the 2021 Notes, which contain

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multiple embedded derivatives. Under the fair value election, changes in fair value are reported as "Change in fair value of convertible promissory notes" in the statements of operations in each reporting period subsequent to the issuance. The Company measured the fair value of the 2021 Note using the probability weighted "as converted" plus black scholes model based on the inputs such as probability of IPO scenario vs. Non-IPO scenario, fair value of common stock price, discount yield, risk free rate, equity volatility, years expected term, number of converted shares and price negotiation adjustment for the calibration.

There are significant judgments, assumptions and estimates inherent in the determination of the fair value of each of the instruments described above. These include determination of a valuation method and selection of the possible outcomes available to the Company, including the determination of timing and expected future investment returns for such scenarios. The Company considered the equity value of an initial public offering using market transactions and have determined the expected value of a stay private scenario using the income approach, which is based on assumptions regarding the Company's future operating performance. The related judgments, assumptions and estimates are highly interrelated and changes in any one assumption could necessitate changes in another. In particular, any changes in the probability of a particular outcome would require a related change to the probability of another outcome. In addition, the fair value of the 2021 Notes is derived using assumptions that are consistent with the assumptions used to value the Company's common stock and the Warrant. In the future, depending on the valuation approaches used and the expected timing and weighting of each, the inputs described above, or other inputs, may have a greater or lesser impact on the Company's estimates of fair value.

4. Property and Equipment, Net

Property and equipment, net, consisted of the following (in thousands):

	Useful Life	December 31, 2019	December 31, 2020	March 31, 2021 (unaudited)
Equipment	5 years	$1,731	$ 2,642	$ 2,948
Computers and software	3 years	398	851	1,138
Furniture and fixtures	5 years	57	80	80
Leasehold improvements	4 years of less	28	35	35
		2,214	3,608	4,201
Less: Accumulated depreciation		(601)	(1,240)	(1,451)
Total property and equipment, net		$1,613	$ 2,368	$ 2,750

5. Accrued Expenses

	December 31, 2019	December 31, 2020	March 31, 2021 (unaudited)
Accrued compensation	$ 51	$1,234	$ 554
Accrued professional fees	195	74	433
Accrued research and development costs	34	44	127
Accrued offering costs	-	-	804
Accrued other liabilities	180	240	259
Total accrued expenses	$ 460	$1,592	$ 2,177

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6. Long-Term Debt

In November 2019, the Company entered into a loan and security agreement (the "Loan Agreement") with Silicon Valley Bank ("SVB") pursuant to which SVB agreed to lend to the Company up to $15.0 million in a series of term loans (the "Loan"). Contemporaneously, the Company borrowed $2.5 million in the first of three draw-downs available through September 30, 2021. The additional draws are at the discretion of the Company, but the Company is subject to penalties and fees if not fully drawn down. Simultaneously with the first draw-down, SVB entered into a warrant agreement with the Company to purchase 32,289 shares of Series B convertible preferred stock of the Company at an exercise price of $2.3228 per share (as amended, the "SVB warrant"). The SVB warrant will be adjusted to increase the number of shares of the Company's Series B convertible preferred stock underlying the SVB warrant if the Company elects to draw down additional funds under the Loan (Note 10).

In March 2020, the Company borrowed an additional $7.5 million as a second draw down related to the Loan and the SVB warrant was amended to increase the number of shares of Series B convertible preferred stock of the Company by 96,867. As of December 31, 2020, the SVB warrant remain outstanding and is included within other current liabilities on the balance sheets.

The outstanding balance of the Loan is due on the scheduled maturity date of September 1, 2023 (the "Maturity Date"). Payment on the Loan will be interest only through September 30, 2021, followed by 24 equal monthly payments of principal plus accrued interest commencing on October 1, 2021. The per annum interest rate for any outstanding Loan balance is the greater of (i) 0.65% above the Prime Rate or (ii) 5.90%. The interest rate as of December 31, 2019, 2020 and March 31, 2021 was 5.90%. In addition, a final payment ("Final Payment") equal to the original principal amount of each advance multiplied by 5.50% will be due on the Maturity Date.

The Company may prepay the borrowed amounts, provided that the Company will be obligated to pay a prepayment fee equal to (i) 3% of the outstanding principal balance of all draw-downs if the draw-downs are repaid prior to the first anniversary of the draw-down date, (ii) 2% of the outstanding principal balance of all draw-downs if the draw-downs are repaid on or after the first anniversary of the draw-down date but prior to the second anniversary of the draw-down date, and (iii) 1% of the outstanding principal balance of all draw-downs if the draw-downs are repaid on or after the second anniversary of the draw-down date but before the Maturity Date. Further, the Company is subject to a 1% unused line fee payable to SVB related to the undrawn portion of the borrowing capacity on September 30, 2021 or, if applicable, upon prepayment.

As of December 31, 2019, 2020 and March 31, 2021, total debt issuance costs related to the Loan were $0.1 million $0.8 million and $0.5 million, respectively, if applicable the fair value of the warrant at issuance date is included within this balance (Note 10). The debt issuance costs and Final Payment are amortized to interest expense over the term of the loan using the effective interest method.

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The long-term debt and unamortized discount balances as of December 31, 2019 and 2020 and March 31, 2021, are shown below (in thousands):

	December 31, 2019	December 31, 2020	March 31, 2021 (unaudited)
Total long-term debt	$ 2,500	$ 10,000	$ 10,000
Less unamortized discount	(100)	(605)	(527)
Total long-term debt, net	2,400	9,395	9,473
Less current portion of long-term debt, net of issuance costs	—	(926)	(2,183)
Long-term debt, net of current portion	$ 2,400	$ 8,469	$ 7,290

The Company is subject to customary affirmative and restrictive covenants under the SVB Loan agreement. The Company's obligations under the SVB Loan agreement are secured by a first priority security interest in substantially all of the Company's current and future assets, other than intellectual property. The Company has agreed not to encumber its intellectual property assets, except as permitted by the SVB Loan agreement.

The Loan Agreement also contains customary indemnification obligations and customary events of default, including, among other things, the failure to fulfill certain obligations under the Loan Agreement and the occurrence of a material adverse change in the business, operations, or condition (financial or otherwise), a material impairment of the prospect of repayment of any portion of the Loan, or a material impairment in the perfection or priority of SVB's lien in the collateral or in the value of such collateral. In the event of default by the Company under the Loan Agreement, SVB would be entitled to exercise their remedies thereunder, including the right to accelerate the debt, upon which the Company may be required to repay all amounts then outstanding under the Loan Agreement. As of December 31, 2019, 2020 and March 31, 2021, the Company was in compliance with all covenants under the Loan Agreement and there had been no material adverse change in its business.

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Future minimum payments under the outstanding draw-down of $10.0 million on the Loan consist of the following (in thousands):

Years Ended December 31:	
2021	$ 1,842
2022	5,386
2023	4,393
Total future minimum payments	11,621
Less: Interest payments	(1,621)
Principal amount of long-term debt	10,000
Current portion of long-term debt	(1,250)
Long-term debt, net	$ 8,750

Three Months Ended March 31: (unaudited)	
2021 (nine months remaining)	$ 1,695
2022	5,386
2023	4,393
Total future minimum payments	11,474
Less: Interest payments	(1,474)
Principal amount of long-term debt	10,000
Current portion of long-term debt	(2,500)
Long-term debt, net	$ 7,500

In February 2021, the Company issued the 2021 Notes to various investors, in the aggregate principal amount of $130.50 million. The 2021 Notes bear interest at 6% per annum and have a maturity date in February 2023, or earlier upon certain events of default. The Company cannot prepay the 2021 Notes, without the consent of the holders of a majority in interest of the outstanding Notes (the “Majority Noteholders”). The 2021 Notes shall automatically convert, upon the first of the following transactions to occur, into: (i) shares of the Company’s common stock upon a qualified initial public offering (“IPO”) or a qualified transaction with a Special Purpose Acquisition Company (“SPAC”); or (ii) shares of the Company’s convertible preferred stock in the event of a qualified equity financing in which the Company issues shares of convertible preferred stock. The 2021 Notes are also convertible into shares of the Company’s convertible preferred stock issued in a non-qualifying financing transaction upon the election of the Majority Noteholders. In each case, the 2021 Notes are convertible at a conversion price equal to the lessor of (i) a per share price equal to 80% of the per share price paid by the new investors in such financing, IPO or SPAC transaction or (ii) a per share price equal to the price per share obtained by dividing $1.5 billion by the fully-diluted capitalization of our Company (the Valuation Cap). In the event of a change of control, each Note holder can elect to either receive an amount equal to two times the outstanding principal and interest on such holder’s Note or convert the Note into shares of the Company’s common stock at the Valuation Cap.

Due to certain embedded features within the 2021 Notes, the Company elected to account for these notes and all their embedded features under the fair value option. For the three months ended March 31, 2021, the Company recognized $11.4 million of change in fair value of convertible promissory notes in the statements of

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operations and comprehensive loss related to increases in the fair value of the 2021 Notes. As of March 31, 2021, the fair value on the 2021 Notes was $141.9 million.

7. Commitments and Contingencies

Columbia License Agreement and Sponsored Research Agreement

In 2016, the Company entered into a technology license agreement (the "License Agreement") with The Trustees of Columbia University (the "University"). Under the License Agreement, the Company acquired the exclusive right to use certain patents. The License Agreement provides for the potential payment to the University of development milestones and royalties on net sales of products covered by the licensed patents. The license fee was immaterial for all periods presented.

In addition to the License Agreement, the Company entered into a sponsored research agreement (the "Research Agreement") to fund a research program with the University. The program ended in 2019. The Company recorded $0.1 million of expense in connection with the Research Agreement for the year ended December 2019.

Operating Lease

In November 2017, the Company entered into a non-cancelable operating lease that expires upon commencement of the new HQ lease, as defined below (estimated second quarter of 2022). The lease includes certain rent escalations and additional charges for common area maintenance and other costs. The Company gained access to the leased space and began recognizing rent expense under this lease in February 2018.

In December 2019, the Company entered into a 5-year lease agreement for an additional office space in La Jolla, California. The lease includes certain rent escalations and additional charges for common area maintenance and other costs. The Company gained access to the leased space and began recognizing rent expense under this lease in January 2020. The sublease expires upon commencement of new HQ lease (estimated second quarter of 2022).

In June 2020, the Company entered into a sublease agreement for an additional office space in La Jolla, California. The sublease includes certain rent escalations and additional charges for common area maintenance and other costs. The Company gained access to the leased space and began recognizing rent expense under this sublease in July 2020. The sublease expires upon commencement of new HQ lease (estimated April 2022).

In June 2020, the Company entered into a 10-year lease agreement with ARE-SD Region No. 27, LLC ("landlord") for new office and laboratory space containing approximately 76,778 rentable square feet located in La Jolla, California ("premises", "new HQ lease"), with a target commencement date in April 2022. If landlord does not deliver the premises within 120 days of the target commencement date for any reason other than Force Majeure delays or delays by the Company, the Company may terminate by the Company and neither landlord nor the Company will have any further rights, duties, or obligations under the new HQ lease. Landlord shall make available to the Company for use within 12-months after the commencement date a Tenant Improvement Allowance ("TI Allowance"), which the Company will repay to the landlord as additional rent over the base term and shall accrue interest at a rate of 8% per annum. Upon commencement, the contractual base rent will be charged, subject to partial rent abatement, annual base rent adjustments, the Company's share of operating expenses, and additional rent for the TI Allowance actually disbursed by the landlord.

The Company recorded rent expense of $0.4 million, $1.0 million and $0.3 million for the years ended December 31, 2019, 2020 and the three months ended March 31, 2021, respectively.

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Future minimum payments under the Company's non-cancelable operating leases are as follows (in thousands):

Years Ended December 31:	
2021	1,610
2022	3,948
2023	4,994
2024	5,144
2025 and thereafter	40,999
Total	$56,695

As of March 31, 2021: (unaudited)	
2021 (nine months remaining)	1,215
2022	3,948
2023	4,994
2024	5,144
2025 and thereafter	40,999
Total	$56,300

8. Convertible Preferred Stock

Series Seed Convertible Preferred Stock

In 2016, the Company completed its Series Seed convertible preferred stock financing, providing it with $4.5 million in aggregate gross proceeds, net of $0.0 million of issuance costs, from the issuance of 6,520,790 shares of its Series Seed convertible preferred stock at $0.6901 per share.

Series A Convertible Preferred Stock

In 2017, the Company completed its Series A convertible preferred stock financing, providing the Company with $20.0 million in aggregate gross proceeds, net of $0.1 million of issuance costs, from the issuance of 12,932,429 shares of its Series A convertible preferred stock at $1.5465 per share.

Series B Convertible Preferred Stock

In 2019, the Company completed two closings of its Series B convertible preferred stock financing, providing the Company with $45.0 million in aggregate gross proceeds, net of $0.2 million of issuance costs, from the issuance of 19,373,169 shares of its Series B convertible preferred stock at $2.3228 per share. In 2020, the Company paid an additional $0.03 million of issuance costs related to this financing.

Dividends

The holders of the Series Seed, Series A and Series B convertible preferred stock are entitled to receive non-cumulative dividends at a rate of $0.055208, $0.12372 and $0.18582 per share per annum, respectively. Convertible preferred stock dividends are payable when and if declared by the Company's Board of Directors. As of December 31, 2020 and March 31, 2021, the Company's Board of Directors had not declared any dividends on the convertible preferred stock outstanding.

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(Information as of March 31, 2021 and thereafter and for the three months ended March 31, 2020 and 2021 is unaudited; all tabular amounts presented in thousands, except share, per share and number of years)

Liquidation

The holders of the Series Seed, Series A and Series B convertible preferred stock are entitled to receive liquidation preferences at the rate of $0.6901, $1.5465 and $2.3228 per share, respectively. Liquidation payments to the holders of Series Seed, Series A and Series B convertible preferred stock shall be distributed with equal priority and pro rata among holders in proportion to the respective aggregate liquidation preference of each holder, and collectively prior to any distribution to the holders of common stock.

Conversion

Each share of Series Seed, Series A and Series B convertible preferred stock is convertible at any time at the option of the holder into a number of shares of common stock determined by dividing the original issue price for such series by the applicable conversion price for such series, which conversion price is subject to adjustment under certain conditions. The conversion prices for each series of convertible preferred stock shall be adjusted in the event that the Company issues additional convertible preferred stock at a price (or prices) less than the original issue price related to each series (down round protection). All outstanding shares of convertible preferred stock will be automatically converted upon the earlier of (i) the closing of firm commitment underwritten public offering pursuant to a registration statement on Form S-1 under the Securities Act of 1933, as amended, with an offering price per share of at least $6.968 (as adjusted for any stock dividends, combinations, splits, recapitalizations and the like with respect to such shares after the filing date) and $60.0 million aggregate proceeds, or (ii) the affirmative election of the holders of at least (A) a majority of the outstanding shares of convertible preferred stock voting together as a single class on an as-converted basis and (B) a majority of the outstanding shares of Series B convertible preferred stock. Upon such conversion, any declared and unpaid dividends shall be paid in accordance with the agreement.

Voting Rights

The holders of the Series Seed, Series A and Series B convertible preferred stock are entitled to vote together with the holders of common stock on all matters submitted to stockholders for a vote. Each holder of convertible preferred stock is entitled to the number of votes equal to the number of shares of common stock into which such shares of convertible preferred stock could be converted at the record date for determination of the stockholders entitled to vote.

9. Common Stock

The Company is authorized to issue up to 60,272,685 shares of its common stock, each having a par value of $0.0001 per share. In 2016, the Company issued 9,260,000 shares of its common stock as restricted stock awards with a weighted-average grant date fair value of $0.0001 to various employees, advisors and directors of the Company, which are subject to a repurchase right in favor of the Company that lapses over a period of six months to four years. Upon the termination of service of a restricted stockholder, the Company has the option to repurchase any shares for which its repurchase right has not lapsed. As of December 31, 2019 and 2020, 8,610,000 and 9,260,000, respectively, the Company’s repurchase rights had lapsed with respect to those restricted stock awards and none were repurchased. At December 31, 2019 and 2020, 650,000 and 0 of the shares subject to repurchase, respectively, remained unvested. The liability related to shares subject to the Company’s repurchase rights as of December 31, 2019 was immaterial.

NOTES TO THE FINANCIAL STATEMENTS
(Information as of March 31, 2021 and thereafter and for the three months ended March 31, 2020 and 2021 is unaudited; all tabular amounts presented in thousands, except share, per share and number of years)

Common stock reserved for future issuance consisted of the following at December 31, 2020:

Conversion of preferred stock	38,826,388
Warrant for purchase of preferred stock	129,156
Stock options issued and outstanding	7,274,953
Authorized for future option grants	3,213,259
Total	49,443,756

Common stock reserved for future issuance consisted of the following at March 31, 2021:

Conversion of preferred stock	38,826,388
Warrant for purchase of preferred stock	129,156
Stock options issued and outstanding	4,475,799
Authorized for future option grants	934,124
Total	44,365,467

10. Series B Convertible Preferred Stock Warrant

In connection with the first draw-down under the Loan Agreement (Note 6) in November 2019, the Company issued the SVB warrant. The warrant is exercisable for ten years at any time starting on November 19, 2019. In March 2020, the SVB warrant was amended to increase the number of shares of Series B convertible preferred stock of the Company by 96,867 in connection with the second draw-down under the Loan Agreement. The SVB warrant has a ten-year term from the original agreement date of November 23, 2020.

The Company accounts for the SVB warrant in accordance with the provisions of ASC 480, *Distinguishing Liabilities from Equity*, which requires the SVB warrant for the purchase of shares in contingently redeemable instruments be accounted for as liabilities. The Company adjusts the carrying value of such warrant liability to its estimated fair value at the end of each reporting period, with increases or decreases in fair value recorded as other income or expense in the statements of operations. The SVB warrant is valued using the Black-Scholes option pricing model. The Company recorded warrant liability of $0.1 million, $0.5 million and $2.7 million at December 31, 2019, 2020 and March 31, 2021, respectively.

11. Stock Incentive Plan

In September 2016, the Company adopted its 2016 Stock Plan (the “Plan”). The Plan provides for the grant of incentive stock options and non-statutory stock options to employees, directors or consultants of the Company. Options granted under the Plan generally vest over a period of four years, as determined by the Company’s Board of Directors, and the maximum term of stock options granted under the Plan is 10 years. Recipients of stock options are eligible to purchase shares of the Company’s common stock at an exercise price equal to no less than the estimated fair market value of such stock on the grant date. As of December 31, 2020 and March 31, 2021, the Company had 11,528,297 shares authorized for issuance under the Plan and 3,213,259 and 934,124 shares remained available for grant, respectively.

NOTES TO THE FINANCIAL STATEMENTS
(Information as of March 31, 2021 and thereafter and for the three months ended March 31, 2020 and 2021 is unaudited; all tabular amounts presented in thousands, except share, per share and number of years)

The following table summarizes stock option activity under the Plan since March 31, 2021:

	Number of Options	Weighted-average exercise price (per share)	Weighted-average remaining contract term (in years)	Intrinsic value (in thousands)
Outstanding at December 31, 2019	6,338,939	$ 0.54	9.61	$ 559
Exercisable at December 31, 2019	6,338,939	$ 0.54	9.61	$ 559
Granted	1,451,500	$ 0.65		
Exercised	(116,068)	$ 0.41		
Canceled / Forfeited	(399,418)	$ 0.39		
Outstanding at December 31, 2020	7,274,953	$ 0.57	8.81	$ 32,129
Exercisable at December 31, 2020	7,274,953	$ 0.57	8.81	$ 32,129
Granted (unaudited)	2,321,700	$ 5.39		
Exercised (unaudited)	(5,096,415)	$ 0.59		
Canceled / Forfeited (unaudited)	(24,439)	$ 0.63		
Outstanding at March 31, 2021 (unaudited)	4,475,799	$ 3.05	8.99	$ 71,512
Exercisable at March 31, 2021 (unaudited)	4,475,799	$ 3.05	8.99	$ 71,512

The weighted-average estimated fair value per share of employee stock options granted during the years ended December 31, 2019, 2020 and three months ended March 31, 2021 was $0.47, $0.65 and $5.35 for employees, respectively, and $0.54, $0.69 and $8.95 for nonemployees, respectively.

The intrinsic value of options exercised during the years ended December 31, 2019, 2020 and three months ended March 31, 2021 was $0.3 million, $0.5 million and $67.6 million, respectively.

The total fair value of options vested during the years ended December 31, 2019, 2020 and three months ended March 31, 2021 was $0.1 million, $1.1 million and $8.7 million, respectively.

The Plan allows for the early exercise of awards to employees and nonemployees subject to the right of repurchase by the Company at the lower of the original exercise price or fair market value for unvested awards. At December 31, 2019, 2020 and March 31, 2021, the Company has a liability for the cash received from the early exercise of stock options in the amount of $0.1, $0.0 and $2.0 million, respectively. The Company reduces the liability as the underlying shares vest in accordance with the vesting terms of the individual award.

As of December 31, 2019, 2020 and March 31, 2021, there were 286,131, 137,788 and 3,169,464, respectively, of employee early exercised stock options that remain subject to the Company’s repurchase right and there were 0, 4,167 and 33,532 non-employee early exercised stock options, respectively, that remain subject to the Company’s repurchase right. The weighted-average exercise price during the year ended December 31, 2020 was $0.42 and $0.24 and during the three months ended at March 31, 2021 was $0.60 and $0.22 for employees and nonemployees, respectively.

NOTES TO THE FINANCIAL STATEMENTS
(Information as of March 31, 2021 and thereafter and for the three months ended March 31, 2020 and 2021 is unaudited; all tabular amounts presented in thousands, except share, per share and number of years)

The classification of equity-based compensation expense is summarized as follows (in thousands):

	December 31,		March 31,
	2019	2020	2021 (unaudited)
Research and development	$ 75	$ 832	$ 225
General and administrative	95	228	871
Total equity-based compensation expense	$170	$1,060	$ 1,096

As of December 31, 2020 and March 31, 2021, total unrecognized stock-based compensation costs related to options subject to the Company's repurchase right was $2.9 and $28.1 million and is expected to be recognized over the weighted average period of approximately 1.46 and 1.76 years on a straight-line basis, respectively.

The following table shows the weighted-average assumptions used to compute the fair value of the awards granted to employees and nonemployees, using the Black-Scholes option pricing model as of December 31, 2019, 2020 and March 31, 2021:

Assumption	December 31,		March 31,
	2019	2020	2021 (unaudited)
Expected volatility	60.00%	60.00%	82.50%
Expected term (years)	5.3 - 6.1	5.3 - 6.2	6.0 - 6.1
Expected dividend yield	0.00%	0.00%	0.00%
Risk-free interest rate	1.75%	0.63%	0.87%
Forfeiture rate	1.00%	1.00%	0.00%

The risk-free interest rate assumption was based on the United States Treasury's rates for U.S. Treasury zero-coupon bonds with maturities similar to those of the expected term of the award being valued. The assumed dividend yield was based on the Company's expectation of not paying dividends in the foreseeable future. For awards granted to nonemployees, the full remaining contractual term is used. The estimated volatility reflects an average volatility of comparable companies whose share prices are publicly available adjusted to align with the stage of development of the Company.

12. Income Taxes

Due to its net losses for the years ended December 31, 2019 and December 31, 2020, and since it has a full valuation allowance against deferred tax assets, the Company did not record any provision or benefit for income taxes. There were no components of current or deferred federal, state or foreign tax provisions for the year ended December 31, 2019 or 2020.

NOTES TO THE FINANCIAL STATEMENTS
(Information as of March 31, 2021 and thereafter and for the three months ended March 31, 2020 and 2021 is unaudited; all tabular amounts presented in thousands, except share, per share and number of years)

A reconciliation of the total income tax provision tax rate to the statutory federal income tax rate of 21% for the year ended December 31, 2020 is as follows:

	December 31,	
	2019	2020
Income taxes at statutory rates	21.00%	21.00%
State income tax, net of federal benefit	6.54%	6.23%
Permanent items	-0.10%	-1.45%
Research credit	5.92%	5.67%
Change in valuation allowance	-33.36%	-31.47%
Other	0.00%	0.02%
	0.00%	0.00%

Significant components of the Company's deferred tax assets and deferred tax liabilities are as follows (in thousands):

	December 31,	
	2019	2020
Deferred tax assets:		
Net operating loss carryforward	$ 6,552	$ 13,556
Credits	1,368	2,945
Other	306	563
Total deferred tax assets	8,226	17,064
Valuation allowance	(8,147)	(16,941)
Net deferred tax assets	80	123
Deferred tax liabilities		
Fixed assets	(80)	(123)
Total deferred tax liabilities	(80)	(123)
Total net deferred taxes	$ —	$ —

At December 31, 2020, the Company had federal and California tax loss carryforwards of approximately $48.7 million and $47.1 million, respectively. The federal net operating loss generated prior to 2018 and state net operating loss carryforwards begin to expire in 2036, if unused. The federal net operating loss carryover includes $45.0 million of net operating losses generated in 2018, 2019 and 2020 which will carryover indefinitely.

At December 31, 2020, the Company had federal and state tax credit carry forwards of approximately $1.6 million and $2.2 million, respectively. The Company has not performed a formal research and development credit study with respect to these credits. The federal credits will begin to expire in 2037, if unused, and the state credits carry forward indefinitely.

Due to the Company's history of losses and uncertainty regarding future earnings, a valuation allowance has been recorded against the Company's deferred tax assets, as it is more likely than not that such assets will not be realized. The net change in the total valuation allowance for the year ended December 31, 2020 was $8.8 million.

NOTES TO THE FINANCIAL STATEMENTS
(Information as of March 31, 2021 and thereafter and for the three months ended March 31, 2020 and 2021 is unaudited; all tabular amounts presented in thousands, except share, per share and number of years)

Pursuant to Internal Revenue Code of 1986, as amended ("IRC"), specifically IRC §382 and IRC §383, the Company's ability to use net operating loss and research and development tax credit carryforwards ("tax attribute carryforwards") to offset future taxable income is limited if the Company experiences a cumulative change in ownership of more than 50% within a three-year testing period. The Company has not completed an ownership change analysis pursuant to IRC Section 382. If ownership changes within the meaning of IRC Section 382 are identified as having occurred, the amount of remaining tax attribute carryforwards available to offset future taxable income and income tax expense in future years may be significantly restricted or eliminated. Any limitation may result in the expiration of a portion of the net operating loss or research credit carryforwards before utilization.

The Company recognizes a tax benefit from an uncertain tax position when it is more likely than not that the position will be sustained upon examination, including resolutions of any related appeals or litigation processes, based on the technical merits. Income tax positions must meet a more likely than not recognition threshold to be recognized. The Company's practice is to recognize interest and/or penalties related to income tax matters in income tax expense. The Company had no accrual for interest and penalties on the Company's balance sheets and has not recognized interest and/or penalties in the statements of operations and comprehensive loss for the years ended December 31, 2019 and 2020.

The following table summarizes the changes to the Company's unrecognized tax benefits for the periods presented (in thousands):

	December 31,	
	2019	2020
Balance at beginning of year	$137	$274
Increases related to current year tax positions	137	219
Balance at end of year	$274	$493

The Company is subject to taxation in the United States and California. The U.S. federal and California returns are open to examination for all years since inception. The Company has not been, nor is it currently, under examination by any federal or state tax authority.

13. Related Party Transactions

In February 2021, the Company sold and issued Convertible promissory notes to certain related parties (prior investors, some affiliated with members of the Company's board of directors), for an aggregate principal amount of $48.5 million (see Note 6 for long-term debt disclosure).

14. Subsequent Events

The Company has evaluated all events or transactions that occurred after the December 31, 2020 balance sheet date through March 19, 2021, the date when the financial statements were available to determine if they must be reported.

15. Subsequent Events (unaudited)

The Company has evaluated all events or transactions that occurred after the March 31, 2021 balance sheet date for recognition purposes through April 26, 2021, the date when the unaudited financial statements were available. The Company has evaluated all events or transactions that occurred after the March 31, 2021 balance sheet date for disclosure purposes through May 7, 2021 to determine if they must be disclosed.

NOTES TO THE FINANCIAL STATEMENTS
(Information as of March 31, 2021 and thereafter and for the three months ended March 31, 2020 and 2021 is unaudited; all tabular amounts presented in thousands, except share, per share and number of years)

In April 2021, the Company entered into a 62-month lease agreement for an additional office space in San Diego, California. The lease includes certain rent escalations and additional charges for common area maintenance and other costs. The Company will gain access to the leased space in June 2021 and will begin recognizing rent expense under this lease at that time.

Shares

Common Stock

Prospectus

J.P. Morgan	**Goldman Sachs & Co. LLC**	**BofA Securities**	**Cowen**	**UBS Investment Bank**

, 2021

PART II

INFORMATION NOT REQUIRED IN PROSPECTUS

Item 13. Other Expenses of Issuance and Distribution

The following table presents the costs and expenses, other than underwriting discounts and commissions, payable in connection with this offering. All amounts are estimates except the SEC registration fee, the Financial Industry Regulatory Authority, Inc., or FINRA, filing fee and the Nasdaq Global Market (Nasdaq) listing fee. Except as otherwise noted, all the expenses below will be paid by us.

	Amount Paid or to Be Paid
SEC registration fee	$ *
FINRA filing fee	*
Nasdaq listing fee	*
Printing and engraving expenses	*
Legal fees and expenses	*
Accounting fees and expenses	*
Transfer agent and registrar fees	*
Miscellaneous fees and expenses	*
Total	$ *

* To be completed by amendment.

Item14. Indemnification of Directors and Officers

Section 145 of the Delaware General Corporation Law authorizes a court to award, or a corporation's board of directors to grant, indemnity to directors and officers under certain circumstances and subject to certain limitations. The terms of Section 145 of the Delaware General Corporation Law are sufficiently broad to permit indemnification under certain circumstances for liabilities, including reimbursement of expenses incurred, arising under the Securities Act of 1933, as amended (the Securities Act).

As permitted by the Delaware General Corporation Law, our amended and restated certificate of incorporation and amended and restated bylaws contain provisions relating to the limitation of liability and indemnification of directors and officers. The amended and restated certificate of incorporation provides that our directors will not be personally liable to us or our stockholders for monetary damages for any breach of fiduciary duty as a director, except for liability:

- for any breach of the director's duty of loyalty to us or our stockholders;
- for acts or omissions not in good faith or that involve intentional misconduct or a knowing violation of law;
- in respect of unlawful payments of dividends or unlawful stock repurchases or redemptions as provided in Section 174 of the Delaware General Corporation Law; or
- for any transaction from which the director derives any improper personal benefit.

Our amended and restated certificate of incorporation also provides that if Delaware law is amended after the approval by our stockholders of the certificate of incorporation to authorize corporate action further eliminating or limiting the personal liability of directors, then the liability of our directors will be eliminated or limited to the fullest extent permitted by Delaware law.

Our amended and restated bylaws provide that we will indemnify our directors and officers to the fullest extent permitted by Delaware law, as it now exists or may in the future be amended, against all expenses and

liabilities reasonably incurred in connection with their service for or on our behalf. Our amended and restated bylaws provide that we shall advance the expenses incurred by a director or officer in advance of the final disposition of an action or proceeding, and permit us to secure insurance on behalf of any director, officer, employee, or other enterprise agent for any liability arising out of his or her action in that capacity, whether or not Delaware law would otherwise permit indemnification.

We intend to enter into indemnification agreements with each of our directors and executive officers and certain other key employees, a form of which is attached as Exhibit 10.1. The form of agreement provides that we will indemnify each of our directors, executive officers and such other key employees against any and all expenses incurred by that director, executive officer, or other key employee because of his or her status as one of our directors, executive officers, or other key employees, to the fullest extent permitted by Delaware law, our restated certificate of incorporation and our amended and restated bylaws. In addition, the form agreement provides that, to the fullest extent permitted by Delaware law, we will advance all expenses incurred by our directors, executive officers and other key employees in connection with a legal proceeding.

Reference is made to the underwriting agreement contained in Exhibit 1.1 to this registration statement, indemnifying our directors and officers against limited liabilities. In addition, Section 2.8 of our amended and restated investors' rights agreement (the IRA) contained in Exhibit 4.2 to this registration statement provides for indemnification of certain of our stockholders against liabilities described in our IRA.

We currently carry and intend to continue to carry liability insurance for our directors and officers.

Item15. Recent Sales of Unregistered Securities

The following list sets forth information regarding all unregistered securities sold by us since January 1, 2018. No underwriters were involved in the sales and the certificates representing the securities sold and issued contain legends restricting transfer of the securities without registration under the Securities Act or an applicable exemption from registration.

(a) From January 2018 through February 2021, we granted to our directors, officers, employees, consultants and other service providers stock options to purchase an aggregate of 9,821,471 shares of common stock upon the exercise of options under our 2016 Plan at exercise prices per share ranging from $0.2108 to $8.95, for an aggregate exercise price of approximately $16.9 million.

(b) From January 2018 through April 2021, we issued 5,461,757 shares of common stock upon the exercise of options under our 2016 Plan at exercise prices per share ranging from $0.2108 to $8.95, for an aggregate exercise price of approximately $3.2 million.

(c) In June and August of 2019, we issued and sold an aggregate of 19,373,169 shares of our Series B convertible preferred stock at a cash purchase price of $2.3228 per share for an aggregate purchase price of approximately $45.0 million.

(d) In February 2021, we sold and issued approximately $130.5 million aggregate principal amount of convertible promissory notes (the 2021 Notes). The 2021 Notes accrue 6% interest per annum and will automatically convert into shares of our common stock in connection with the closing of this offering.

(e) In November 2019, we sold and issued a warrant to purchase 32,289 shares of Series B convertible preferred stock with an exercise price of $2.3228 per share. In May 2020, in connection with the second draw of the Company's debt agreement, which occurred in March 2020, the warrant was amended to increase the number of shares available to purchase up to an aggregate of 129,156 shares of Series B convertible preferred stock with an exercise price of $2.3228 per share.

The offers, sales and issuances of the securities described in Items (a) and (b) above were exempt from registration under the Securities Act under either (1) Rule 701 in that the transactions were under compensatory

benefit plans and contracts relating to compensation as provided under Rule 701 or (2) Section 4(a)(2) of the Securities Act or Regulation D promulgated thereunder as transactions by an issuer not involving any public offering. The recipients of such securities were the registrant's directors, officers, employees, consultants or other service providers and received the securities under our 2016 Stock Plan. The recipients of securities in each of these transactions represented their intention to acquire the securities for investment only and not with view to or for sale in connection with any distribution thereof and appropriate legends were affixed to the securities issued in these transactions.

The offers, sales and issuances of the securities described in Items (c), (d) and (e) above were exempt from registration under the Securities Act under Section 4(a)(2) of the Securities Act or Regulation D promulgated thereunder as transactions by an issuer not involving a public offering. The recipients of securities in each of these transactions acquired the securities for investment only and not with a view to or for sale in connection with any distribution thereof and appropriate legends were affixed to the securities issued in these transactions. Each of the recipients of securities in these transactions was an accredited person and had adequate access, through employment, business or other relationships, to information about the registrant.

Item 16. Exhibits and Financial Statement Schedules

(a) Exhibits. The following exhibits are included herein or incorporated herein by reference:

Exhibit Number	Description
1.1*	Form of Underwriting Agreement.
3.1	Amended and Restated Certificate of Incorporation of Registrant, as currently in effect.
3.2*	Form of Amended and Restated Certificate of Incorporation of Registrant, to be effective upon completion of this offering.
3.3	Bylaws of Registrant, as currently in effect.
3.4*	Form of Amended and Restated Bylaws of Registrant, to be effective upon completion of this offering.
4.1*	Form of Registrant's common stock certificate.
4.2	Amended and Restated Investors' Rights Agreement, dated June 27, 2019, as amended, by and among the Registrant and the other parties thereto.
4.3	Series B Preferred Stock Warrant, as amended.
5.1*	Opinion of Gunderson Dettmer Stough Villeneuve Franklin & Hachigian, LLP.
10.1*	Form of Indemnification Agreement between the Registrant and each of its directors and executive officers.
10.2	2016 Plan, as amended, and forms of agreements thereunder.
10.3*	2021 Equity Incentive Plan and form of agreements thereunder.
10.4*	2021 Employee Stock Purchase Plan.
10.5	Lease Agreement, dated November 1, 2017, by and between ARE-10933 North Torrey Pines, LLC and the Registrant.
10.6	Lease Agreement, dated June 26, 2020, by and between ARE-SD Region No. 27, LLC and the Registrant.
10.7	Sublease, dated June 15, 2020, by and between the Registrant and Gossamer Bio, Inc.
10.8	Amended and Restated Offer Letter, dated January 7, 2020, by and between the Registrant and Andrew Spaventa.
10.9	Amended and Restated Offer Letter, dated January 11, 2020, by and between the Registrant and Eli Glezer.
10.10	Offer Letter, dated September 25, 2019, by and between the Registrant and Dalen Meeter.
10.11	Loan Agreement, dated November 19, 2019, by and between the Registrant and Silicon Valley Bank.
10.12†	Exclusive License Agreement, date August 12, 2016, as amended, by and between the Registrant and The Trustees of Columbia University in the City of New York.
23.1	Consent of Ernst & Young LLP, Independent Registered Public Accounting Firm.
23.2*	Consent of Gunderson Dettmer Stough Villeneuve Franklin & Hachigian, LLP (contained in Exhibit 5.1).
24.1	Power of Attorney (included on signature page).

* To be filed by amendment.

† Pursuant to Item 601(b)(10) of Regulation S-K certain confidential portion of this exhibit have been omitted by means of marking such portions with asterisks as the identified confidential portions (i) are not material and (ii) would likely cause competitive harm to the registrant if publicly disclosed.

(b) Financial Statement Schedules. All schedules have been omitted because the information required to be presented in them is not applicable or is shown in the consolidated financial statements or related notes.

Item17. Undertakings

The undersigned registrant hereby undertakes to provide to the underwriter at the closing specified in the underwriting agreements certificates in such denominations and registered in such names as required by the underwriter to permit prompt delivery to each purchaser.

Insofar as indemnification for liabilities arising under the Securities Act of 1933, as amended, may be permitted to directors, officers and controlling persons of the registrant pursuant to the foregoing provisions, or otherwise, the registrant has been advised that in the opinion of the SEC such indemnification is against public policy as expressed in the Act and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the registrant of expenses incurred or paid by a director, officer or controlling person of the registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Act and will be governed by the final adjudication of such issue.

The undersigned registrant hereby undertakes that:

(1) For purposes of determining any liability under the Securities Act of 1933, as amended, the information omitted from the form of prospectus filed as part of this registration statement in reliance upon Rule 430A and contained in a form of prospectus filed by the registrant pursuant to Rule 424(b)(1) or (4) or 497(h) under the Securities Act of 1933, as amended, shall be deemed to be part of this registration statement as of the time it was declared effective.

(2) For the purpose of determining any liability under the Securities Act of 1933, as amended, each post-effective amendment that contains a form of prospectus shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, as amended, the registrant has duly caused this Registration Statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of La Jolla, State of California, on this 7th day of May, 2021.

Singular Genomics Systems, Inc.

/s/ Andrew Spaventa
Andrew Spaventa
Chief Executive Officer

POWER OF ATTORNEY

KNOW ALL PERSONS BY THESE PRESENTS, that each person whose signature appears below hereby constitutes and appoints Andrew Spaventa, Daralyn Durie and Dalen Meeter, and each of them, as his or her true and lawful attorney-in-fact and agent with full power of substitution, for him or her in any and all capacities, to sign any and all amendments to this registration statement (including post-effective amendments) and any registration statement related thereto filed pursuant to Rule 462(b) increasing the number of securities for which registration is sought, and to file the same, with all exhibits thereto and other documents in connection therewith, with the SEC, granting unto said attorney-in-fact and agent full power and authority to do and perform each and every act and thing requisite and necessary to be done in connection therewith, as fully for all intents and purposes as he or she might or could do in person, hereby ratifying and confirming all that said attorney-in-fact and agent, or his or her substitute, may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Act of 1933, as amended, this Registration Statement has been signed by the following persons in the capacities and on the dates indicated.

Signature	Title	Date
/s/ Andrew Spaventa Andrew Spaventa	Chief Executive Officer and Chair of the Board of Directors *(Principal Executive Officer)*	May 7, 2021
/s/ Dalen Meeter Dalen Meeter	Vice President, Finance *(Principal Financial Officer and Principal Accounting Officer)*	May 7, 2021
/s/ David Barker, Ph.D. David Barker, Ph.D.	Director	May 7, 2021
/s/ Andrew ElBardissi, M.D. Andrew ElBardissi, M.D.	Director	May 7, 2021
/s/ Kim Kamdar, Ph.D. Kim Kamdar, Ph.D.	Director	May 7, 2021
/s/ Michael Pellini, M.D. Michael Pellini, M.D.	Lead Independent Director	May 7, 2021
/s/ Jason Ryan Jason Ryan	Director	May 7, 2021

RESTATED CERTIFICATE OF INCORPORATION OF SINGULAR GENOMICS SYSTEMS, INC.

(Pursuant to Sections 242 and 245 of the General Corporation Law of the State of Delaware)

Singular Genomics Systems, Inc., a corporation organized and existing under and by virtue of the provisions of the General Corporation Law of the State of Delaware (the "General Corporation Law"),

DOES HEREBY CERTIFY:

FIRST: That the name of this corporation is Singular Genomics Systems, Inc. and that this corporation was originally incorporated pursuant to the General Corporation Law on June 3, 2016.

SECOND: That the Board of Directors of this corporation duly adopted resolutions proposing to amend and restate the Certificate of Incorporation of this corporation, declaring said amendment and restatement to be advisable and in the best interests of this corporation and its stockholders, and authorizing the appropriate officers of this corporation to solicit the consent of the stockholders therefor, which resolution setting forth the proposed amendment and restatement is as follows:

RESOLVED, that the Certificate of Incorporation of this corporation be amended and restated in its entirety as follows:

ARTICLE I

The name of this corporation is Singular Genomics Systems, Inc.

ARTICLE II

The address of the corporation's registered office in the State of Delaware is 3500 South DuPont Highway, in the City of Dover, County of Kent, Zip Code 19901. The name of the corporation's registered agent at such address is Incorporating Services, Ltd.

ARTICLE III

The nature of the business or purposes to be conducted or promoted is to engage in any lawful act or activity for which corporations may be organized under the General Corporation Law.

ARTICLE IV

A. Authorization of Stock. This corporation is authorized to issue two classes of stock to be designated, respectively, common stock and preferred stock. The total number of shares of

common stock authorized to be issued is 60,272,685, par value $0.0001 per share (the "Common Stock"). The total number of shares of preferred stock authorized to be issued is 38,826,388, par value $0.0001 per share (the "Preferred Stock"), 6,520,790 of which shares are designated as "Series Seed Preferred Stock", 12,932,429 of which shares are designated as "Series A Preferred Stock", and 19,373,169 of which shares are designated as "Series B Preferred Stock".

B. Rights, Preferences and Restrictions of Preferred Stock. The rights, preferences, privileges and restrictions granted to and imposed on the Preferred Stock are as set forth below in this Article IV(B).

1. Dividend Provisions.

(a) The holders of shares of Series B Preferred Stock shall be entitled to receive dividends, out of any assets legally available therefor, prior and in preference to any dividend (payable other than in Common Stock or other securities and rights convertible into or entitling the holder thereof to receive, directly or indirectly, additional shares of Common Stock) on the (i) Series A Preferred Stock or the Series Seed Preferred Stock (together, the "Junior Preferred Stock") or (ii) on the Common Stock, at the applicable Dividend Rate (as defined below), payable when, as and if declared by the Board of Directors. Such dividends shall not be cumulative. The holders of the outstanding Series B Preferred Stock can waive any dividend preference that such holders shall be entitled to receive under this Section 1(a) upon the affirmative vote or written consent of the holders of at least a majority of the then outstanding Series B Preferred Stock.

(b) The holders of shares of Junior Preferred Stock shall be entitled to receive, on a *pari passu* basis, dividends, out of any assets legally available therefor, prior and in preference to any declaration or payment of any dividend (payable other than in Common Stock or other securities and rights convertible into or entitling the holder thereof to receive, directly or indirectly, additional shares of Common Stock) on the Common Stock, at the applicable Dividend Rate (as defined below), payable when, as and if declared by the Board of Directors. Such dividends shall not be cumulative. The holders of the outstanding Junior Preferred Stock can waive any dividend preference that such holders shall be entitled to receive under this Section 1(b) upon the affirmative vote or written consent of the holders of at least a majority of the then outstanding Junior Preferred Stock (voting together as a single class and not as separate series, and on an as-converted basis).

(c) For purposes of this Section 1, "Dividend Rate" shall mean $0.055208 per annum for each share of Series Seed Preferred Stock, $0.12372 per annum for each share of Series A Preferred Stock and $0.18582 per annum for each share of Series B Preferred Stock (each as adjusted for any stock splits, stock dividends, combinations, subdivisions, recapitalizations or the like).

(d) After payment of such dividends, any additional dividends or distributions shall be distributed among all holders of Common Stock and Preferred Stock in proportion to the number of shares of Common Stock that would be held by each such holder if all shares of Preferred Stock were converted to Common Stock at the then effective conversion rate.

2. Liquidation Preference.

(a) In the event of any Liquidation Event (as defined below), either voluntary or involuntary, the holders of Series B Preferred Stock shall be entitled to receive out of the proceeds or assets of this corporation available for distribution to its stockholders (the "Proceeds"), prior and in preference to any distribution of the Proceeds of such Liquidation Event to the holders of any other series of Preferred Stock or Common Stock by reason of their ownership thereof, an amount per share equal to the sum of the applicable Original Issue Price (as defined below) of the Series B Preferred Stock, plus declared but unpaid dividends on such share. If, upon the occurrence of such event, the Proceeds thus distributed among the holders of the Series B Preferred Stock shall be insufficient to permit the payment to such holders of the full aforesaid preferential amounts, then the entire Proceeds legally available for distribution shall be distributed ratably among the holders of the Series B Preferred Stock in proportion to the full preferential amount that each such holder is otherwise entitled to receive under this subsection (a).

(b) Upon completion of the distribution required by subsection (a) of this Section 2, the holders of Junior Preferred Stock shall be entitled to receive, on a *pari passu* basis, out of the Proceeds or assets of this corporation remaining available for distribution, prior and in preference to any distribution of the Proceeds of such Liquidation Event to the holders of Common Stock by reason of their ownership thereof, an amount per share equal to the sum of the applicable Original Issue Price (as defined below) for each such series of Junior Preferred Stock, plus declared but unpaid dividends on such share. If, upon the occurrence of such event, the Proceeds thus distributed among the holders of the Junior Preferred Stock shall be insufficient to permit the payment to such holders of the full aforesaid preferential amounts, then the entire remaining Proceeds legally available for distribution shall be distributed ratably among the holders of the Junior Preferred Stock in proportion to the full preferential amount that each such holder is otherwise entitled to receive under this subsection (b).

(c) For purposes of this Restated Certificate of Incorporation, "Original Issue Price" shall mean $0.6901 per share for each share of the Series Seed Preferred Stock, $1.5465 per share for each share of the Series A Preferred Stock and $2.3228 per share for each share of the Series B Preferred Stock (each as adjusted for any stock splits, stock dividends, combinations, subdivisions, recapitalizations or the like with respect to such series of Preferred Stock).

(d) Upon completion of the distributions required by subsections (a) and (b) of this Section 2, all of the remaining Proceeds available for distribution to stockholders shall be distributed among the holders of Common Stock pro rata based on the number of shares of Common Stock held by each.

(e) Notwithstanding the above, for purposes of determining the amount each holder of shares of a series of Preferred Stock is entitled to receive with respect to a Liquidation Event, each such holder of shares of a series of Preferred Stock shall be deemed to have converted (regardless of whether such holder actually converted) such holder's shares of such series into shares of Common Stock immediately prior to the Liquidation Event if, as a result of an actual conversion, such holder would receive, in the aggregate, an amount greater than the amount that would be distributed to such holder if such holder did not convert such series of

Preferred Stock into shares of Common Stock. If any such holder shall be deemed to have converted shares of Preferred Stock into Common Stock pursuant to this paragraph, then such holder shall not be entitled to receive any distribution that would otherwise be made to holders of Preferred Stock that have not converted (or have not been deemed to have converted) into shares of Common Stock.

(f) (i) For purposes of this Section 2, a "Liquidation Event" shall include (A) the closing of the sale, exclusive license, transfer or other disposition of all or substantially all of this corporation's assets ("Asset Sale"), (B) the consummation of the merger or consolidation of this corporation with or into another entity (except a merger or consolidation in which the holders of capital stock of this corporation immediately prior to such merger or consolidation continue to hold at least 50% of the voting power of the capital stock of this corporation or the surviving or acquiring entity), (C) the closing of the transfer (whether by merger, consolidation or otherwise), in one transaction or a series of related transactions, to a person or group of affiliated persons (other than an underwriter of this corporation's securities), of this corporation's securities if, after such closing, such person or group of affiliated persons would hold more than 50% of the outstanding voting stock of this corporation (or the surviving or acquiring entity) or (D) a liquidation, dissolution or winding up of this corporation; provided, however, that a transaction shall not constitute a Liquidation Event if its sole purpose is to change the state of this corporation's incorporation or to create a holding company that will be owned in substantially the same proportions by the persons who held this corporation's securities immediately prior to such transaction. Notwithstanding the prior sentence, the sale of shares of equity securities pursuant to a bona fide financing with venture capital or similar investors (including the sale of Series B Preferred Stock) shall not be deemed a "Liquidation Event." The treatment of any particular transaction or series of related transactions as a Liquidation Event may be waived by the vote or written consent of the holders of at least a majority of the then outstanding Preferred Stock (voting together as a single class and not as separate series, and on an as-converted basis), including, so long as any shares of Series B Preferred Stock remain outstanding, the holders of at least a majority of the then outstanding Series B Preferred Stock (together, the "Requisite Majority").

(ii) In any Liquidation Event, if Proceeds received by this corporation or its stockholders is other than cash, its value will be deemed its fair market value. Any securities shall be valued as follows:

(A) Securities not subject to investment letter or other similar restrictions on free marketability covered by (B) below:

(1) If traded on a securities exchange, the value shall be deemed to be the average of the closing prices of the securities on such exchange over the 20 trading-day period ending 3 trading days prior to the closing of the Liquidation Event;

(2) If actively traded over-the-counter, the value shall be deemed to be the average of the closing bid or sale prices (whichever is applicable) over the 20 trading-day period ending 3 trading days prior to the closing of the Liquidation Event; and

(3) If there is no active public market, the value shall be the fair market value thereof, as determined by the Board of Directors, provided that if the Requisite Majority objects to such valuation, then the valuation shall be determined by an investment banker selected by the Board of Directors and such holders of Preferred Stock, the fees of which shall be paid by this corporation.

(B) The method of valuation of securities subject to investment letter or other restrictions on free marketability (other than restrictions arising solely by virtue of a stockholder's status as an affiliate or former affiliate) shall be to make an appropriate discount from the market value determined as above in (A) (1), (2) or (3) to reflect the approximate fair market value thereof, as determined by the Board of Directors, provided that if the Requisite Majority objects to such valuation, then the valuation shall be determined by an investment banker selected by the Board of Directors and such holders of Preferred Stock, the fees of which shall be paid by this corporation.

(C) The foregoing methods for valuing non-cash consideration to be distributed in connection with a Liquidation Event shall, with the appropriate approval of the definitive agreements governing such Liquidation Event by the stockholders under the General Corporation Law and Section 6 of this Article IV(B), be superseded by the determination of such value set forth in the definitive agreements governing such Liquidation Event.

(iii) In the event the requirements of this Section 2 are not complied with, this corporation shall forthwith either:

(A) cause the closing of such Liquidation Event to be postponed until such time as the requirements of this Section 2 have been complied with; or

(B) cancel such transaction, in which event the rights, preferences and privileges of the holders of the Preferred Stock shall revert to and be the same as such rights, preferences and privileges existing immediately prior to the date of the first notice referred to in subsection 2(d)(iv) hereof.

(iv) This corporation shall give each holder of record of Preferred Stock written notice of such impending Liquidation Event not later than 20 days prior to the stockholders' meeting called to approve such transaction, or 20 days prior to the closing of such transaction, whichever is earlier, and shall also notify such holders in writing of the final approval of such transaction. The first of such notices shall describe the material terms and conditions of the impending transaction and the provisions of this Section 2, and this corporation shall thereafter give such holders prompt notice of any material changes. The transaction shall in no event take place sooner than 20 days after this corporation has given the first notice provided for herein or sooner than 10 days after this corporation has given notice of any material changes provided for herein; provided, however, that subject to compliance with the General Corporation Law such periods may be shortened or waived upon the written consent of the Requisite Majority.

(v) In the event of a Liquidation Event, if any portion of the consideration payable to the stockholders of this corporation is payable only upon satisfaction of

contingencies (the "Additional Consideration"), the definitive agreement executed in connection with such Liquidation Event shall provide that (A) the portion of such consideration that is not Additional Consideration (such portion, the "Initial Consideration") shall be allocated among the holders of capital stock of this corporation in accordance with Sections 2(a), (b) and (c) as if the Initial Consideration were the only consideration payable in connection with such Liquidation Event; and (b) any Additional Consideration which becomes payable to the stockholders of this corporation upon satisfaction of such contingencies shall be allocated among the holders of capital stock of this corporation in accordance with 2(a), (b) and (c) after taking into account the previous payment of the Initial Consideration as part of the same transaction. For the purposes of this Section 2(d)(v), consideration placed into escrow or retained as a holdback to be available for satisfaction of indemnification or similar obligations in connection with such Liquidation Event shall be deemed to be Additional Consideration.

3. Redemption. The Preferred Stock is not redeemable at the option of the holder thereof.

4. Conversion. The holders of the Preferred Stock shall have conversion rights as follows:

(a) Right to Convert. Each share of Preferred Stock shall be convertible, at the option of the holder thereof, at any time after the date of issuance of such share, at the office of this corporation or any transfer agent for such stock, into such number of fully paid and nonassessable shares of Common Stock as is determined by dividing the applicable Original Issue Price for such series by the applicable Conversion Price for such series (the conversion rate for a series of Preferred Stock into Common Stock is referred to herein as the "Conversion Rate" for such series), determined as hereafter provided, in effect on the date the certificate is surrendered for conversion. The initial Conversion Price per share for each series of Preferred Stock shall be the Original Issue Price applicable to such series; provided, however, that the Conversion Price for such series of Preferred Stock shall be subject to adjustment as set forth in subsection 4(d).

(b) Automatic Conversion. Each share of Preferred Stock shall automatically be converted into shares of Common Stock at the Conversion Rate at the time in effect for such series of Preferred Stock immediately upon the earlier of, (i) the closing of this corporation's sale of its Common Stock in a firm commitment underwritten public offering pursuant to a registration statement on Form S-1 under the Securities Act of 1933, as amended, the public offering price of which is not less than $6.968 per share (as adjusted for any stock splits, stock dividends, combinations, subdivisions, recapitalizations or the like) and $60,000,000 in the aggregate (a "Qualified Public Offering") or (ii) the date, or the occurrence of an event, specified by vote or written consent or agreement of the Requisite Majority of the then outstanding shares of Preferred Stock (voting together as a single class and not as separate series, and on an as-converted basis).

(c) Mechanics of Conversion. Before any holder of any series of Preferred Stock shall be entitled to voluntarily convert the same into shares of Common Stock, he or she or it shall surrender the certificate or certificates therefor, duly endorsed, at the office of this corporation or of any transfer agent for such Preferred Stock, and shall give written notice to this corporation at its principal corporate office, of the election to convert the same and shall state

therein the name or names in which the certificate or certificates for shares of Common Stock are to be issued. This corporation shall, as soon as practicable thereafter, issue and deliver at such office to such holder of Preferred Stock, or to the nominee or nominees of such holder, a certificate or certificates for the number of shares of Common Stock to which such holder shall be entitled as aforesaid. Such conversion shall be deemed to have been made immediately prior to the close of business on the date set forth for conversion in the written notice of the election to convert irrespective of the surrender of the shares of Preferred Stock to be converted, and the person or persons entitled to receive the shares of Common Stock issuable upon such conversion shall be treated for all purposes as the record holder or holders of such shares of Common Stock as of such date. If the conversion is in connection with an underwritten offering of securities registered pursuant to the Securities Act of 1933, as amended, the conversion may, at the option of any holder tendering any series of Preferred Stock for conversion, be conditioned upon the closing with the underwriters of the sale of securities pursuant to such offering, in which event the persons entitled to receive the Common Stock upon conversion of such Preferred Stock shall not be deemed to have converted such Preferred Stock until immediately prior to the closing of such sale of securities. If the conversion is in connection with the automatic conversion provisions of subsection 4(b)(ii) above, such conversion shall be deemed to have been made on the conversion date described in the stockholder consent approving such conversion, and the persons entitled to receive shares of Common Stock issuable upon such conversion shall be treated for all purposes as the record holders of such shares of Common Stock as of such date.

(d) Conversion Price Adjustments of Preferred Stock for Certain Dilutive Issuances, Splits and Combinations. The Conversion Price for a series of Preferred Stock shall be subject to adjustment from time to time as follows:

(i) (A) If this corporation shall issue, on or after the date upon which this Restated Certificate of Incorporation is accepted for filing by the Secretary of State of the State of Delaware (the "Filing Date"), any Additional Stock (as defined below) without consideration or for a consideration per share less than the Conversion Price applicable to a series of Preferred Stock in effect immediately prior to the issuance of such Additional Stock, the Conversion Price for such series in effect immediately prior to each such issuance shall forthwith (except as otherwise provided in this clause (i)) be adjusted to a price (calculated to the nearest one-hundredth of a cent) determined by multiplying such Conversion Price by a fraction, the numerator of which shall be the number of shares of Common Stock Outstanding (as defined below) immediately prior to such issuance plus the number of shares of Common Stock that the aggregate consideration received by this corporation for such issuance would purchase at such Conversion Price; and the denominator of which shall be the number of shares of Common Stock Outstanding (as defined below) immediately prior to such issuance plus the number of shares of such Additional Stock. For purposes of this Section 4(d)(i)(A), the term "Common Stock Outstanding" shall mean and include the following: (1) outstanding Common Stock, (2) Common Stock issuable upon conversion of all outstanding shares of Preferred Stock, and (3) outstanding Options. "Options" shall mean rights, options or warrants to subscribe for, purchase or otherwise acquire Common Stock or Convertible Securities and "Convertible Securities" shall mean any evidences of indebtedness, shares or other securities directly or indirectly convertible into or exchangeable for Common Stock, but excluding Options. Shares described in (1) through (3) above shall be included whether vested or unvested, whether contingent or non-contingent and whether exercisable or not yet exercisable. In the event that this corporation issues or sells, or is

deemed to have issued or sold, shares of Additional Stock that results in an adjustment to a Conversion Price pursuant to the provisions of this Section 4(d) (the "First Dilutive Issuance"), and this corporation then issues or sells, or is deemed to have issued or sold, shares of Additional Stock in a subsequent issuance other than the First Dilutive Issuance that would result in further adjustment to a Conversion Price (a "Subsequent Dilutive Issuance") pursuant to the same instruments as the First Dilutive Issuance, then and in each such case upon a Subsequent Dilutive Issuance the applicable Conversion Price for each series of Preferred Stock shall be reduced to the applicable Conversion Price that would have been in effect had the First Dilutive Issuance and each Subsequent Dilutive Issuance all occurred on the closing date of the First Dilutive Issuance.

(B) No adjustment of the Conversion Price for any series of Preferred Stock shall be made in an amount less than one-tenth of one cent per share. Except to the limited extent provided for in subsections (E)(3) and (E)(4), no adjustment of the Conversion Price of a series of Preferred Stock pursuant to this subsection 4(d)(i) shall have the effect of increasing such Conversion Price above the Conversion Price therefor in effect immediately prior to such adjustment.

(C) In the case of the issuance of Additional Stock for cash, the consideration shall be deemed to be the amount of cash paid therefor before deducting any reasonable discounts, commissions or other expenses allowed, paid or incurred by this corporation for any underwriting or otherwise in connection with the issuance and sale thereof.

(D) In the case of the issuance of the Additional Stock for a consideration in whole or in part other than cash, the consideration other than cash shall be deemed to be the fair market value thereof as determined by the Board of Directors, provided that if the Requisite Majority objects to such valuation, then the valuation shall be determined by an investment banker selected by the Board of Directors and such holders of Preferred Stock, the fees of which shall be paid by this corporation.

(E) In the case of the issuance of options to purchase or rights to subscribe for Common Stock, securities by their terms convertible into or exchangeable for Common Stock or options to purchase or rights to subscribe for such convertible or exchangeable securities, the following provisions shall apply for purposes of determining the number of shares of Additional Stock issued and the consideration paid therefor:

(1) The aggregate maximum number of shares of Common Stock deliverable upon exercise (assuming the satisfaction of any conditions to exercisability, including without limitation, the passage of time, but without taking into account potential antidilution adjustments) of such options to purchase or rights to subscribe for Common Stock shall be deemed to have been issued at the time such options or rights were issued and for a consideration equal to the consideration (determined in the manner provided in subsections 4(d)(i)(C) and (d)(i)(D)), if any, received by this corporation upon the issuance of such options or rights plus the minimum exercise price provided in such options or rights (without taking into account potential antidilution adjustments) for the Common Stock covered thereby.

(2) The aggregate maximum number of shares of Common Stock deliverable upon conversion of, or in exchange (assuming the satisfaction of any

conditions to convertibility or exchangeability, including, without limitation, the passage of time, but without taking into account potential antidilution adjustments) for, any such convertible or exchangeable securities or upon the exercise of options to purchase or rights to subscribe for such convertible or exchangeable securities and subsequent conversion or exchange thereof shall be deemed to have been issued at the time such securities were issued or such options or rights were issued and for a consideration equal to the consideration, if any, received by this corporation for any such securities and related options or rights (excluding any cash received on account of accrued interest or accrued dividends), plus the minimum additional consideration, if any, to be received by this corporation (without taking into account potential antidilution adjustments) upon the conversion or exchange of such securities or the exercise of any related options or rights (the consideration in each case to be determined in the manner provided in subsections 4(d)(i)(C) and (d)(i)(D)).

(3) In the event of any change in the number of shares of Common Stock deliverable or in the consideration payable to this corporation upon exercise of such options or rights or upon conversion of or in exchange for such convertible or exchangeable securities, the Conversion Price of a series of the Preferred Stock, to the extent in any way affected by or computed using such options, rights or securities, shall be recomputed to reflect such change, but no further adjustment shall be made for the actual issuance of Common Stock or any payment of such consideration upon the exercise of any such options or rights or the conversion or exchange of such securities.

(4) Upon the expiration of any such options or rights, the termination of any such rights to convert or exchange or the expiration of any options or rights related to such convertible or exchangeable securities, the Conversion Price of a series of the Preferred Stock, to the extent in any way affected by or computed using such options, rights or securities or options or rights related to such securities, shall be recomputed to reflect the issuance of only the number of shares of Common Stock (and convertible or exchangeable securities that remain in effect) actually issued upon the exercise of such options or rights, upon the conversion or exchange of such securities or upon the exercise of the options or rights related to such securities.

(5) The number of shares of Additional Stock deemed issued and the consideration deemed paid therefor pursuant to subsections 4(d)(i)(E)(1) and (2) shall be appropriately adjusted to reflect any change, termination or expiration of the type described in either subsection 4(d)(i)(E)(3) or (4).

(ii) "Additional Stock" shall mean any shares of Common Stock issued (or deemed to have been issued pursuant to subsection 4(d)(i)(E)) by this corporation on or after the Filing Date other than "Excluded Issuances". Excluded Issuances shall include (A) through (H) below:

(A) Common Stock issued pursuant to the conversion of Preferred Stock or the conversion or exercise of convertible or exercisable securities outstanding on the Filing Date;

(B) Common Stock issued to employees, directors, consultants and other service providers for the primary purpose of soliciting or retaining their services pursuant to plans or agreements approved by the Requisite Majority;

(C) Common Stock issued in connection with research and development partnerships, licensing, corporate partnering, collaborative arrangements or similar transactions approved by the Requisite Majority;

(D) Common Stock issued pursuant to any equipment leasing arrangement or bank credit arrangement, which arrangement is approved by the Requisite Majority;

(E) Common Stock issued in connection with a bona fide business acquisition by the Company, whether by merger, consolidation, sale of assets, sale or exchange of stock, reclassification, recapitalization or otherwise, which acquisition is approved by the Board of Directors and the Requisite Majority;

(F) Common Stock issued pursuant to a Qualified Public Offering;

(G) Common Stock issued pursuant to a transaction described in subsection 4(d)(iii) hereof; or

(H) Common Stock issued or deemed issued pursuant to subsection 4(d)(i)(E) as a result of a decrease in the Conversion Price of any series of Preferred Stock resulting from the operation of Section 4(d).

(iii) In the event this corporation should at any time or from time to time after the Filing Date fix a record date for the effectuation of a split or subdivision of the outstanding shares of Common Stock or the determination of holders of Common Stock entitled to receive a dividend or other distribution payable in additional shares of Common Stock or other securities or rights convertible into, or entitling the holder thereof to receive directly or indirectly, additional shares of Common Stock (hereinafter referred to as "Common Stock Equivalents") without payment of any consideration by such holder for the additional shares of Common Stock or the Common Stock Equivalents (including the additional shares of Common Stock issuable upon conversion or exercise thereof), then, as of such record date (or the date of such dividend distribution, split or subdivision if no record date is fixed), the Conversion Price of each series of the Preferred Stock shall be appropriately decreased so that the number of shares of Common Stock issuable on conversion of each share of such series shall be increased in proportion to such increase of the aggregate of shares of Common Stock outstanding and those issuable with respect to such Common Stock Equivalents with the number of shares issuable with respect to Common Stock Equivalents determined from time to time in the manner provided for deemed issuances in subsection 4(d)(i)(E).

(iv) If the number of shares of Common Stock outstanding at any time after the Filing Date is decreased by a combination of the outstanding shares of Common Stock, then, following the record date of such combination, the Conversion Price for each series of the Preferred Stock shall be appropriately increased so that the number of shares of Common

Stock issuable on conversion of each share of such series shall be decreased in proportion to such decrease in outstanding shares.

(e) Other Distributions. In the event this corporation shall declare a distribution payable in securities of other persons, evidences of indebtedness issued by this corporation or other persons, assets (excluding cash dividends) or options or rights not referred to in subsection 4(d)(iii), then, in each such case for the purpose of this subsection 4(e), the holders of the Preferred Stock shall be entitled to a proportionate share of any such distribution as though they were the holders of the number of shares of Common Stock into which their shares of Preferred Stock are convertible as of the record date fixed for the determination of the holders of Common Stock entitled to receive such distribution.

(f) Recapitalizations. If at any time or from time to time there shall be a recapitalization of the Common Stock (other than a subdivision, combination or merger or sale of assets transaction provided for elsewhere in this Section 4 or in Section 2) provision shall be made so that the holders of each series of the Preferred Stock shall thereafter be entitled to receive upon conversion of such series of the Preferred Stock the number of shares of stock or other securities or property of this corporation or otherwise, to which a holder of Common Stock deliverable upon conversion would have been entitled on such recapitalization. In any such case, appropriate adjustment shall be made in the application of the provisions of this Section 4 with respect to the rights of the holders of each series of the Preferred Stock after the recapitalization to the end that the provisions of this Section 4 (including adjustment of the applicable Conversion Prices then in effect and the number of shares purchasable upon conversion of such series of the Preferred Stock) shall be applicable after that event as nearly equivalently as may be practicable.

(g) No Fractional Shares and Certificate as to Adjustments.

(i) No fractional shares shall be issued upon the conversion of any share or shares of any series of the Preferred Stock and the aggregate number of shares of Common Stock to be issued to particular stockholders, shall be rounded down to the nearest whole share and this corporation shall pay in cash the fair market value of any fractional shares as of the time when entitlement to receive such fractions is determined. Whether or not fractional shares would be issuable upon such conversion shall be determined on the basis of the total number of shares of Preferred Stock the holder is at the time converting into Common Stock and the number of shares of Common Stock issuable upon such conversion.

(ii) Upon the occurrence of each adjustment or readjustment of the Conversion Price of any series of Preferred Stock pursuant to this Section 4, this corporation, at its expense, shall promptly compute such adjustment or readjustment in accordance with the terms hereof and prepare and furnish to each holder of Preferred Stock a certificate setting forth such adjustment or readjustment and showing in detail the facts upon which such adjustment or readjustment is based. This corporation shall, upon the written request at any time of any holder of Preferred Stock, furnish or cause to be furnished to such holder a like certificate setting forth (A) such adjustment and readjustment, (B) the Conversion Price for such series of Preferred Stock at the time in effect, and (C) the number of shares of Common Stock and the amount, if any, of other property that at the time would be received upon the conversion of a share of such series of Preferred Stock.

(h) Notices of Record Date. In the event of any taking by this corporation of a record of the holders of any class of securities for the purpose of determining the holders thereof who are entitled to receive any dividend (other than a cash dividend) or other distribution, this corporation shall mail to each holder of Preferred Stock, at least 10 days prior to the date specified therein, a notice specifying the date on which any such record is to be taken for the purpose of such dividend or distribution, and the amount and character of such dividend or distribution.

(i) Reservation of Stock Issuable Upon Conversion. This corporation shall at all times reserve and keep available out of its authorized but unissued shares of Common Stock, solely for the purpose of effecting the conversion of the shares of the Preferred Stock, such number of its shares of Common Stock as shall from time to time be sufficient to effect the conversion of all outstanding shares of the Preferred Stock; and if at any time the number of authorized but unissued shares of Common Stock shall not be sufficient to effect the conversion of all then outstanding shares of the Preferred Stock, in addition to such other remedies as shall be available to the holders of Preferred Stock, this corporation will take such corporate action as may, in the opinion of its counsel, be necessary to increase its authorized but unissued shares of Common Stock to such number of shares as shall be sufficient for such purposes, including, without limitation, engaging in best efforts to obtain the requisite stockholder approval of any necessary amendment to this Restated Certificate of Incorporation.

(j) Waiver of Adjustment to Conversion Price. Notwithstanding anything herein to the contrary, any downward adjustment of the Conversion Price of any series of Preferred Stock may be waived, either prospectively or retroactively and either generally or in a particular instance, by the consent or vote of the holders of at least a majority of the outstanding shares of such series of Preferred Stock (voting as separate series). Any such waiver shall bind all future holders of shares of such series of Preferred Stock.

5. Voting Rights.

(a) General Voting Rights. The holder of each share of each series of Preferred Stock shall have the right to one vote for each share of Common Stock into which such Preferred Stock could then be converted, and with respect to such vote, such holder shall have full voting rights and powers equal to the voting rights and powers of the holders of Common Stock, and shall be entitled, notwithstanding any provision hereof, to notice of any stockholders' meeting in accordance with the Bylaws of this corporation, and except as provided by law or in subsection 5(b) below with respect to the election of directors by the separate class vote of the holders of Common Stock, shall be entitled to vote, together with holders of Common Stock, with respect to any question upon which holders of Common Stock have the right to vote. Fractional votes shall not, however, be permitted and any fractional voting rights available on an as-converted basis (after aggregating all shares into which shares of Preferred Stock held by each holder could be converted) shall be rounded to the nearest whole number (with one-half being rounded upward).

(b) Voting for the Election of Directors. The holders of outstanding Common Stock shall be entitled to elect one (1) director of this corporation at any election of directors. The holders of Series Seed Preferred Stock and Series A Preferred Stock (voting together as a single class and not as separate series and on an as-converted basis) shall be entitled

to elect one (1) director of this corporation at any election of directors (the "Series Seed/A Director"). The holders of Series B Preferred Stock shall be entitled to elect one (1) director of this corporation at any election of directors (the "Series B Director", and collectively with the Series Seed/A Director, the "Preferred Directors"). The holders of Preferred Stock and Common Stock (voting together as a single class and not as separate series, and on an as-converted basis) shall be entitled to elect any remaining directors of this corporation.

Notwithstanding the provisions of Section 223(a)(1) and 223(a)(2) of the General Corporation Law, any vacancy, including newly created directorships resulting from any increase in the authorized number of directors or amendment of this Restated Certificate of Incorporation, and vacancies created by removal or resignation of a director, may be filled by a majority of the directors then in office, though less than a quorum, or by a sole remaining director, and the directors so chosen shall hold office until the next annual election and until their successors are duly elected and shall qualify, unless sooner displaced; provided, however, that where such vacancy occurs among the directors elected by the holders of a class or series of stock, the holders of shares of such class or series may override the Board of Directors' action to fill such vacancy by (i) voting for their own designee to fill such vacancy at a meeting of this corporation's stockholders or (ii) written consent, if the consenting stockholders hold a sufficient number of shares to elect their designee at a meeting of the stockholders. Any director may be removed during his or her term of office without cause by, and only by, the affirmative vote of the holders of the shares of the class or series of stock entitled to elect such director or directors, given either at a special meeting of such stockholders duly called for that purpose or pursuant to a written consent of stockholders, and any vacancy thereby created may be filled by the holders of that class or series of stock represented at the meeting or pursuant to written consent.

6. Protective Provisions. So long as any shares of the Preferred Stock remain outstanding, this corporation shall not (by amendment, merger, consolidation or otherwise) without (in addition to any other vote required by law or the Certificate of Incorporation) first obtaining the approval by vote or written consent, as provided by law, of the Requisite Majority:

(a) amend, alter or repeal any provision of the Restated Certificate of Incorporation or the bylaws of this corporation, or any waiver of any provision thereof;

(b) take any action that affects the rights, preferences or privileges of the Preferred Stock;

(c) increase or decrease the total number of authorized shares of any capital stock of this corporation or designated shares of any series of Preferred Stock;

(d) increase the number of shares reserved for issuance pursuant to any equity incentive plans;

(e) create, or authorize the creation of, or issue or obligate itself to issue shares of, any additional class or series of capital stock;

(f) consummate a Liquidation Event or effect any other merger or consolidation;

(g) change the authorized number of directors of this corporation;

(h) pay or declare any dividend on any shares of capital stock of this corporation;

(i) do any act or thing which would result in taxation of the holders of shares of Preferred Stock under Section 305 of the Internal Revenue Code of 1986, as amended (or any comparable provision of the Internal Revenue Code as hereafter from time to time amended);

(j) redeem, purchase or otherwise acquire (or pay into or set aside for a sinking fund for such purpose) any share or shares of Preferred Stock or Common Stock; provided, however, that this restriction shall not apply to the repurchase of shares of Common Stock from employees, officers, directors, consultants or other persons performing services for this corporation or any subsidiary pursuant to agreements under which this corporation has the option to repurchase such shares upon the occurrence of certain events, such as the termination of employment or service, or pursuant to a right of first refusal;

(k) create or authorize to create any debt security; or

(l) create or hold capital stock in any subsidiary that is not a wholly-owned subsidiary or dispose of any stock or all or substantially all of the assets of any subsidiary.

(m) authorize or permit any subsidiary to do any of the foregoing, as applicable.

7. Status of Converted Stock. In the event any shares of Preferred Stock shall be converted pursuant to Section 4 hereof, the shares so converted shall be cancelled and shall not be issuable by this corporation. The Restated Certificate of Incorporation of this corporation shall be appropriately amended to effect the corresponding reduction in this corporation's authorized capital stock.

8. Notices. Any notice required by the provisions of this Article IV(B) to be given to holders of shares of Preferred Stock shall be deemed given (i) if deposited in the United States mail, postage prepaid, and addressed to each holder of record at his, her or its address appearing on the books of this corporation, (ii) if such notice is provided by electronic transmission in a manner permitted by Section 232 of the General Corporation Law, or (iii) if such notice is provided in another manner then permitted by the General Corporation Law.

C. Common Stock. The rights, preferences, privileges and restrictions granted to and imposed on the Common Stock are as set forth below in this Article IV(C).

1. Dividend Rights. Subject to the prior or contemporaneous rights of holders of all classes of stock at the time outstanding having prior rights as to dividends, the holders of the Common Stock shall be entitled to receive, when, as and if declared by the Board of Directors, out of any assets of this corporation legally available therefor, any dividends as may be declared from time to time by the Board of Directors.

2. Liquidation Rights. Upon the liquidation, dissolution or winding up of this corporation, the assets of this corporation shall be distributed as provided in Section 2 of Article IV(B) hereof.

3. Redemption. The Common Stock is not redeemable at the option of the holder.

4. Voting Rights. The holder of each share of Common Stock shall have the right to one vote for each such share, shall be entitled to notice of any stockholders' meeting in accordance with the Bylaws of this corporation, and shall be entitled to vote upon such matters and in such manner as may be provided by law. Subject to obtaining such votes or consents as may be required by Section 6 of Article IV(B), the number of authorized shares of Common Stock may be increased or decreased (but not below the number of shares thereof then outstanding) by the affirmative vote of the holders of a majority of the stock of this corporation entitled to vote (voting together as a single class and on an as-converted basis), irrespective of the provisions of Section 242(b)(2) of the General Corporation Law.

ARTICLE V

Except as otherwise provided in this Restated Certificate of Incorporation, in furtherance and not in limitation of the powers conferred by statute, the Board of Directors is expressly authorized to make, repeal, alter, amend and rescind any or all of the Bylaws of this corporation.

ARTICLE VI

The number of directors of this corporation shall be determined in the manner set forth in the Bylaws of this corporation.

ARTICLE VII

Elections of directors need not be by written ballot unless the Bylaws of this corporation shall so provide.

ARTICLE VIII

Meetings of stockholders may be held within or without the State of Delaware, as the Bylaws of this corporation may provide. The books of this corporation may be kept (subject to any provision contained in the General Corporation Law) outside the State of Delaware at such place or places as may be designated from time to time by the Board of Directors or in the Bylaws of this corporation.

ARTICLE IX

A director of this corporation shall not be personally liable to this corporation or its stockholders for monetary damages for breach of fiduciary duty as a director, except for liability (i) for any breach of the director's duty of loyalty to this corporation or its stockholders, (ii) for acts or omissions not in good faith or that involve intentional misconduct or a knowing violation

of law, (iii) under Section 174 of the General Corporation Law, or (iv) for any transaction from which the director derived any improper personal benefit. If the General Corporation Law is amended after approval by the stockholders of this Article IX to authorize corporate action further eliminating or limiting the personal liability of directors, then the liability of a director of this corporation shall be eliminated or limited to the fullest extent permitted by the General Corporation Law as so amended.

Any amendment, repeal or modification of the foregoing provisions of this Article IX by the stockholders of this corporation shall not adversely affect any right or protection of a director of this corporation existing at the time of, or increase the liability of any director of this corporation with respect to any acts or omissions of such director occurring prior to, such amendment, repeal or modification.

ARTICLE X

Subject to any additional vote required by this Restated Certificate of Incorporation or the Bylaws, this corporation reserves the right to amend, alter, change or repeal any provision contained in this Restated Certificate of Incorporation, in the manner now or hereafter prescribed by statute.

ARTICLE XI

To the fullest extent permitted by applicable law, this corporation is authorized to provide indemnification of (and advancement of expenses to) directors, officers, employees and agents of this corporation (and any other persons to which General Corporation Law permits this corporation to provide indemnification) through Bylaw provisions, agreements with such persons, vote of stockholders or disinterested directors or otherwise, in excess of the indemnification and advancement otherwise permitted by Section 145 of the General Corporation Law, subject only to limits created by applicable General Corporation Law (statutory or non-statutory), with respect to actions for breach of duty to this corporation, its stockholders, and others.

Any amendment, repeal or modification of the foregoing provisions of this Article XI shall not adversely affect any right or protection of a director, officer, employee, agent or other person existing at the time of, or increase the liability of any such person with respect to any acts or omissions of such person occurring prior to, such amendment, repeal or modification.

ARTICLE XII

This corporation renounces any interest or expectancy of this corporation in, or in being offered an opportunity to participate in, an Excluded Opportunity. An "Excluded Opportunity" is any matter, transaction or interest that is presented to, or acquired, created or developed by, or which otherwise comes into the possession of, (i) any director of this corporation who is not an employee of this corporation or any of its subsidiaries, or (ii) any holder of Preferred Stock or any partner, member, director, stockholder, employee or agent of any such holder, other than someone who is an employee of this corporation or any of its subsidiaries (collectively, "Covered Persons"), unless such matter, transaction or interest is presented to, or acquired, created or developed by, or otherwise comes into the possession of, a Covered Person expressly and solely in such Covered Person's capacity as a director of this corporation.

ARTICLE XIII

In connection with repurchases by this corporation of its Common Stock from employees, officers, directors, advisors, consultants or other persons performing services for this corporation or any subsidiary pursuant to agreements under which this corporation has the option to repurchase such shares at cost upon the occurrence of certain events, such as the termination of employment, Section 500 of the California Corporations Code shall not apply in all or in part with respect to such repurchases. Repurchases and distributions by the corporation may be made without regard to the "preferential dividends arrears amount" or any "preferential rights amount," as such terms are defined in Section 500(b) of the California Corporations Code.

* * *

THIRD: That the foregoing amendment and restatement was approved by the holders of the requisite number of shares of said corporation in accordance with Section 228 of the General Corporation Law.

FOURTH: That said Restated Certificate of Incorporation, which restates and integrates and further amends the provisions of this corporation's Restated Certificate of Incorporation, has been duly adopted in accordance with Sections 242 and 245 of the General Corporation Law.

IN WITNESS WHEREOF, this Restated Certificate of Incorporation has been executed by a duly authorized officer of this corporation on this 27th day of June, 2019.

/s/ Andrew Spaventa

Andrew Spaventa, Chief Executive Officer

CERTIFICATE OF AMENDMENT TO THE
RESTATED CERTIFICATE OF INCORPORATION
OF
SINGULAR GENOMICS SYSTEMS, INC.

(Pursuant to Section 242 of the
General Corporation Law of the State of Delaware)

Singular Genomics Systems, Inc., a corporation organized and existing under and by virtue of the provisions of the General Corporation Law of the State of Delaware (the "General Corporation Law"),

DOES HEREBY CERTIFY:

FIRST: That the name of this corporation is Singular Genomics Systems, Inc. and that this corporation was originally incorporated pursuant to the General Corporation Law on June 3, 2016.

SECOND: Pursuant to Section 242 of the DGCL, this Certificate of Amendment to the Restated Certificate of Incorporation of the Corporation (the "***Certificate of Amendment***") amends the Restated Certificate of Incorporation of the Corporation, as amended (the "***Restated Certificate of Incorporation***") as follows:

1. The third sentence of Article FOURTH(A) of the Restated Certificate of Incorporation is hereby amended to read in its entirety as follows:

The total number of shares of preferred stock authorized to be issued is 39,020,122, par value $0.0001 per share (the "Preferred Stock"), 6,520,790 of which shares are designated as "Series Seed Preferred Stock", 12,932,429 of which shares are designated as "Series A Preferred Stock", and 19,566,903 of which shares are designated as "Series B Preferred Stock".

* * * *

THIRD: The Board of Directors of the Corporation duly approved the Certificate of Amendment in accordance with the provisions of Sections 141 and 242 of the DGCL.

FOURTH: The holders of the requisite number of shares of the Corporation approved and adopted the Certificate of Amendment in accordance with Sections 228 and 242 of the DGCL.

FIFTH: Other than as set forth in this Certificate of Amendment, the Restated Certificate of Incorporation, as amended, shall remain in full force and effect, without modification, amendment or change.

* * *

IN WITNESS WHEREOF, this Certificate of Amendment to the Restated Certificate of Incorporation has been executed by a duly authorized officer of this corporation on this 8th day of November, 2019.

/s/ Andrew Spaventa

Andrew Spaventa, Chief Executive Officer

BYLAWS OF

SINGULAR GENOMICS SYSTEMS, INC.

(A DELAWARE CORPORATION)

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BYLAWS
OF
SINGULAR GENOMICS SYSTEMS, INC.

ARTICLE I

OFFICES

1.1 **Registered Office**. The registered office shall be in the City of Dover, County of Kent, State of Delaware.

1.2 **Offices**. The corporation may also have offices at such other places both within and without the State of Delaware as the Board of Directors may from time to time determine or the business of the corporation may require.

ARTICLE II
MEETINGS OF STOCKHOLDERS

2.1 **Location**. All meetings of the stockholders for the election of directors shall be held at such place as may be fixed from time to time by the Board of Directors, or at such other place either within or without the State of Delaware as shall be designated from time to time by the Board of Directors and stated in the notice of the meeting; provided, however, that the Board of Directors may, in its sole discretion, determine that the meeting shall not be held at any place, but may instead be held solely by means of remote communication as authorized by Section 211 of the Delaware General Corporations Law ("DGCL"). Meetings of stockholders for any other purpose may be held at such time and place, if any, within or without the State of Delaware, as shall be stated in the notice of the meeting or in a duly executed waiver of notice thereof, or a waiver by electronic transmission by the person entitled to notice.

2.2 **Timing**. Annual meetings of stockholders, commencing with the year 2015, shall be held at such date and time as shall be designated from time to time by the Board of Directors and stated in the notice of the meeting, at which they shall elect by a plurality vote a Board of Directors, and transact such other business as may properly be brought before the meeting.

2.3 **Notice of Meeting**. Written notice of any stockholder meeting stating the place, if any, date and hour of the meeting, the means of remote communication, if any, by which stockholders and proxyholders may be deemed to be present in person and vote at such meeting, shall be given to each stockholder entitled to vote at such meeting not fewer than ten (10) nor more than sixty (60) days before the date of the meeting.

2.4 **Stockholders' Records**. The officer who has charge of the stock ledger of the corporation shall prepare and make, at least ten (10) days before every meeting of stockholders, a complete list of the stockholders entitled to vote at the meeting, arranged in alphabetical order, and showing the address (but not the electronic address or other electronic contact information) of each stockholder and the number of shares registered in the name of each stockholder. Such list

shall be open to the examination of any stockholder, for any purpose germane to the meeting for a period of at least 10 days prior to the meeting: (i) on a reasonably accessible electronic network, provided that the information required to gain access to such list is provided with the notice of the meeting, or (ii) during ordinary business hours, at the principal place of business of the corporation. In the event that the corporation determines to make the list available on an electronic network, the corporation may take reasonable steps to ensure that such information is available only to stockholders of the corporation. If the meeting is to be held at a place, then the list shall be produced and kept at the time and place of the meeting during the whole time thereof, and may be inspected by any stockholder who is present. If the meeting is to be held solely by means of remote communication, then the list shall also be open to the examination of any stockholder during the whole time of the meeting on a reasonably accessible electronic network, and the information required to access such list shall be provided with the notice of the meeting.

2.5 **Special Meetings**. Special meetings of the stockholders, for any purpose or purposes, unless otherwise prescribed by statute or by the certificate of incorporation, may be called by the Chief Executive Officer and shall be called by the Chief Executive Officer, president or secretary at the request in writing of a majority of the Board of Directors, or at the request in writing of stockholders owning at least fifty percent (50%) in amount of the entire capital stock of the corporation issued and outstanding and entitled to vote. Such request shall state the purpose or purposes of the proposed meeting.

2.6 **Notice of Meeting**. Written notice of a special meeting stating the place, date and hour of the meeting and the purpose or purposes for which the meeting is called, shall be given not fewer than ten (10) nor more than sixty (60) days before the date of the meeting, to each stockholder entitled to vote at such meeting. The means of remote communication, if any, by which stockholders and proxyholders may be deemed to be present in person and vote at such meeting shall also be provided in the notice.

2.7 **Business Transacted at Special Meeting**. Business transacted at any special meeting of stockholders shall be limited to the purposes stated in the notice.

2.8 **Quorum; Meeting Adjournment; Presence by Remote Means**.

(a) *Quorum; Meeting Adjournment*. The holders of a majority of the stock issued and outstanding and entitled to vote thereat, present in person or represented by proxy, shall constitute a quorum at all meetings of the stockholders for the transaction of business except as otherwise provided by statute or by the certificate of incorporation. If, however, such quorum shall not be present or represented at any meeting of the stockholders, the stockholders entitled to vote thereat, present in person or represented by proxy, shall have power to adjourn the meeting from time to time, without notice other than announcement at the meeting, until a quorum shall be present or represented. At such adjourned meeting at which a quorum shall be present or represented, any business may be transacted that might have been transacted at the meeting as originally notified. If the adjournment is for more than thirty (30) days, or if after the adjournment a new record date is fixed for the adjourned meeting, a notice of the adjourned meeting shall be given to each stockholder of record entitled to vote at the meeting.

(b) *Presence by Remote Means*. If authorized by the Board of Directors in its sole discretion, and subject to such guidelines and procedures as the Board of Directors may adopt, stockholders and proxyholders not physically present at a meeting of stockholders may, by means of remote communication:

(1) participate in a meeting of stockholders; and

(2) be deemed present in person and vote at a meeting of stockholders whether such meeting is to be held at a designated place or solely by means of remote communication, provided that (i) the corporation shall implement reasonable measures to verify that each person deemed present and permitted to vote at the meeting by means of remote communication is a stockholder or proxyholder, (ii) the corporation shall implement reasonable measures to provide such stockholders and proxyholders a reasonable opportunity to participate in the meeting and to vote on matters submitted to the stockholders, including an opportunity to read or hear the proceedings of the meeting substantially concurrently with such proceedings, and (iii) if any stockholder or proxyholder votes or takes other action at the meeting by means of remote communication, a record of such vote or other action shall be maintained by the corporation.

2.9 **Voting Thresholds**. When a quorum is present at any meeting, the vote of the holders of a majority of the stock having voting power present in person or represented by proxy shall decide any question brought before such meeting, unless the question is one upon which by express provision of the statutes or of the certificate of incorporation, a different vote is required, in which case such express provision shall govern and control the decision of such question.

2.10 **Number of Votes Per Share**. Unless otherwise provided in the certificate of incorporation, each stockholder shall at every meeting of the stockholders be entitled to one vote by such stockholder or by proxy for each share of the capital stock having voting power held by such stockholder, but no proxy shall be voted on after three years from its date, unless the proxy provides for a longer period.

2.11 **Action by Written Consent of Stockholders; Electronic Consent; Notice of Action**.

(a) *Action by Written Consent of Stockholders*. Unless otherwise provided by the certificate of incorporation, any action required or permitted to be taken at any annual or special meeting of the stockholders may be taken without a meeting, without prior notice and without a vote, if a consent in writing setting forth the action so taken, is signed in a manner permitted by law by the holders of outstanding stock having not less than the number of votes that would be necessary to authorize or take such action at a meeting at which all shares entitled to vote thereon were present and voted. Written stockholder consents shall bear the date of signature of each stockholder who signs the consent in the manner permitted by law and shall be delivered to the corporation as provided in subsection (b) below. No written consent shall be effective to take the action set forth therein unless, within sixty (60) days of the earliest dated consent delivered to the corporation in the manner provided above, written consents signed by a sufficient number of stockholders to take the action set forth therein are delivered to the corporation in the manner provided above.

(b) *Electronic Consent*. A telegram, cablegram or other electronic transmission consenting to an action to be taken and transmitted by a stockholder or proxyholder, or a person or persons authorized to act for a stockholder or proxyholder, shall be deemed to be written, signed and dated for the purposes of this section, provided that any such telegram, cablegram or other electronic transmission sets forth or, is delivered with information from which the corporation can determine (1) that the telegram, cablegram or other electronic transmission was transmitted by the stockholder or proxyholder or by a person or persons authorized to act for the stockholder or proxyholder and (2) the date on which such stockholder or proxyholder or authorized person or persons transmitted such telegram, cablegram or electronic transmission. The date on which such telegram, cablegram or electronic transmission is transmitted shall be deemed to be the date on which such consent was signed. No consent given by telegram, cablegram or other electronic transmission shall be deemed to have been delivered until such consent is reproduced in paper form and until such paper form is delivered to the corporation by delivery to its registered office in the State of Delaware, its principal place of business or an officer or agent of the corporation having custody of the book in which proceedings of meetings of stockholders are recorded. Delivery made to a corporation's registered office shall be made by hand or by certified or registered mail, return receipt requested. Notwithstanding the foregoing limitations on delivery, consents given by telegram, cablegram or other electronic transmission may be otherwise delivered to the principal place of business of the corporation or to an officer or agent of the corporation having custody of the book in which proceedings of meetings of stockholders are recorded if, to the extent and in the manner provided by resolution of the Board of Directors of the corporation.

(c) *Notice of Action*. Prompt notice of any action taken pursuant to this Section 2.11 shall be provided to the stockholders in accordance with Section 228(e) of the DGCL.

ARTICLE III
DIRECTORS

3.1 **Authorized Directors**. The number of directors that shall constitute the whole Board of Directors shall be determined by resolution of the Board of Directors or by the stockholders at the annual meeting of the stockholders, except as provided in Section 3.2 of this Article, and each director elected shall hold office until his or her successor is elected and qualified. Directors need not be stockholders.

3.2 **Vacancies**. Unless otherwise provided in the corporation's certificate of incorporation, as it may be amended, vacancies and newly created directorships resulting from any increase in the authorized number of directors may be filled by a majority of the directors then in office, though less than a quorum, or by a sole remaining director, and the directors so chosen shall hold office until the next annual election and until their successors are duly elected and shall qualify, unless sooner displaced. If there are no directors in office, then an election of directors may be held in the manner provided by statute. If, at the time of filling any vacancy or any newly created directorship, the directors then in office shall constitute less than a majority of the whole Board of Directors (as constituted immediately prior to any such increase), the Court of Chancery may, upon application of any stockholder or stockholders holding at least a majority f the total number of the shares at the time outstanding having the right to vote for such directors, summarily

order an election to be held to fill any such vacancies or newly created directorships, or to replace the directors chosen by the directors then in office.

3.3 **Board Authority**. The business of the corporation shall be managed by or under the direction of its Board of Directors, which may exercise all such powers of the corporation and do all such lawful acts and things as are not by statute or by the certificate of incorporation or by these bylaws directed or required to be exercised or done by the stockholders.

3.4 **Location of Meetings**. The Board of Directors of the corporation may hold meetings, both regular and special, either within or without the State of Delaware.

3.5 **First Meeting**. The first meeting of each newly elected Board of Directors shall be held at such time and place as shall be fixed by the vote of the stockholders at the annual meeting and no notice of such meeting shall be necessary to the newly elected directors in order to legally constitute the meeting, provided a quorum shall be present. In the event of the failure of the stockholders to fix the time or place of such first meeting of the newly elected Board of Directors, or in the event such meeting is not held at the time and place so fixed by the stockholders, the meeting may be held at such time and place as shall be specified in a notice given as hereinafter provided for special meetings of the Board of Directors, or as shall be specified in a written waiver signed by all of the directors.

3.6 **Regular Meetings**. Regular meetings of the Board of Directors may be held without notice at such time and at such place as shall from time to time be determined by the Board of Directors.

3.7 **Special Meetings**. Special meetings of the Board of Directors may be called by the Chief Executive Officer upon notice to each director; special meetings shall be called by the Chief Executive Officer, president or secretary in like manner and on like notice on the written request of two (2) directors unless the Board of Directors consists of only one director, in which case special meetings shall be called by the Chief Executive Officer, president or secretary in like manner and on like notice on the written request of the sole director. Notice of any special meeting shall be given to each director at his or her business or residence in writing, or by telegram, facsimile transmission, telephone communication or electronic transmission (provided, with respect to electronic transmission, that the director has consented to receive the form of transmission at the address to which it is directed). If mailed, such notice shall be deemed adequately delivered when deposited in the United States mails so addressed, with postage thereon prepaid, at least five (5) days before such meeting. If by telegram, such notice shall be deemed adequately delivered when the telegram is delivered to the telegraph company at least twenty-four (24) hours before such meeting. If by facsimile transmission or other electronic transmission, such notice shall be transmitted at least twenty-four (24) hours before such meeting. If by telephone, the notice shall be given at least twelve (12) hours prior to the time set for the meeting. Neither the business to be transacted at, nor the purpose of, any regular or special meeting of the Board of Directors need be specified in the notice of such meeting, except for amendments to these Bylaws as provided under Section 8.1 of Article VIII hereof. A meeting may be held at any time without notice if all the directors are present (except as otherwise provided by law) or if those not present waive notice of the meeting in writing, either before or after such meeting.

3.8 **Quorum**. At all meetings of the Board of Directors a majority of the directors shall constitute a quorum for the transaction of business and any act of a majority of the directors present at any meeting at which there is a quorum shall be an act of the Board of Directors, except as may be otherwise specifically provided by statute or by the certificate of incorporation. If a quorum is not present at any meeting of the Board of Directors, the directors present thereat may adjourn the meeting from time to time, without notice other than announcement at the meeting, until a quorum shall be present.

3.9 **Action Without a Meeting**. Unless otherwise restricted by the certificate of incorporation or these bylaws, any action required or permitted to be taken at any meeting of the Board of Directors or of any committee thereof may be taken without a meeting if all members of the Board of Directors or committee, as the case may be, consent thereto in writing or by electronic transmission, and the writing, writings, electronic transmission or transmissions are filed with the minutes of proceedings of the Board of Directors or committee.

3.10 **Telephonic Meetings**. Unless otherwise restricted by the certificate of incorporation or these bylaws, members of the Board of Directors or any committee designated by the Board of Directors may participate in a meeting of the Board of Directors or any committee, by means of conference telephone or other means of communication by which all persons participating in the meeting can hear each other, and such participation shall constitute presence in person at the meeting.

3.11 **Committees**. The Board of Directors may designate one or more committees, each committee to consist of one or more of the directors of the corporation. The Board of Directors may designate one or more directors as alternate members of any committee, who may replace any absent or disqualified member at any meeting of the committee.

In the absence or disqualification of a member of a committee, the member or members thereof present at any meeting and not disqualified from voting, whether or not he or she or they constitute a quorum, may unanimously appoint another member of the Board of Directors to act at the meeting in the place of any such absent or disqualified member.

Any such committee, to the extent provided in the resolution of the Board of Directors, shall have and may exercise all the powers and authority of the Board of Directors in the management of the business and affairs of the corporation, and may authorize the seal of the corporation to be affixed to all papers which may require it, but no such committee shall have the power or authority in reference to the following matters: (i) approving or adopting, or recommending to the stockholders, any action or matter expressly required by the DGCL to be submitted to stockholders for approval or (ii) adopting, amending or repealing any provision of these bylaws.

3.12 **Minutes of Meetings**. Each committee shall keep regular minutes of its meetings and report the same to the Board of Directors when required.

3.13 **Compensation of Directors**. Unless otherwise restricted by the certificate of incorporation or these bylaws, the Board of Directors shall have the authority to fix the compensation of directors. The directors may be paid their expenses, if any, of attendance at each

meeting of the Board of Directors and may be paid a fixed sum for attendance at each meeting of the Board of Directors or a stated salary as director. No such payment shall preclude any director from serving the corporation in any other capacity and receiving compensation therefor. Members of special or standing committees may be allowed like compensation for attending committee meetings.

3.14 **Removal of Directors**. Unless otherwise provided by the certificate of incorporation or these bylaws, any director or the entire Board of Directors may be removed, with or without cause, by the holders of a majority of shares entitled to vote at an election of directors.

ARTICLE IV
NOTICES

4.1 **Notice**. Unless otherwise provided in these bylaws, whenever, under the provisions of the statutes or of the certificate of incorporation or of these bylaws, notice is required to be given to any director or stockholder, it shall not be construed to mean personal notice, but such notice may be given in writing, by mail, addressed to such director or stockholder, at his or her address as it appears on the records of the corporation, with postage thereon prepaid, and such notice shall be deemed to be given at the time when the same shall be deposited in the United States mail. Notice to directors may also be given by telegram.

4.2 **Waiver of Notice**. Whenever any notice is required to be given under the provisions of the statutes or of the certificate of incorporation or of these bylaws, a waiver thereof in writing, signed by the person or persons entitled to said notice, whether before or after the time stated therein, shall be deemed equivalent thereto.

4.3 **Electronic Notice**.

(a) *Electronic Transmission*. Without limiting the manner by which notice otherwise may be given effectively to stockholders and directors, any notice to stockholders or directors given by the corporation under any provision of the DGCL, the certificate of incorporation or these bylaws shall be effective if given by a form of electronic transmission consented to by the stockholder or director to whom the notice is given. Any such consent shall be revocable by the stockholder or director by written notice to the corporation. Any such consent shall be deemed revoked if (1) the corporation is unable to deliver by electronic transmission two consecutive notices given by the corporation in accordance with such consent and (2) such inability becomes known to the secretary or an assistant secretary of the corporation or to the transfer agent, or other person responsible for the giving of notice; provided, however, the inadvertent failure to treat such inability as a revocation shall not invalidate any meeting or other action.

(b) *Effective Date of Notice*. Notice given pursuant to subsection (a) of this section shall be deemed given: (1) if by facsimile telecommunication, when directed to a number at which the stockholder or director has consented to receive notice; (2) if by electronic mail, when directed to an electronic mail address at which the stockholder or director has consented to receive notice; (3) if by a posting on an electronic network together with separate notice to the stockholder or director of such specific posting, upon the later of (i) such posting and (ii) the giving of such separate notice; and (4) if by any other form of electronic transmission, when directed to

the stockholder or director. An affidavit of the secretary or an assistant secretary or of the transfer agent or other agent of the corporation that the notice has been given by a form of electronic transmission shall, in the absence of fraud, be prima facie evidence of the facts stated therein.

(c) *Form of Electronic Transmission*. For purposes of these bylaws, "electronic transmission" means any form of communication, not directly involving the physical transmission of paper, that creates a record that may be retained, retrieved, and reviewed by a recipient thereof, and that may be directly reproduced in paper form by such a recipient through an automated process.

ARTICLE V
OFFICERS

5.1 **Required and Permitted Officers**. The officers of the corporation shall be chosen by the Board of Directors and shall be a Chief Executive Officer, president, treasurer and a secretary. The Board of Directors may elect from among its members a Chairman of the Board and a Vice-Chairman of the Board. The Board of Directors may also choose one or more vice-presidents, assistant secretaries and assistant treasurers. Any number of offices may be held by the same person, unless the certificate of incorporation or these bylaws otherwise provide.

5.2 **Appointment of Required Officers**. The Board of Directors at its first meeting after each annual meeting of stockholders shall choose a Chief Executive Officer, a president, a treasurer, and a secretary and may choose vice-presidents.

5.3 **Appointment of Permitted Officers**. The Board of Directors may appoint such other officers and agents as it shall deem necessary who shall hold their offices for such terms and shall exercise such powers and perform such duties as shall be determined from time to time by the Board of Directors.

5.4 **Officer Compensation**. The salaries of all officers and agents of the corporation shall be fixed by the Board of Directors.

5.5 **Term of Office; Vacancies**. The officers of the corporation shall hold office until their successors are chosen and qualify. Any officer elected or appointed by the Board of Directors may be removed at any time by the affirmative vote of a majority of the Board of Directors. Any vacancy occurring in any office of the corporation shall be filled by the Board of Directors.

THE CHAIRMAN OF THE BOARD

5.6 **Chairman Presides**. Unless the Board of Directors appoints a Chairman of the Board, the Chief Executive Officer shall be the Chairman of the Board, so long as the Chief Executive Officer is a director of the corporation. The Chairman of the Board shall preside at all meetings of the Board of Directors and of the stockholders at which he or she shall be present. He or she shall have and may exercise such powers as are, from time to time, assigned to him or her by the Board of Directors and as may be provided by law.

5.7 **Absence of Chairman**. In the absence of the Chairman of the Board, the Vice-Chairman of the Board, if any, shall preside at all meetings of the Board of Directors and of the stockholders at which he or she shall be present. He or she shall have and may exercise such powers as are, from time to time, assigned to him or her by the Board of Directors and as may be provided by law.

THE CHIEF EXECUTIVE OFFICER

5.8 **Powers of Chief Executive Officer**. The Chief Executive Officer shall have general and active management of the business of the corporation and shall see that all orders and resolutions of the Board of Directors are carried into effect.

5.9 **Chief Executive Officer's Signature Authority**. The Chief Executive Officer shall execute bonds, mortgages and other contracts requiring a seal, under the seal of the corporation, except where required or permitted by law to be otherwise signed and executed and except where the signing and execution thereof shall be expressly delegated by the Board of Directors to some other officer or agent of the corporation. The Chief Executive Officer may sign certificates for shares of stock of the corporation.

5.10 **Absence of Chief Executive Officer**. In the absence of the Chief Executive Officer, the president shall perform the duties of the Chief Executive Officer, and when so acting, shall have all the powers of and be subject to all the restrictions upon the Chief Executive Officer.

THE PRESIDENT AND VICE-PRESIDENTS

5.11 **Powers of President**. The president of the corporation shall have such powers as required by law and shall perform such other duties and have such other powers as the Board of Directors may from time to time prescribe.

5.12 **Absence of President**. If a president has not been appointed, or has resigned or been terminated without replacement, the Chief Executive Officer shall be the president of the corporation. In the absence of the Chief Executive Officer and president, the vice-president, if any, (or in the event there be more than one vice-president, the vice-presidents in the order designated by the directors, or in the absence of any designation, then in the order of their election) shall perform the duties of the president, and when so acting, shall have all the powers of and be subject to all the restrictions upon the president. The vice-presidents shall perform such other duties and have such other powers as the Board of Directors may from time to time prescribe.

THE SECRETARY AND ASSISTANT SECRETARY

5.13 **Duties of Secretary**. The secretary shall attend all meetings of the Board of Directors and all meetings of the stockholders and record all the proceedings of the meetings of the corporation and of the Board of Directors in a book to be kept for that purpose and shall perform like duties for the standing committees when required. He or she shall give, or cause to be given, notice of all meetings of the stockholders and special meetings of the Board of Directors, and shall perform such other duties as may be prescribed by the Board of Directors or Chief Executive Officer, under whose supervision he or she shall be. He or she shall have custody of the corporate seal of the corporation and he or she, or an assistant secretary, shall have authority to affix the same to any instrument requiring it and when so affixed, it may be attested by his or her signature or by the signature of such assistant secretary. The Board of Directors may give general authority to any other officer to affix the seal of the corporation and to attest the affixing by his or her signature.

5.14 **Duties of Assistant Secretary**. The assistant secretary, or if there be more than one, the assistant secretaries in the order determined by the Board of Directors (or if there be no such determination, then in the order of their election) shall, in the absence of the secretary or in the event of his or her inability or refusal to act, perform the duties and exercise the powers of the secretary and shall perform such other duties and have such other powers as the Board of Directors may from time to time prescribe.

THE TREASURER AND ASSISTANT TREASURERS

5.15 **Duties of Treasurer**. The treasurer shall have the custody of the corporate funds and securities and shall keep full and accurate accounts of receipts and disbursements in books belonging to the corporation and shall deposit all moneys and other valuable effects in the name and to the credit of the corporation in such depositories as may be designated by the Board of Directors.

5.16 **Disbursements and Financial Reports**. He or she shall disburse the funds of the corporation as may be ordered by the Board of Directors, taking proper vouchers for such disbursements, and shall render to the Chief Executive Officer and the Board of Directors, at its regular meetings or when the Board of Directors so requires, an account of all his or her transactions as treasurer and of the financial condition of the corporation.

5.17 **Treasurer's Bond**. If required by the Board of Directors, the treasurer shall give the corporation a bond (which shall be renewed every six years) in such sum and with such surety or sureties as shall be satisfactory to the Board of Directors for the faithful performance of the duties of his or her office and for the restoration to the corporation, in case of his or her death, resignation, retirement or removal from office, of all books, papers, vouchers, money and other property of whatever kind in his or her possession or under his or her control belonging to the corporation.

5.18 **Duties of Assistant Treasurer**. The assistant treasurer, or if there shall be more than one, the assistant treasurers in the order determined by the Board of Directors (or if there be no such determination, then in the order of their election) shall, in the absence of the

treasurer or in the event of the treasurer's inability or refusal to act, perform the duties and exercise the powers of the treasurer and shall perform such other duties and have such other powers as the Board of Directors may from time to time prescribe.

ARTICLE VI
CERTIFICATE OF STOCK

6.1 **Stock Certificates**. Every holder of stock in the corporation shall be entitled to have a certificate, signed by or in the name of the corporation by the Chief Executive Officer, or the president or a vice-president, and the treasurer or an assistant treasurer, or the secretary or an assistant secretary of the corporation, certifying the number of shares owned by him or her in the corporation.

Certificates may be issued for partly paid shares and in such case upon the face or back of the certificates issued to represent any such partly paid shares, the total amount of the consideration to be paid therefor, and the amount paid thereon shall be specified.

If the corporation shall be authorized to issue more than one class of stock or more than one series of any class, the powers, designations, preferences and relative participating, optional or other special rights of each class of stock or series thereof and the qualification, limitations or restrictions of such preferences and/or rights shall be set forth in full or summarized on the face or back of the certificate which the corporation shall issue to represent such class or series of stock, provided that, except as otherwise provided in Section 202 of the DGCL, in lieu of the foregoing requirements, there may be set forth on the face or back of the certificate which the corporation shall issue to represent such class or series of stock, a statement that the corporation will furnish without charge to each stockholder who so requests the powers, designations, preferences and relative participating, optional or other special rights of each class of stock or series thereof and the qualifications, limitations or restrictions of such preferences and/or rights.

6.2 **Facsimile Signatures**. Any or all of the signatures on the certificate may be facsimile. In the event that any officer, transfer agent or registrar who has signed or whose facsimile signature has been placed upon a certificate shall have ceased to be such officer, transfer agent or registrar before such certificate is issued, the certificate may be issued by the corporation with the same effect as if such officer, transfer agent or registrar were still acting as such at the date of issue.

6.3 **Lost Certificates**. The Board of Directors may direct a new certificate or certificates to be issued in place of any certificate or certificates theretofore issued by the corporation alleged to have been lost, stolen or destroyed upon the making of an affidavit of that fact by the person claiming the certificate to be lost, stolen or destroyed. When authorizing such issuance of a new certificate or certificates, the Board of Directors may, in its discretion and as a condition precedent to the issuance, require the owner of such lost, stolen or destroyed certificate or certificates, or his or her legal representative, to advertise the same in such manner as it shall require and/or to give the corporation a bond in such sum as it may direct as indemnity against any claim that may be made against the corporation with respect to the certificate alleged to have been lost, stolen or destroyed.

6.4 **Transfer of Stock**. Upon surrender to the corporation or the transfer agent of the corporation of a certificate for shares duly endorsed or accompanied by proper evidence of succession, assignation or authority to transfer, it shall be the duty of the corporation to issue a new certificate to the person entitled thereto, cancel the old certificate and record the transaction upon its books.

6.5 **Fixing a Record Date**. In order that the corporation may determine the stockholders entitled to notice of or to vote at any meeting of stockholders or any adjournment thereof, or to express consent to corporate action in writing without a meeting, or entitled to receive payment of any dividend or other distribution or allotment of any rights, or entitled to exercise any rights in respect of any change, conversion or exchange of stock or for the purpose of any other lawful action, the Board of Directors may fix a record date which shall not be more than sixty (60) nor less than ten (10) days before the date of such meeting, nor more than sixty (60) days prior to any other action. A determination of stockholders of record entitled to notice of or to vote at a meeting of stockholders shall apply to any adjournment of the meeting; provided, however, that the Board of Directors may fix a new record date for the adjourned meeting.

6.6 **Registered Stockholders**. The corporation shall be entitled to recognize the exclusive right of a person registered on its books as the owner of shares to receive dividends, to vote as such owner, to hold liable for calls and assessments a person registered on its books as the owner of shares and shall not be bound to recognize any equitable or other claim to or interest in such share or shares on the part of any other person, whether or not it shall have express or other notice thereof, except as otherwise provided by the laws of Delaware.

ARTICLE VII
GENERAL PROVISIONS

7.1 **Dividends**. Dividends upon the capital stock of the corporation, if any, subject to the provisions of the certificate of incorporation, may be declared by the Board of Directors at any regular or special meeting, pursuant to law. Dividends may be paid in cash, in property or in shares of the capital stock, subject to the provisions of the certificate of incorporation.

7.2 **Reserve for Dividends**. Before payment of any dividend, there may be set aside out of any funds of the corporation available for dividends such sum or sums as the directors from time to time, in their sole discretion, think proper as a reserve or reserves to meet contingencies, or for equalizing dividends, or for repairing or maintaining any property of the corporation, or for such other purposes as the directors think conducive to the interests of the corporation, and the directors may modify or abolish any such reserve in the manner in which it was created.

7.3 **Checks**. All checks or demands for money and notes of the corporation shall be signed by such officer or officers or such other person or persons as the Board of Directors may from time to time designate.

7.4 **Fiscal Year**. The fiscal year of the corporation shall be fixed by resolution of the Board of Directors.

7.5 **Corporate Seal**. The Board of Directors may adopt a corporate seal having inscribed thereon the name of the corporation, the year of its organization and the words "Corporate Seal, Delaware." The seal may be used by causing it or a facsimile thereof to be impressed or affixed or otherwise reproduced.

7.6 **Indemnification**. The corporation shall, to the fullest extent authorized under the laws of the State of Delaware, as those laws may be amended and supplemented from time to time, indemnify any director made, or threatened to be made, a party to an action or proceeding, whether criminal, civil, administrative or investigative, by reason of being a director of the corporation or a predecessor corporation or a director or officer of another corporation, if such person served in such position at the request of the corporation; provided, however, that the corporation shall indemnify any such director or officer in connection with a proceeding initiated by such director or officer only if such proceeding was authorized by the Board of Directors of the corporation. The indemnification provided for in this Section 7.6 shall: (i) not be deemed exclusive of any other rights to which those indemnified may be entitled under these bylaws, agreement or vote of stockholders or disinterested directors or otherwise, both as to action in their official capacities and as to action in another capacity while holding such office, (ii) continue as to a person who has ceased to be a director, and (iii) inure to the benefit of the heirs, executors and administrators of a person who has ceased to be a director. The corporation's obligation to provide indemnification under this Section 7.6 shall be offset to the extent of any other source of indemnification or any otherwise applicable insurance coverage under a policy maintained by the corporation or any other person.

Expenses incurred by a director of the corporation in defending a civil or criminal action, suit or proceeding by reason of the fact that he or she is or was a director of the corporation (or was serving at the corporation's request as a director or officer of another corporation) shall be paid by the corporation in advance of the final disposition of such action, suit or proceeding upon receipt of an undertaking by or on behalf of such director to repay such amount if it shall ultimately be determined that he or she is not entitled to be indemnified by the corporation as authorized by relevant sections of the DGCL. Notwithstanding the foregoing, the corporation shall not be required to advance such expenses to an agent who is a party to an action, suit or proceeding brought by the corporation and approved by a majority of the Board of Directors of the corporation that alleges willful misappropriation of corporate assets by such agent, disclosure of confidential information in violation of such agent's fiduciary or contractual obligations to the corporation or any other willful and deliberate breach in bad faith of such agent's duty to the corporation or its stockholders.

The foregoing provisions of this Section 7.6 shall be deemed to be a contract between the corporation and each director who serves in such capacity at any time while this bylaw is in effect, and any repeal or modification thereof shall not affect any rights or obligations then existing with respect to any state of facts then or theretofore existing or any action, suit or proceeding theretofore or thereafter brought based in whole or in part upon any such state of facts.

The Board of Directors in its sole discretion shall have power on behalf of the corporation to indemnify any person, other than a director, made a party to any action, suit or proceeding by reason of the fact that he or she, his or her testator or intestate, is or was an officer or employee of the corporation.

To assure indemnification under this Section 7.6 of all directors, officers and employees who are determined by the corporation or otherwise to be or to have been "fiduciaries" of any employee benefit plan of the corporation that may exist from time to time, Section 145 of the DGCL shall, for the purposes of this Section 7.6, be interpreted as follows: an "other enterprise" shall be deemed to include such an employee benefit plan, including without limitation, any plan of the corporation that is governed by the Act of Congress entitled "Employee Retirement Income Security Act of 1974," as amended from time to time; the corporation shall be deemed to have requested a person to serve the corporation for purposes of Section 145 of the DGCL, as administrator of an employee benefit plan where the performance by such person of his or her duties to the corporation also imposes duties on, or otherwise involves services by, such person to the plan or participants or beneficiaries of the plan; excise taxes assessed on a person with respect to an employee benefit plan pursuant to such Act of Congress shall be deemed "fines."

CERTIFICATE OF INCORPORATION GOVERNS

7.7 **Conflicts with Certificate of Incorporation**. In the event of any conflict between the provisions of the corporation's certificate of incorporation and these bylaws, the provisions of the certificate of incorporation shall govern.

ARTICLE VIII
AMENDMENTS

8.1 These bylaws may be altered, amended or repealed, or new bylaws may be adopted by the stockholders or by the Board of Directors, when such power is conferred upon the Board of Directors by the certificate of incorporation at any regular meeting of the stockholders or of the Board of Directors or at any special meeting of the stockholders or of the Board of Directors if notice of such alteration, amendment, repeal or adoption of new bylaws be contained in the notice of such special meeting. If the power to adopt, amend or repeal bylaws is conferred upon the Board of Directors by the certificate of incorporation, it shall not divest or limit the power of the stockholders to adopt, amend or repeal bylaws.

ARTICLE IX
LOANS TO OFFICERS

9.1 The corporation may lend money to, or guarantee any obligation of or otherwise assist any officer or other employee of the corporation or of its subsidiaries, including any officer or employee who is a director of the corporation or its subsidiaries, whenever, in the judgment of the Board of Directors, such loan, guarantee or assistance may reasonably be expected to benefit the corporation. The loan, guarantee or other assistance may be with or without interest and may be unsecured or secured in such manner as the Board of Directors shall approve, including, without limitation, a pledge of shares of stock of the corporation. Nothing in these bylaws shall be deemed to deny, limit or restrict the powers of guaranty or warranty of the corporation at common law or under any statute.

CERTIFICATE OF SECRETARY OF

SINGULAR GENOMICS SYSTEMS, INC.

The undersigned, Drew Spaventa, hereby certifies that he is the duly elected and acting Secretary of SINGULAR GENOMICS SYSTEMS, INC., a Delaware corporation (the "Corporation"), and that the Bylaws attached hereto constitute the Bylaws of said Corporation as duly adopted by Action by Written Consent in Lieu of Organizational Meeting by the Directors on June 7, 2016.

IN WITNESS WHEREOF, the undersigned has hereunto subscribed his name this 7th day of June, 2016.

/s/ Andrew Spaventa

Andrew Spaventa, Secretary

SINGULAR GENOMICS SYSTEMS, INC.

AMENDED AND RESTATED
INVESTORS' RIGHTS AGREEMENT

June 27, 2019

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AMENDED AND RESTATED INVESTORS' RIGHTS AGREEMENT

This AMENDED AND RESTATED INVESTORS' RIGHTS AGREEMENT (the "Agreement") is made as June 27, 2019, by and among Singular Genomics Systems, Inc., a Delaware corporation (the "Company"), the investors listed on Schedule A hereto, each of which is herein referred to as an "Investor" and collectively as the "Investors", and each of the stockholders listed on Schedule B hereto, each of whom is herein referred to as a "Common Holder" and collectively as the "Common Holders".

RECITALS

WHEREAS, certain of the Investors (the "Existing Investors") hold shares of the Company's Series Seed Preferred Stock, par value $0.0001 per share (the "Series Seed Preferred Stock") and/or Series A Preferred Stock, par value $0.0001 per share (the "Series A Preferred Stock"), and possess registration rights, information rights, rights of first offer and other rights pursuant to that certain Amended and Restated Investors' Rights Agreement dated as of June 20, 2017, by and among the Company, such Existing Investors and the Common Holders (the "Prior Agreement");

WHEREAS, the Prior Agreement may be amended, and any provision therein waived, as set forth herein with the consent of the Company and the holders of at least 65% of the Registrable Securities (as such term is defined in the Prior Agreement);

WHEREAS, the requisite parties desire to amend and restate the Prior Agreement and to accept the rights created pursuant hereto in lieu of the rights granted to them under the Prior Agreement;

WHEREAS, the Company and certain Investors (the "New Investors") are parties to that certain Series B Preferred Stock Purchase Agreement of even date herewith (the "Purchase Agreement"); and

WHEREAS, in order to induce the New Investors to purchase Series B Preferred Stock, par value $0.0001 per share (the "Series B Preferred Stock" and, together with the Series Seed Preferred Stock and the Series A Preferred Stock, the "Preferred Stock"), and invest funds in the Company pursuant to the Purchase Agreement, the New Investors, the undersigned Existing Investors, and the Company hereby agree that this Agreement shall govern the rights of the Investors to cause the Company to register shares of Common Stock, par value $0.0001 per share (the "Common Stock"), issued or issuable to them and certain other matters as set forth herein.

NOW, THEREFORE, in consideration of the mutual promises and covenants set forth herein, the Company and the undersigned Existing Investors hereby agree that the Prior Agreement is superseded and replaced in its entirety by this Agreement, and the parties hereto further agree as follow:

1. Definitions. For purposes of this Agreement:

(a) The term "Act" means the Securities Act of 1933, as amended.

(b) The term "Affiliate" means, with respect to any specified Person, any other Person who or which, directly or indirectly, controls, is controlled by, or is under common control with such specified Person, including without limitation any stockholder, partner, officer, director, member or employee of such Person and any venture capital fund now or hereafter existing that is controlled by or under common control with one or more general partners or managing members of, or shares the same management company or advisory company with, such Person.

(c) The term "Board" means the Company's Board of Directors, as constituted from time to time.

(d) The term "Form S-3" means such form under the Act as in effect on the date hereof or any registration form under the Act subsequently adopted by the SEC that permits inclusion or incorporation of substantial information by reference to other documents filed by the Company with the SEC.

(e) The term "Free Writing Prospectus" means a free-writing prospectus, as defined in Rule 405.

(f) The term "Holder" means any Person owning or having the right to acquire Registrable Securities or any assignee thereof in accordance with Section 2.10 of this Agreement; provided, however, that the Common Holders shall not be deemed to be Holders for purposes of Sections 2.1, 2.3, 2.11 and 4.7.

(g) The term "Initial Offering" means the Company's first firm commitment underwritten public offering of its Common Stock under the Act.

(h) The term "1934 Act" means the Securities Exchange Act of 1934, as amended.

(i) The term "Person" shall mean any individual, corporation, partnership, trust, limited liability company, association or other entity.

(j) The terms "register," "registered," and "registration" refer to a registration effected by preparing and filing a registration statement or similar document in compliance with the Act, and the declaration or ordering of effectiveness of such registration statement or document.

(k) The term "Registrable Securities" means (i) the Common Stock issuable or issued upon conversion of the Preferred Stock, (ii) Common Stock held by the Investors, (iii) Common Stock held by the Common Holders; provided, however, that such shares of Common Stock held by the Common Holders shall not be deemed Registrable Securities for the purposes of Sections 2.1, 2.3, 2.11, 3.1, 3.2, 3.4 and 4.7 and (iv) any Common Stock of the Company issued as (or issuable upon the conversion or exercise of any warrant, right or other security that is issued as) a dividend or other distribution with respect to, or in exchange for, or in replacement of, the shares referenced in (i), (ii) and (iii) above, excluding in all cases, however, any

Registrable Securities sold by a Person in a transaction in which his rights under Section 2 of this Agreement are not assigned. In addition, the number of shares of Registrable Securities outstanding shall equal the aggregate of the number of shares of Common Stock outstanding that are, and the number of shares of Common Stock issuable pursuant to then exercisable or convertible securities that are, Registrable Securities.

(l) The term "Restated Certificate" shall mean the Company's Restated Certificate of Incorporation, as amended and/or restated from time to time.

(m) The term "Rule 144" shall mean Rule 144 under the Act.

(n) The term "Rule 144(b)(1)(i)" shall mean subsection (b)(1)(i) of Rule 144 under the Act as it applies to Persons who have held shares for more than one (1) year.

(o) The term "Rule 405" shall mean Rule 405 under the Act.

(p) The term "SEC" shall mean the Securities and Exchange Commission.

2. Registration Rights. The Company covenants and agrees as follows:

2.1 Request for Registration.

(a) Subject to the conditions of this Section 2.1, if the Company shall receive at any time after the earlier of (i) three (3) years following the date hereof or (ii) the six (6) month anniversary of the effective date of the Initial Offering, a written request from the Holders of at least thirty five percent (35%) of the Registrable Securities then outstanding (for purposes of this Section 2.1, the "Initiating Holders") that the Company file a registration statement under the Act covering the registration of Registrable Securities with an anticipated aggregate offering price of at least $10,000,000, then the Company shall, within twenty (20) days of the receipt thereof, give written notice of such request to all Holders, and subject to the limitations of this Section 2.1, use its commercially reasonable efforts to effect, as soon as practicable but in any event within sixty (60) days, the registration under the Act of all Registrable Securities that the Holders request to be registered in a written request received by the Company within twenty (20) days of the mailing of the Company's notice pursuant to this Section 2.1(a).

(b) If the Initiating Holders intend to distribute the Registrable Securities covered by their request by means of an underwriting, they shall so advise the Company as a part of their request made pursuant to this Section 2.1, and the Company shall include such information in the written notice referred to in Section 2.1(a). In such event the right of any Holder to include its Registrable Securities in such registration shall be conditioned upon such Holder's participation in such underwriting and the inclusion of such Holder's Registrable Securities in the underwriting (unless otherwise mutually agreed by a majority in interest of the Initiating Holders and such Holder) to the extent provided herein. All Holders proposing to distribute their securities through such underwriting shall enter into an underwriting agreement in customary form with the underwriter or underwriters selected for such underwriting by the Company (which underwriter or underwriters shall be reasonably acceptable to those Initiating Holders holding a majority of the Registrable Securities then held by all Initiating

Holders). Notwithstanding any other provision of this Section 2.1, if the underwriter advises the Company that marketing factors require a limitation on the number of securities underwritten (including Registrable Securities), then the Company shall so advise all Holders of Registrable Securities that would otherwise be underwritten pursuant hereto, and the number of shares that may be included in the underwriting shall be allocated to the Holders of such Registrable Securities pro rata based on the number of Registrable Securities held by all such Holders (including the Initiating Holders). In no event shall any Registrable Securities be excluded from such underwriting unless all other securities are first excluded. Any Registrable Securities excluded or withdrawn from such underwriting shall be withdrawn from the registration.

(c) Notwithstanding the foregoing, the Company shall not be required to effect a registration pursuant to this Section 2.1:

(i) in any particular jurisdiction in which the Company would be required to execute a general consent to service of process in effecting such registration, unless the Company is already subject to service in such jurisdiction and except as may be required under the Act; or

(ii) after the Company has effected two (2) registrations pursuant to this Section 2.1, and such registrations have been declared or ordered effective; or

(iii) during the period starting with the date sixty (60) days prior to the Company's good faith estimate of the date of the filing of and ending on a date one hundred eighty (180) days following the effective date of a Company-initiated registration subject to Section 2.2 below, provided that the Company is actively employing in good faith its commercially reasonable efforts to cause such registration statement to become effective; or

(iv) if the Initiating Holders propose to dispose of Registrable Securities that may be registered on Form S-3 pursuant to Section 2.3 hereof; or

(v) if the Company shall furnish to Holders requesting a registration statement pursuant to this Section 2.1 a certificate signed by the Company's Chief Executive Officer or Chairman of the Board stating that in the good faith judgment of the Board, it would be seriously detrimental to the Company and its stockholders for such registration statement to be effected at such time, in which event the Company shall have the right to defer such filing for a period of not more than ninety (90) days after receipt of the request of the Initiating Holders; provided that such right shall be exercised by the Company not more than once in any twelve (12) month period; and provided further that the Company shall not register any securities for the account of itself or any other stockholder during such ninety (90) day period (other than a registration relating solely to the sale of securities of participants in a Company stock plan, a registration relating to a corporate reorganization or transaction under Rule 145 of the Act, a registration on any form that does not include substantially the same information as would be required to be included in a registration statement covering the sale of the Registrable Securities, or a registration in which the only Common Stock being registered is Common Stock issuable upon conversion of debt securities that are also being registered).

(d) For purposes of Subsection 2.1(c)(ii), a registration shall be counted as "effected" only if (i) all Registrable Securities requested to be included pursuant to Subsection 2.1(a) are registered or (ii) such registration request is withdrawn at the request of the Holders or a majority of the Registrable Securities to be registered (other than as a result of a material adverse change in the condition, business or prospects of the Company from that known to the Holders at the time of their request of the registration).

2.2 Company Registration.

(a) If (but without any obligation to do so) the Company proposes to register (including for this purpose a registration effected by the Company for stockholders other than the Holders) any of its stock or other securities under the Act in connection with the public offering of such securities (other than (i) a registration relating to a demand pursuant to Section 2.1 of this Agreement or (ii) a registration relating solely to the sale of securities of participants in a Company stock plan, a registration relating to a corporate reorganization or transaction under Rule 145 of the Act, a registration on any form that does not include substantially the same information as would be required to be included in a registration statement covering the sale of the Registrable Securities, or a registration in which the only Common Stock being registered is Common Stock issuable upon conversion of debt securities that are also being registered), the Company shall, at such time, promptly give each Holder written notice of such registration. Upon the written request of each Holder given within twenty (20) days after mailing of such notice by the Company in accordance with Section 4.5 of this Agreement, the Company shall, subject to the provisions of Section 2.2(c) of this Agreement, use its commercially reasonable efforts to cause to be registered under the Act all of the Registrable Securities that each such Holder requests to be registered.

(b) Right to Terminate Registration. The Company shall have the right to terminate or withdraw any registration initiated by it under this Section 2.2 prior to the effectiveness of such registration whether or not any Holder has elected to include securities in such registration. The expenses of such withdrawn registration shall be borne by the Company in accordance with Section 2.6 hereof.

(c) Underwriting Requirements. In connection with any offering involving an underwriting of shares of the Company's capital stock, the Company shall not be required under this Section 2.2 to include any of the Holders' securities in such underwriting unless they accept the terms of the underwriting as agreed upon between the Company and the underwriters selected by the Company (or by other Persons entitled to select the underwriters) and enter into an underwriting agreement in customary form with such underwriters, and then only in such quantity as the underwriters determine in their sole discretion will not jeopardize the success of the offering by the Company. If the total amount of securities, including Registrable Securities, requested by stockholders to be included in such offering exceeds the amount of securities sold other than by the Company that the underwriters determine in their sole discretion is compatible with the success of the offering, then the Company shall be required to include in the offering only that number of such securities, including Registrable Securities, that the underwriters determine in their sole discretion will not jeopardize the success of the offering. In the event that the underwriters determine that less than all of the Registrable Securities requested to be registered can be included in such offering, then the Registrable Securities that are included

in such offering shall be apportioned pro rata among the selling Holders based on the number of Registrable Securities held by all selling Holders or in such other proportions as shall mutually be agreed to by all such selling Holders. Notwithstanding the foregoing, in no event shall (i) any Registrable Securities be excluded from such offering unless all other stockholders' securities have been first excluded from the offering, (ii) the amount of securities of the selling Holders included in the offering be reduced below thirty percent (30%) of the total amount of securities included in such offering, unless such offering is the Initial Offering, in which case the selling Holders may be excluded if the underwriters make the determination described above and no other stockholder's securities are included in such offering or (iii) any securities held by a Common Holder be included in such offering if any Registrable Securities held by any Holder other than a Common Holder (and that such Holder has requested to be registered) are excluded from such offering. For purposes of the preceding sentence concerning apportionment, for any selling stockholder that is a Holder of Registrable Securities and that is a venture capital fund, partnership or corporation, the affiliated venture capital funds, partners, members, retired partners and stockholders of such Holder, or the estates and family members of any such partners, members and retired partners and any trusts for the benefit of any of the foregoing Persons shall be deemed to be a single "selling Holder," and any pro rata reduction with respect to such "selling Holder" shall be based upon the aggregate amount of Registrable Securities owned by all such related entities and individuals.

2.3 Form S-3 Registration. In case the Company shall receive from the Holders of at least twenty percent (20%) of the Registrable Securities (for purposes of this Section 2.3, the "S-3 Initiating Holders") a written request or requests that the Company effect a registration on Form S-3 and any related qualification or compliance with respect to all or a part of the Registrable Securities owned by such Holder or Holders, the Company shall:

(a) promptly give written notice of the proposed registration, and any related qualification or compliance, to all other Holders; and

(b) use its commercially reasonable efforts to effect, as soon as practicable, such registration and all such qualifications and compliances as may be so requested and as would permit or facilitate the sale and distribution of all or such portion of such Holders' Registrable Securities as are specified in such request, together with all or such portion of the Registrable Securities of any other Holders joining in such request as are specified in a written request given within fifteen (15) days after receipt of such written notice from the Company; provided, however, that the Company shall not be obligated to effect any such registration, qualification or compliance, pursuant to this Section 2.3:

(i) if Form S-3 is not available for such offering by the Holders;

(ii) if the Holders, together with the holders of any other securities of the Company entitled to inclusion in such registration, propose to sell Registrable Securities and such other securities (if any) at an aggregate price to the public of less than $1,000,000;

(iii) if the Company shall furnish to all Holders requesting a registration statement pursuant to this Section 2.3 a certificate signed by the Company's Chief Executive Officer or Chairman of the Board stating that in the good faith judgment of the Board, it would be seriously detrimental to the Company and its stockholders for such registration statement to be effected at such time, in which event the Company shall have the right to defer such filing for a period of not more than ninety (90) days after receipt of the request of the S-3 Initiating Holders; provided that such right shall be exercised by the Company not more than once in any twelve (12) month period; and provided further that the Company shall not register any securities for the account of itself or any other stockholder during such ninety (90) day period (other than a registration relating solely to the sale of securities of participants in a Company stock plan, a registration relating to a corporate reorganization or transaction under Rule 145 of the Act, a registration on any form that does not include substantially the same information as would be required to be included in a registration statement covering the sale of the Registrable Securities, or a registration in which the only Common Stock being registered is Common Stock issuable upon conversion of debt securities that are also being registered);

(iv) if the Company has, within the twelve (12) month period preceding the date of such request, already effected two (2) registrations on Form S-3 pursuant to this Section 2.3;

(v) in any particular jurisdiction in which the Company would be required to qualify to do business or to execute a general consent to service of process in effecting such registration, qualification or compliance;

(vi) if the Company, within thirty (30) days of receipt of the request of such S-3 Initiating Holders, gives notice of its bona fide intention to effect the filing of a registration statement with the SEC within one hundred twenty (120) days of receipt of such request (other than a registration effected solely to qualify an employee benefit plan or to effect a business combination pursuant to Rule 145), provided that the Company is actively employing in good faith its commercially reasonable efforts to cause such registration statement to become effective; or

(vii) during the period starting with the date thirty (30) days prior to the Company's good faith estimate of the date of the filing of and ending on a date ninety (90) days following the effective date of a Company-initiated registration subject to Section 2.2 of this Agreement, provided that the Company is actively employing in good faith its commercially reasonable efforts to cause such registration statement to become effective.

(c) If the S-3 Initiating Holders intend to distribute the Registrable Securities covered by their request by means of an underwriting, they shall so advise the Company as a part of their request made pursuant to this Section 2.3 and the Company shall include such information in the written notice referred to in Section 2.3(a). The provisions of Section 2.1(b) of this Agreement shall be applicable to such request (with the substitution of Section 2.3 for references to Section 2.1).

(d) Subject to the foregoing, the Company shall file a registration statement covering the Registrable Securities and other securities so requested to be registered as soon as practicable after receipt of the request or requests of the S-3 Initiating Holders. Registrations effected pursuant to this Section 2.3 shall not be counted as requests for registration effected pursuant to Section 2.1 of this Agreement.

2.4 Obligations of the Company. Whenever required under this Section 2 to effect the registration of any Registrable Securities, the Company shall, as expeditiously as reasonably possible:

(a) prepare and file with the SEC a registration statement with respect to such Registrable Securities and use its commercially reasonable efforts to cause such registration statement to become effective, and, upon the request of the Holders of a majority of the Registrable Securities registered thereunder, keep such registration statement effective for a period of up to one hundred twenty (120) days or, if earlier, until the distribution contemplated in the Registration Statement has been completed;

(b) prepare and file with the SEC such amendments and supplements to such registration statement and the prospectus used in connection with such registration statement as may be necessary to comply with the provisions of the Act with respect to the disposition of all securities covered by such registration statement;

(c) furnish to the Holders such number of copies of a prospectus, including a preliminary prospectus and any Free Writing Prospectus, in conformity with the requirements of the Act, and such other documents as they may reasonably request in order to facilitate the disposition of Registrable Securities owned by them;

(d) use its commercially reasonable efforts to register and qualify the securities covered by such registration statement under such other securities or Blue Sky laws of such jurisdictions as shall be reasonably requested by the Holders, provided that the Company shall not be required in connection therewith or as a condition thereto to qualify to do business or to file a general consent to service of process in any such states or jurisdictions;

(e) in the event of any underwritten public offering, enter into and perform its obligations under an underwriting agreement, in usual and customary form, with the managing underwriter of such offering;

(f) notify each Holder of Registrable Securities covered by such registration statement at any time when a prospectus or Free Writing Prospectus (to the extent prepared by or on behalf of the Company) relating thereto is required to be delivered under the Act of the happening of any event as a result of which the prospectus included in such registration statement, as then in effect, includes an untrue statement of a material fact or omits to state a material fact required to be stated therein or necessary to make the statements therein not misleading in the light of the circumstances then existing, and, at the request of any such Holder, the Company will, as soon as reasonably practicable, file and furnish to all such Holders a supplement or amendment to such prospectus or Free Writing Prospectus (to the extent prepared by or on behalf of the Company) so that, as thereafter delivered to the purchasers of such Registrable Securities, such prospectus will not contain an untrue statement of a material fact or omit to state any fact necessary to make the statements therein not misleading in light of the circumstances under which they were made;

(g) cause all such Registrable Securities registered pursuant to this Section 2 to be listed on a national exchange or trading system and on each securities exchange and trading system on which similar securities issued by the Company are then listed; and

(h) provide a transfer agent and registrar for all Registrable Securities registered pursuant to this Agreement and a CUSIP number for all such Registrable Securities, in each case not later than the effective date of such registration.

In the event of the suspension of effectiveness of any registration statement pursuant to this Section 2.4, the applicable time period during which such registration statement is to remain effective shall be extended by that number of days equal to the number of days the effectiveness of such registration statement was suspended.

2.5 Information from Holder. It shall be a condition precedent to the obligations of the Company to take any action pursuant to this Section 2 with respect to the Registrable Securities of any selling Holder that such Holder shall furnish to the Company such information regarding itself, the Registrable Securities held by it, and the intended method of disposition of such securities as shall be reasonably required to effect the registration of such Holder's Registrable Securities.

2.6 Expenses of Registration. All expenses other than underwriting discounts and commissions incurred in connection with registrations, filings or qualifications pursuant to Sections 2.1, 2.2 and 2.3 of this Agreement, including, without limitation, all registration, filing and qualification fees, printers' and accounting fees, fees and disbursements of counsel for the Company and the reasonable fees and disbursements of one counsel for the selling Holders shall be borne by the Company. Notwithstanding the foregoing, the Company shall not be required to pay for any expenses of any registration proceeding begun pursuant to Section 2.1 or Section 2.3 of this Agreement if the registration request is subsequently withdrawn at the request of the Holders of a majority of the Registrable Securities to be registered (in which case all participating Holders shall bear such expenses pro rata based upon the number of Registrable Securities that were to be included in the withdrawn registration) unless, in the case of a registration requested under Section 2.1 of this Agreement, the Holders of a majority of the Registrable Securities agree to forfeit their right to one demand registration pursuant to Section 2.1 of this Agreement and; provided, however, that if at the time of such withdrawal, the Holders have learned of a material adverse change in the condition, business or prospects of the Company from that known to the Holders at the time of their request and have withdrawn the request with reasonable promptness following disclosure by the Company of such material adverse change, then the Holders shall not be required to pay any of such expenses and shall retain their rights pursuant to Sections 2.1 and 2.3 of this Agreement.

2.7 Delay of Registration. No Holder shall have any right to obtain or seek an injunction restraining or otherwise delaying any such registration as the result of any controversy that might arise with respect to the interpretation or implementation of this Section 2.

2.8 Indemnification. In the event any Registrable Securities are included in a registration statement under this Section 2:

(a) To the extent permitted by law, the Company will indemnify and hold harmless each Holder, the partners, members, officers, directors and stockholders of each Holder, legal counsel and accountants for each Holder, any underwriter (as defined in the Act) for such Holder and each Person, if any, who controls such Holder or underwriter within the meaning of the Act or the 1934 Act, against any losses, claims, damages or liabilities (joint or several) to which they may become subject under the Act, the 1934 Act, any state securities laws or any rule or regulation promulgated under the Act, the 1934 Act or any state securities laws, insofar as such losses, claims, damages, or liabilities (or actions or proceedings, whether commenced or threatened, in respect thereof) arise out of or are based upon any of the following statements, omissions or violations (collectively, a "Violation"): (i) any untrue or alleged untrue statement of a material fact contained in such registration statement, including any preliminary prospectus, final prospectus, or Free Writing Prospectus contained therein or any amendments or supplements thereto, any issuer information (as defined in Rule 433 of the Act) filed or required to be filed pursuant to Rule 433(d) under the Act or any other document incident to such registration prepared by or on behalf of the Company or used or referred to by the Company, (ii) the omission or alleged omission of a material fact required to be stated in such registration statement, or necessary to make the statements therein not misleading or (iii) any violation or alleged violation by the Company of the Act, the 1934 Act, any state securities laws or any rule or regulation promulgated under the Act, the 1934 Act or any state securities laws, and the Company will reimburse each such Holder, underwriter, controlling Person or other aforementioned Person for any legal or other expenses reasonably incurred by them in connection with investigating or defending any such loss, claim, damage, liability, action or proceeding as such expenses are incurred; provided, however, that the indemnity agreement contained in this Section 2.8(a) shall not apply to amounts paid in settlement of any such loss, claim, damage, liability, action or proceeding if such settlement is effected without the consent of the Company (which consent shall not be unreasonably withheld), nor shall the Company be liable in any such case for any such loss, claim, damage, liability, action or proceeding to the extent that it arises out of or is based upon a Violation that occurs in reliance upon, and in conformity with, written information furnished expressly for use in connection with such registration by any such Holder, underwriter, controlling Person or other aforementioned Person.

(b) To the extent permitted by law, each selling Holder, severally and not jointly, will indemnify and hold harmless the Company, each of its directors, each of its officers who has signed the registration statement, each Person, if any, who controls the Company within the meaning of the Act, legal counsel and accountants for the Company, any underwriter, any other Holder selling securities in such registration statement and any controlling Person of any such underwriter or other Holder, against any losses, claims, damages or liabilities (joint or several) to which any of the foregoing Persons may become subject, under the Act, the 1934 Act, any state securities laws or any rule or regulation promulgated under the Act, the 1934 Act or any state securities laws, insofar as such losses, claims, damages or liabilities (or actions or proceedings, whether commenced or threatened, in respect thereof) arise out of or are based upon any Violation, in each case to the extent (and only to the extent) that such Violation occurs in reliance upon and in conformity with written information furnished by such Holder expressly for use in connection with such registration; and each such Holder will reimburse any Person

intended to be indemnified pursuant to this Section 2.8(b) for any legal or other expenses reasonably incurred by such Person in connection with investigating or defending any such loss, claim, damage, liability, action or proceeding as such expenses are incurred; provided, however, that the indemnity agreement contained in this Section 2.8(b) shall not apply to amounts paid in settlement of any such loss, claim, damage, liability, action or proceeding if such settlement is effected without the consent of the Holder (which consent shall not be unreasonably withheld), and provided that in no event shall any indemnity under this Section 2.8(b), when combined with the amounts paid or payable by such Holder pursuant to Section 2.8(d), exceed the net proceeds from the offering received by such Holder.

(c) Promptly after receipt by an indemnified party under this Section 2.8 of notice of the commencement of any action or proceeding (including any governmental action or proceeding) for which a party may be entitled to indemnification, such indemnified party will, if a claim in respect thereof is to be made against any indemnifying party under this Section 2.8, deliver to the indemnifying party a written notice of the commencement thereof and the indemnifying party shall have the right to participate in and, to the extent the indemnifying party so desires, jointly with any other indemnifying party similarly noticed, to assume the defense thereof with counsel mutually satisfactory to the parties; provided, however, that an indemnified party (together with all other indemnified parties that may be represented without conflict by one counsel) shall have the right to retain one (1) separate counsel, with the fees and expenses to be paid by the indemnifying party, if representation of such indemnified party by the counsel retained by the indemnifying party would be inappropriate due to actual or potential differing interests between such indemnified party and any other party represented by such counsel in such proceeding. The failure to deliver written notice to the indemnifying party within a reasonable time of the commencement of any such action or proceeding, if prejudicial to its ability to defend such action or proceeding, shall relieve such indemnifying party of any liability to the indemnified party under this Section 2.8 to the extent of such prejudice, but the omission to so deliver written notice to the indemnifying party will not relieve such indemnifying party of any liability that it may have to any indemnified party otherwise than under this Section 2.8.

(d) If the indemnification provided for in this Section 2.8 is held by a court of competent jurisdiction to be unavailable to an indemnified party with respect to any loss, liability, claim, damage or expense referred to herein, then the indemnifying party, in lieu of indemnifying such indemnified party hereunder, shall contribute to the amount paid or payable by such indemnified party as a result of such loss, liability, claim, damage or expense in such proportion as is appropriate to reflect the relative fault of the indemnifying party on the one hand and the indemnified party on the other hand in connection with the statements or omissions that resulted in such loss, liability, claim, damage or expense, as well as any other relevant equitable considerations; provided, however, that (i) no contribution by any Holder, when combined with any amounts paid by such Holder pursuant to Section 2.8(b), shall exceed the net proceeds from the offering received by such Holder and (ii) no Person guilty of fraudulent misrepresentation (within the meaning of Section 11(f) of the Act) will be entitled to contribution from any Person who was not guilty of such fraudulent misrepresentation; and provided further that in no event shall a Holder's liability pursuant to this Section 2.8(d), when combined with the amounts paid or payable by such Holder pursuant to Section 2.8(b), exceed the proceeds from the offering received by such Holder (net of any expenses paid by such Holder). The relative fault of the

indemnifying party and the indemnified party shall be determined by reference to, among other things, whether the untrue or alleged untrue statement of a material fact or the omission or alleged omission to state a material fact relates to information supplied by the indemnifying party or by the indemnified party and the parties' relative intent, knowledge, access to information and opportunity to correct or prevent such statement or omission.

(e) Notwithstanding the foregoing, to the extent that the provisions on indemnification and contribution contained in the underwriting agreement entered into in connection with the underwritten public offering are in conflict with the foregoing provisions, the provisions in the underwriting agreement shall control.

(f) The obligations of the Company and Holders under this Section 2.8 shall survive the completion of any offering of Registrable Securities in a registration statement under this Section 2 unless superseded by an underwriting agreement.

2.9 Reports Under the 1934 Act. With a view to making available to the Holders the benefits of Rule 144 and any other rule or regulation of the SEC that may at any time permit a Holder to sell securities of the Company to the public without registration or pursuant to a registration on Form S-3, the Company agrees to:

(a) make and keep public information available, as those terms are understood and defined in Rule 144, at all times after the effective date of the Initial Offering;

(b) file with the SEC in a timely manner all reports and other documents required of the Company under the Act and the 1934 Act; and

(c) furnish to any Holder, so long as the Holder owns any Registrable Securities, forthwith upon request (i) a written statement by the Company that it has complied with the reporting requirements of Rule 144 (at any time after ninety (90) days after the effective date of the first registration statement filed by the Company), the Act and the 1934 Act (at any time after it has become subject to such reporting requirements), or that it qualifies as a registrant whose securities may be resold pursuant to Form S-3 (at any time after it so qualifies), (ii) a copy of the most recent annual or quarterly report of the Company and such other reports and documents so filed by the Company and (iii) such other information as may be reasonably requested to avail any Holder of any rule or regulation of the SEC that permits the selling of any such securities without registration or pursuant to such form.

2.10 Assignment of Registration Rights. The rights to cause the Company to register Registrable Securities pursuant to this Section 2 may be assigned (but only with all related obligations) by a Holder to a transferee or assignee of such securities that (a) is another Holder, (b) is an Affiliate, subsidiary, parent, partner, limited partner, retired partner, member or stockholder of a Holder, (c) is a Holder's family member or trust for the benefit of an individual Holder or any of such Holder's family members, or (d) acquires at least thirty percent (30%) of the Registrable Securities originally held by the transferring Holder, provided: (i) the Company is, within a reasonable time after such transfer, furnished with written notice of the name and address of such transferee or assignee and the securities with respect to which such registration rights are being assigned; (ii) such transferee or assignee agrees in writing to be bound by and subject to the terms and conditions of this Agreement, including, without limitation, the provisions of Section 2.12 of this Agreement; and (iii) such assignment shall be effective only if immediately following such transfer the further disposition of such securities by the transferee or assignee is restricted under the Act.

2.11 Limitations on Subsequent Registration Rights. From and after the date of this Agreement, the Company shall not, without the prior written consent of the Holders holding a majority of the Registrable Securities then held by all Holders including the holders of a majority of the then outstanding Series B Preferred Stock, enter into any agreement with any holder or prospective holder of any securities of the Company that would allow such holder or prospective holder (a) to include any of such securities in any registration filed under Section 2.1, Section 2.2 or Section 2.3 of this Agreement, unless under the terms of such agreement, such holder or prospective holder may include such securities in any such registration only to the extent that the inclusion of such securities will not reduce the amount of the Registrable Securities of the Holders that are included or (b) to demand registration of their securities.

2.12 "Market Stand-Off" Agreement.

(a) Each Holder hereby agrees that it will not, without the prior written consent of the managing underwriter, during the period commencing on the date of the final prospectus relating to the Initial Offering and ending on the date specified by the Company and the managing underwriter (such period not to exceed one hundred eighty (180) days) (i) lend, offer, pledge, sell, contract to sell, sell any option or contract to purchase, purchase any option or contract to sell, grant any option, right or warrant to purchase, or otherwise transfer or dispose of, directly or indirectly, any shares of Common Stock or any securities convertible into or exercisable or exchangeable for Common Stock held immediately prior to the date of the final prospectus relating to the Initial Offering, or (ii) enter into any swap or other arrangement that transfers to another, in whole or in part, any of the economic consequences of ownership of the Common Stock, whether any such transaction described in clause (i) or (ii) above is to be settled by delivery of Common Stock or other securities, in cash or otherwise. The foregoing provisions of this Section 2.12 shall apply only to the Initial Offering, shall not apply to the sale of any shares to an underwriter pursuant to an underwriting agreement, and shall only be applicable to the Holders if all officers, directors and greater than one percent (1%) stockholders of the Company enter into similar agreements. The underwriters in connection with the Initial Offering are intended third-party beneficiaries of this Section 2.12 and shall have the right, power and authority to enforce the provisions hereof as though they were a party hereto. Each Holder further agrees to execute such agreements as may be reasonably requested by the underwriters in the Initial Offering that are consistent with this Section 2.12 or that are necessary to give further effect thereto. Any discretionary waiver or termination of the restrictions of any or all of such agreements by the Company or the underwriters shall apply to all Holders subject to such agreements pro rata based on the number of shares subject to such agreements.

In order to enforce the foregoing covenant, the Company may impose stop-transfer instructions with respect to the Registrable Securities of each Holder (and the shares or securities of every other Person subject to the foregoing restriction) until the end of such period.

(b) Each Holder agrees that a legend reading substantially as follows shall be placed on all certificates or electronic certificates representing all Registrable Securities of each Holder (and the shares or securities of every other Person subject to the restriction contained in this Section 2.12):

THE SECURITIES REPRESENTED BY THIS CERTIFICATE ARE SUBJECT TO A LOCK-UP PERIOD AFTER THE EFFECTIVE DATE OF THE ISSUER'S REGISTRATION STATEMENT FILED UNDER THE ACT, AS AMENDED, AS SET FORTH IN AN AGREEMENT BETWEEN THE COMPANY AND THE ORIGINAL HOLDER OF THESE SECURITIES, A COPY OF WHICH MAY BE OBTAINED AT THE ISSUER'S PRINCIPAL OFFICE. SUCH LOCK-UP PERIOD IS BINDING ON TRANSFEREES OF THESE SHARES.

2.13 Termination of Registration Rights. No Holder shall be entitled to exercise any right provided for in this Section 2: (a) after five (5) years following the consummation of the Qualified Public Offering (as defined in the Restated Certificate), (b) as to any Holder, such earlier time after the Initial Offering at which such Holder (x) can sell all shares held by it in compliance with Rule 144(b)(1)(i) or (y) holds one percent (1%) or less of the Company's outstanding Common Stock and all Registrable Securities held by such Holder (together with any Affiliate of the Holder with whom such Holder must aggregate its sales under Rule 144) can be sold in any three (3) month period without registration in compliance with Rule 144 or (c) after the consummation of a Liquidation Event (other than an Asset Sale), as such terms are defined in the Restated Certificate.

3. Covenants of the Company.

3.1 Delivery of Financial Statements.

(a) The Company shall, upon request, deliver to each Investor (or transferee of an Investor) that holds at least 161,656 shares of Registrable Securities (as adjusted for any stock split, stock dividend, combination, or other recapitalization or reclassification effected after the date hereof) (a "Major Investor"):

(i) as soon as practicable, but in any event within 120 days after the end of each fiscal year of the Company, an income statement for such fiscal year, a balance sheet of the Company and statement of stockholders' equity as of the end of such year, and a statement of cash flows for such year, such year-end financial reports to be in reasonable detail, prepared in accordance with generally accepted accounting principles ("GAAP"), and, unless such requirement is waived by the Board including both Preferred Directors (as defined in the Restated Charter), audited and certified by independent public accountants of nationally recognized standing selected by the Company;

(ii) as soon as practicable, but in any event within forty-five (45) days after the end of each quarter of each fiscal year of the Company, an unaudited income statement and statement of cash flows for such fiscal quarter and an unaudited balance sheet (and, on request, a statement of stockholders' equity) as of the end of such fiscal quarter, all prepared in accordance with GAAP (except that such financial statements may (A) be subject to normal year-end audit adjustments and (B) not contain all notes thereto that may be required in accordance with GAAP);

(iii) as soon as practicable, but in any event within forty-five (45) days after the end of each quarter of each fiscal year of the Company, a statement showing the number of shares of each class and series of capital stock and securities convertible into or exercisable for shares of capital stock outstanding at the end of the period (including, in the case of convertible debt securities, the face amount, issue date, maturity date, interest rate, conversion discount and valuation cap to the extent applicable), the Common Stock issuable upon conversion or exercise of any outstanding securities convertible or exercisable for Common Stock and the exchange ratio or exercise price applicable thereto, and the number of shares of issued stock options and stock options not yet issued but reserved for issuance, if any, all in sufficient detail as to permit the Major Investors to calculate their respective percentage equity ownership in the Company;

(iv) within thirty (30) days of the end of each month, an unaudited income statement and statement of cash flows for such month, and an unaudited balance sheet (and, on request, statement of stockholder's equity) as of the end of such month, all prepared in accordance with GAAP (except that such financial statements may (A) be subject to normal year-end audit adjustments and (B) not contain all notes thereto that may be required in accordance with GAAP);

(v) as soon as practicable, but in any event at least thirty (30) days prior to the end of each fiscal year, a budget for the next fiscal year; and

(vi) such other information relating to the financial condition, business or corporate affairs of the Company as the Major Investor may from time to time reasonably request; provided, however, that the Company shall not be obligated under this subsection (v) to provide information that (A) is non-financial information that it deems in good faith to be a trade secret or similar confidential information or (B) the disclosure of which would adversely affect the attorney-client privilege between the Company and its counsel.

(b) Notwithstanding anything else in this Section 3.1 to the contrary, the Company may cease providing the information set forth in this Section 3.1 during the period starting with the date thirty (30) days before the Company's good-faith estimate of the date of filing of a registration statement if it reasonably concludes it must do so to comply with the SEC rules applicable to such registration statement and related offering; provided that the Company's covenants under this Section 3.1 shall be reinstated at such time as the Company is no longer actively employing its commercially reasonable efforts to cause such registration statement to become effective.

3.2 Inspection. The Company shall permit each Major Investor, at such Major Investor's expense, to visit and inspect the Company's properties, to examine its books of account and records and to discuss the Company's affairs, finances and accounts with its officers, all at such reasonable times as may be requested by the Major Investor; provided, however, that the Company shall not be obligated pursuant to this Section 3.2 to provide access to any information that (A) is non-financial information that it deems in good faith to be a trade secret or similar confidential information or (B) the disclosure of which would adversely affect the attorney-client privilege between the Company and its counsel.

3.3 Termination of Information and Inspection Covenants. The covenants set forth in Sections 3.1 and 3.2 shall terminate and be of no further force or effect upon the earlier to occur of (a) the consummation of the Company's first sale of its Common Stock or other securities pursuant to a registration statement under the Act (other than a registration statement relating either to sale of securities to employees of the Company pursuant to its stock option, stock purchase or similar plan or a SEC Rule 145 transaction), (b) when the Company first becomes subject to the periodic reporting requirements of Sections 12(g) or 15(d) of the 1934 Act, whichever event shall first occur and (c) the consummation of a Liquidation Event (other than an Asset Sale), as such terms are defined in the Restated Certificate.

3.4 Right of First Offer. Subject to the terms and conditions specified in this Section 3.4, the Company hereby grants to each Major Investor (a "ROFO Investor") a right of first offer with respect to future sales by the Company of its Shares (as hereinafter defined). For purposes of this Section 3.4, the term "ROFO Investor" includes any general partners and Affiliates of a ROFO Investor. The rights provided in this Section 3.4 may not be assigned or transferred by any ROFO Investor, except that a ROFO Investor shall be entitled to apportion the right of first offer hereby granted it among itself and its partners and Affiliates in such proportions as it deems appropriate.

Each time the Company proposes to offer any shares of, or securities convertible into or exchangeable or exercisable for any shares of, its capital stock (including, without limitation, any such shares or securities issued in connection with debt securities) ("Shares"), the Company shall first make an offering of such Shares to each ROFO Investor in accordance with the following provisions:

(a) The Company shall deliver a notice in accordance with Section 4.5 ("Notice") to the ROFO Investors stating (i) its bona fide intention to offer such Shares, (ii) the number of such Shares to be offered and (iii) the price and terms upon which it proposes to offer such Shares.

(b) By written notification received by the Company within twenty (20) calendar days after the giving of Notice, each ROFO Investor may elect to purchase, at the price and on the terms specified in the Notice, up to that portion of such Shares that equals the proportion that the number of shares of Registrable Securities issued and held by such ROFO Investor (assuming full conversion and exercise of all convertible and exercisable securities then outstanding) bears to the total number of shares of Common Stock of the Company then outstanding (assuming full conversion and exercise of all convertible and exercisable securities then outstanding and excluding all shares reserved and/or available for issuance under any and all equity incentive plans to the extent such shares are not then subject to outstanding awards under such plan(s)). At the expiration of such twenty (20) calendar day period, the Company shall promptly, in writing, notify each ROFO Investor that elects to purchase all the shares available to it (a "Fully Exercising Investor") of any other ROFO Investor's failure to do likewise. During the ten (10) calendar day period commencing after the Company has given such

notice to the Fully Exercising Investors, each Fully Exercising Investor may elect to purchase that portion of the Shares for which ROFO Investors were entitled to subscribe, but which were not subscribed for by the ROFO Investors, that is equal to the proportion that the number of shares of Registrable Securities issued and held by such Fully Exercising Investor bears to the total number of shares of Common Stock issued and held, or issuable upon conversion of the Preferred Stock then held, by all Fully Exercising Investors who wish to purchase some of the unsubscribed shares.

(c) If all Shares that ROFO Investors are entitled to obtain pursuant to Section 3.4(b) of this Agreement are not elected to be obtained as provided in Section 3.4(b) of this Agreement, the Company may, during the ninety (90) day period following the expiration of the period provided in Section 3.4(b) of this Agreement, offer the remaining unsubscribed portion of such Shares to any Person or Persons at a price not less than that, and upon terms no more favorable to the offeree than those, specified in the Notice. If the Company does not enter into an agreement for the sale of the Shares within such period, or if such agreement is not consummated within sixty (60) days of the execution thereof, the right provided hereunder shall be deemed to be revived and such Shares shall not be offered unless first reoffered to the ROFO Investors in accordance herewith.

(d) The right of first offer in this Section 3.4 shall not be applicable to Excluded Issuances (as defined in the Restated Certificate) or the sale of Series B Preferred Stock pursuant to the Purchase Agreement, as it may be amended from time to time in accordance with its terms. In addition to the foregoing, the right of first offer in this Section 3.4 shall not be applicable with respect to any ROFO Investor in any subsequent offering of Shares if (A) at the time of such offering, the ROFO Investor is not an "accredited investor," as that term is then defined in Rule 501(a) of the Act and (B) such offering of Shares is otherwise being offered only to accredited investors.

(e) The covenants set forth in this Section 3.4 shall terminate and be of no further force or effect upon the consummation of (i) the Company's Qualified Public Offering or (ii) a Liquidation Event (other than an Asset Sale), in each case, as such term is defined in the Restated Certificate.

3.5 Directors' and Officers' Insurance. The Company shall use its commercially reasonable efforts to maintain, from financially sound and reputable insurers, directors and officers liability insurance in an amount and on terms and conditions satisfactory to the Board, including each Preferred Director, until such time as the Board (including each Preferred Director) determines that such insurance should be discontinued.

3.6 Board Matters. The Board shall meet at least quarterly in accordance with an agreed-upon schedule. The Company shall reimburse non-employee directors for all reasonable documented expenses incurred in attending each meeting of the Board or any committee thereof. All non-employee directors shall be compensated uniformly for service on the Board.

3.7 Proprietary Information and Inventions Agreements. The Company shall require all employees and consultants to execute and deliver a Proprietary Information and Inventions Agreement in substantially the form approved by the Board or a consulting agreement containing substantially similar proprietary rights assignment and confidentiality provisions.

3.8 Employee Agreements. Unless approved by the Board including at least one (1) Preferred Director, all future employees of the Company who shall purchase, or receive options to purchase, shares of Common Stock following the date hereof shall be required to execute stock purchase or option agreements providing for (a) vesting of shares over a four (4) year period with the first twenty five percent (25%) of such shares vesting following twelve (12) months of continued employment or services, and the remaining shares vesting in equal monthly installments over the following thirty six (36) months thereafter and (b) a one hundred and eighty (180)-day lockup period (plus an additional period of up to eighteen (18) days) in connection with the Initial Public Offering. The Company shall retain a right of first refusal on transfers until the Initial Public Offering and the right to repurchase unvested shares at cost.

3.9 Qualified Small Business Stock. The Company shall use commercially reasonable efforts to cause the shares of Preferred Stock, as well as any shares into which such shares are converted, within the meaning of Section 1202(f) of the Internal Revenue Code (the "Code"), to constitute "qualified small business stock" as defined in Section 1202(c) of the Code; provided, however, that such requirement shall not be applicable if the Board determines, in its good-faith business judgment, that such qualification is inconsistent with the best interests of the Company. The Company shall submit to its stockholders (including the Investors) and to the Internal Revenue Service any reports that may be required under Section 1202(d)(1)(C) of the Code and the regulations promulgated thereunder. In addition, within twenty (20) business days after any Investor's written request therefor, the Company shall, at its option, either (i) deliver to such Investor a written statement indicating whether (and what portion of) such Investor's interest in the Company constitutes "qualified small business stock" as defined in Section 1202(c) of the Code or (ii) deliver to such Investor such factual information in the Company's possession as is reasonably necessary to enable such Investor to determine whether (and what portion of) such Investor's interest in the Company constitutes "qualified small business stock" as defined in Section 1202(c) of the Code.

3.10 Right to Conduct Activities. The Company hereby acknowledges and agrees that certain of the investors, together with their Affiliates constituting private equity or venture capital funds, including, but not limited to Deerfield Private Design Fund IV, L.P. and its Affiliates, (collectively, the "Investor Funds"), directly or indirectly, from time to time may (a) make or hold investments in, or trade in securities of, companies that are or may become engaged in activities that are competitive with the Company's business, as it is currently conducted or as it may be conducted in the future, and (b) engage in other activities which may be deemed competitive with the Company's business, as it is currently conducted or as it may be conducted in the future. The Company hereby agrees that the Investor Funds shall not be liable to the Company for any claim arising out of, or based upon any such activities, including, without limitation (A) an investment by any of the Investor Funds, directly or indirectly, in any entity competitive with the Company or (B) any other actions taken by any of the Investor Funds, or any partner, officer or other representative thereof, to assist any such competitive company, whether or not such action has a detrimental effect on the Company; provided, however, that the foregoing shall not relieve any director or officer of the Company from any liability associated with his or her fiduciary duties to the Company. The Company

acknowledges that the Investor Funds are in the business of private equity investing and therefore review the business plans and related proprietary information of many enterprises, including enterprises which may have products or services which compete directly or indirectly with those of the Company. Nothing in this Agreement shall preclude, create an obligation or duty, or in any way restrict any of the Investor Funds from evaluating or purchasing securities, including publicly traded securities, of a particular enterprise, or investing or participating in any particular enterprise, whether or not such enterprise has products or services which compete with those of the Company.

3.11 Termination of Certain Covenants. The covenants set forth in Sections 3.6, 3.7 and 3.8 shall terminate and be of no further force or effect upon the consummation of (a) the Company's Qualified Public Offering or (b) a Liquidation Event (other than an Asset Sale), in each case, as such terms are defined in the Restated Certificate.

4. Miscellaneous.

4.1 Successors and Assigns. Except as otherwise provided herein, the terms and conditions of this Agreement shall inure to the benefit of and be binding upon the respective successors and assigns of the parties (including transferees of any shares of Registrable Securities). Nothing in this Agreement, express or implied, is intended to confer upon any party other than the parties hereto or their respective successors and assigns any rights, remedies, obligations or liabilities under or by reason of this Agreement, except as expressly provided in this Agreement.

4.2 Governing Law. This Agreement shall be governed by and construed under the laws of the State of California as applied to agreements among California residents entered into and to be performed entirely within California.

4.3 Counterparts; Electronic Signature. This Agreement may be executed by electronic signature and in two (2) or more counterparts, each of which shall be deemed an original, but all of which together shall constitute one (1) and the same instrument. Counterparts may be delivered by facsimile, electronic mail (including pdf) or other transmission method and any counterpart so delivered shall be deemed to have been duly and validly delivered and be valid and effective for all purposes.

4.4 Titles and Subtitles. The titles and subtitles used in this Agreement are used for convenience only and are not to be considered in construing or interpreting this Agreement.

4.5 Notices. All notices and other communications given or made pursuant hereto shall be in writing and shall be deemed effectively given upon the earlier to occur of actual receipt or: (a) upon personal delivery to the party to be notified, (b) when sent by confirmed electronic mail or facsimile if sent during normal business hours of the recipient; if not, then on the next business day, (c) five (5) days after having been sent by registered or certified mail, return receipt requested, postage prepaid, or (d) one (1) day after deposit with a nationally recognized overnight courier, specifying next day delivery, with written verification of receipt. All notices and other communications shall be sent to the Company and to the other parties at the addresses set forth on the signature pages hereto, as applicable (or at such other addresses as shall be specified by notice given in accordance with this Section 4.5).

4.6 Expenses. If any action at law or in equity is necessary to enforce or interpret the terms of this Agreement, the prevailing party shall be entitled to reasonable attorneys' fees, costs and necessary disbursements in addition to any other relief to which such party may be entitled.

4.7 Entire Agreement; Amendments. This Agreement (including the Exhibits hereto, if any) constitutes the full and entire understanding and agreement among the parties with regard to the subjects hereof and thereof. Any term of this Agreement (other than Section 3.1, Section 3.2, Section 3.3 and Section 3.4) may be amended and the observance of any term of this Agreement may be waived (either generally or in a particular instance and either retroactively or prospectively) only with the written consent of the Company and the Investors holding a majority of the Registrable Securities, including a majority of the shares of Series B Preferred Stock then held by the Investors; provided, however, that in the event that such amendment or waiver adversely affects the obligations or rights of the Common Holders in a different manner than the other Holders, such amendment or waiver shall also require the written consent of the Common Holders holding a majority of the shares of Common Stock then held by all Common Holders. The provisions of Section 3.1, Section 3.2 and Section 3.3 may be amended or waived (either generally or in a particular instance and either retroactively or prospectively) only with the written consent of the Company and the Major Investors holding a majority of the Registrable Securities then held by all of the Major Investors. The provisions of Section 3.4 may be amended or waived (either generally or in a particular instance and either retroactively or prospectively) only with the written consent of the Company and the ROFO Investors holding a majority of the Registrable Securities then held by all of the ROFO Investors including holders of a majority of the Series B Preferred Stock held by the ROFO Investors; provided, however, that in the event of any such amendment or waiver of the provisions of Section 3.4, a ROFO Investor who has, as of the date of any applicable offering, previously invested at least $12,000,000 in the Company's Preferred Stock, shall continue to be entitled to its right of first offer under Section 3.4 to the extent, and in the same relative percentage of such ROFO Investor's pro rata rights (but for such amendment or waiver), that any other ROFO Investor or holder of Preferred Stock or any of their respective affiliates is permitted to participate in such offering. Any amendment or waiver effected in accordance with this paragraph shall be binding upon each holder of any Registrable Securities, each future holder of all such Registrable Securities and the Company.

4.8 Severability. Whenever possible, each provision of this Agreement shall be interpreted in such manner as to be effective and valid under applicable law, but if any provision of this Agreement shall be held to be prohibited by or invalid under applicable law, such provision shall be ineffective only to the extent of such prohibition or invalidity, without invalidating the remainder of such provision or the remaining provisions of this Agreement.

4.9 Aggregation of Stock. All shares of Registrable Securities held or acquired by affiliated entities (including affiliated venture capital funds or venture capital funds under common investment management) or Persons shall be aggregated together for the purpose of determining the availability of any rights under this Agreement.

4.10 Additional Investors. Notwithstanding Section 4.7, no consent shall be necessary to add additional Investors as signatories to this Agreement and to update Schedule A accordingly, provided that such Investors have (a) purchased Series B Preferred Stock, whether pursuant to the Purchase Agreement or otherwise and (b) executed and delivered an additional counterpart signature page to this Agreement.

4.11 Effect on Prior Agreement. The Prior Agreement is hereby amended and restated in its entirety and shall be of no further force or effect.

[*Remainder of page intentionally left blank*]

IN WITNESS WHEREOF, the parties have executed this Amended and Restated Investors' Rights Agreement as of the date first written above.

COMPANY:

SINGULAR GENOMICS SYSTEMS, INC.

By: /s/ Andrew Spaventa
Andrew Spaventa, Chief Executive Officer

Address:

IN WITNESS WHEREOF, the parties have executed this Amended and Restated Investors' Rights Agreement as of the date first written above.

COMMON HOLDERS:

/s/ Andrew Spaventa
Andrew Spaventa

Address:

Email:

/s/ Eli Glezer
Eli Glezer

Address:

Email:

/s/ David Barker
David Barker

Address:

Email:

IN WITNESS WHEREOF, the parties have executed this Amended and Restated Investors' Rights Agreement as of the date first written above.

INVESTOR:

DEERFIELD PRIVATE DESIGN FUND IV, L.P.

By: Deerfield Mgmt IV, L.P. General Partner

By: J.E. Flynn Capital IV, LLC General Partner

By: /s/ David J. Clark
Name: David J. Clark
Title: Authorized Signatory

c/o Deerfield Management Company, L.P.

and

c/o Deerfield Management Company, L.P.

With a required copy to:

McDermott Will & Emery LLP

IN WITNESS WHEREOF, the parties have executed this Amended and Restated Investors' Rights Agreement as of the date first written above.

INVESTOR:

DOMAIN PARTNERS IX, L.P.
By: One Palmer Square Associates IX, L.L.C.,
its General Partner

By: /s/ Lisa A. Kraeutler
Lisa A. Kraeutler
Attorney-in-Fact

Address:

Email:

IN WITNESS WHEREOF, the parties have executed this Amended and Restated Investors' Rights Agreement as of the date first written above.

INVESTOR:

ARCH VENTURE FUND IX, L.P.

By: ARCH Venture Partners IX, L.P.
Its: General Partner
By: ARCH Venture Partners IX, LLC
Its: General Partner

By: /s/ Mark McDonnell
Name: Mark McDonnell
Its: Managing Director

Address:

Email:

IN WITNESS WHEREOF, the parties have executed this Amended and Restated Investors' Rights Agreement as of the date first written above.

INVESTOR:

LC HealthCare Fund I, L.P.

By: /s/ Authorized Signatory

Name: Authorized Signatory

Title: Authorized Signatory

Address:

Email:

IN WITNESS WHEREOF, the parties have executed this Amended and Restated Investors' Rights Agreement as of the date first written above.

INVESTOR:

Axon Ventures X, LLC

By: Axon Managers, LLC
its Manager

By: /s/ Afif Khoury
Afif Khoury, Manager

Address:
Email:

IN WITNESS WHEREOF, the parties have executed this Amended and Restated Investors' Rights Agreement as of the date first written above.

INVESTOR:

Athena Ventures I LLC

By: /s/ David Mayhew

Name: David Mayhew

Title: Authorized Signatory

Address:
Copy:

IN WITNESS WHEREOF, the parties have executed this Amended and Restated Investors' Rights Agreement as of the date first written above.

INVESTOR:

Giant Plan Limited

By: /s/ Authorized Signatory

Name: Authorized Signatory

Title: Authorized Signatory

Address:
Email:

IN WITNESS WHEREOF, the parties have executed this Amended and Restated Investors' Rights Agreement as of the date first written above.

INVESTOR:

Hui Veggie LLC

By: /s/ Graham Monroe

Name: Graham Monroe

Title: Member

Address:

Email:

IN WITNESS WHEREOF, the parties have executed this Amended and Restated Investors' Rights Agreement as of the date first written above.

INVESTOR:

Mitchell and Elizabeth Siegler 1998 Family Trust

By: /s/ Mitchell Siegler

Name: Mitchell Siegler

Title: Trustee

Address:

Email:

IN WITNESS WHEREOF, the parties have executed this Amended and Restated Investors' Rights Agreement as of the date first written above.

INVESTOR:

Section 32 Fund 2, LP
By: Section 32 GP 2, LLC, its general partner

By: /s/ Jennifer L. Kercher
Name: Jennifer L. Kercher
Title: Chief Operating Officer

Address:
Email:

Attn: Chief Operating Officer

IN WITNESS WHEREOF, the parties have executed this Amended and Restated Investors' Rights Agreement as of the date first written above.

INVESTOR:

Broad Street Principal Investments, L.L.C.

By: /s/ Nick Giovanni
Name: Nick Giovanni
Title: Vice President

Address:
Email:

IN WITNESS WHEREOF, the parties have executed this Amended and Restated Investors' Rights Agreement as of the date first written above.

INVESTOR:

COATUE EARLY STAGE FUND LP
By: Coatue Early Stage GP LLC, its General Partner

Signature: /s/ Zachary Feingold

Print Name: Zachary Feingold

Title: Authorized Signatory

Address:
Email:

IN WITNESS WHEREOF, the parties have executed this Amended and Restated Investors' Rights Agreement as of the date first written above.

INVESTOR:

COATUE CT 50 LLC

Signature: /s/ Zachary Feingold

Print Name: Zachary Feingold

Title: Authorized Signatory

Address:
Email:

IN WITNESS WHEREOF, the parties have executed this Amended and Restated Investors' Rights Agreement as of the date first written above.

INVESTOR:

F-PRIME CAPITAL PARTNERS LIFE SCIENCES FUND VI LP

By: F-Prime Capital Partners Life Sciences Advisors Fund VI LP, its general partner

By: Impresa Holdings LLC, its general partner

By: Impresa Management LLC, its managing member

By: /s/ Mary Bevelock Pendergast
Name: Mary Bevelock Pendergast
Title: Vice President

Address:
Attn: Mary Bevelock Pendergast

Email:

SCHEDULE A

SCHEDULE OF INVESTORS

Domain Partners IX, L.P.
ARCH Venture Fund IX, L.P.
LC Healthcare Fund I, L.P.
Mitchell and Elizabeth Siegler 1998 Family Trust
Mark V. Bowles and Kathleen A. Bowles Living Trust Dated July 9, 2004
Kevin Quinn
Tao Jiang
Hui Veggie LLC
Marc Lipschitz Profit Sharing Plan
Axon Ventures X, LLC
Athena Ventures I LLC
GV 2017, L.P.
Alexandria Venture Investments, LLC
Sea Lane Ventures, LLC
Giant Plan Limited
G&H Partners
The Pellini Family Trust
Jiang Zhao Family Trust
The Brian Ahern Separate Property Trust
Thomas and Judith Tullie Family Trust
Deerfield Private Design Fund IV, L.P.
Broad Street Principal Investments, L.L.C.
Section 32 Fund 2, LP
Coatue Early Stage Fund LP
Coatue CT 50 LLC
F-Prime Capital Partners Life Sciences Fund VI LP

SCHEDULE B

SCHEDULE OF COMMON HOLDERS

Andrew Spaventa
Eli Glezer
Jingyue Ju
David Barker

AMENDMENT TO AMENDED AND RESTATED INVESTORS' RIGHTS AGREEMENT

This Amendment To Amended And Restated Investors' Rights Agreement (the "Amendment") is made as of August 27, 2019, by and among Singular Genomics Systems, Inc., a Delaware corporation (the "Company"), and the undersigned Investors and Common Holders.

WHEREAS, the Company and the undersigned Investors and the Common Holders are parties to that certain Amended and Restated Investors' Rights Agreement, dated June 27, 2019 (the "Investors' Rights Agreement");

WHEREAS, the Investors' Rights Agreement may be amended, and any provision therein waived, as set forth herein with the consent of the Company and the holders of a majority of the Registrable Securities (as such term is defined in the Investors' Rights Agreement), including a majority of the shares of Series B Preferred Stock then held by the Investors and the undersigned parties constitute the requisite majority to amend the Investors' Rights Agreement;

WHEREAS, the parties desire to amend the Investors' Rights Agreement as set forth herein.

NOW, THEREFORE, THE PARTIES HEREBY AGREE AS FOLLOWS:

1. Definitions. Unless otherwise indicated herein, words and terms which are defined in the Investors' Rights Agreement shall have the same meaning where used herein.

2. Confidentiality. A new Section 3.11 is hereby added to the Investors' Rights Agreement (with the former Section 3.11 being renumbered to Section 3.12), which new Section 3.11 reads as follows:

"Section 3.11 Confidentiality. Each Investor agrees, severally and not jointly, that such Investor (a) will keep confidential, (b) will not disclose, divulge or use for any purpose (other than to monitor its investment in the Company, in connection with evaluating other investment opportunities in the ordinary course of business or as specifically permitted herein) and (c) will protect to the same degree as it protects its own similar confidential information any confidential information obtained from the Company pursuant to the terms of this Agreement (including, without limitation, notice of the Company's intention to file a registration statement), unless such confidential information (i) is known or becomes known to the public in general (other than as a result of a breach of this Section 3.11 by such Investor), (ii) is or has been independently developed or conceived by the Investor without use of the Company's confidential information, or (iii) is or has been made known or disclosed to the Investor by a third party without a breach of any obligation of confidentiality such third party may have to the Company; provided, however, that an Investor may disclose confidential information (A) to its attorneys, accountants, consultants and other professionals to the extent necessary or reasonably appropriate to obtain their services in connection with monitoring its investment in the Company or interpreting,

enforcing, or defending a claim against the Company, provided that such Persons are under a contractual or legal obligation to preserve the confidentiality of such information; (B) to any prospective purchaser of any Registrable Securities or other securities of the Company from such Investor (other than an operating company engaged in a business competitive with the Company), if such prospective purchaser agrees to be bound by the provisions of this Section 3.11 or other substantially similar provisions; (C) to any existing or prospective Affiliate (other than an operating company engaged in a business competitive with the Company), partner, member, stockholder or wholly owned subsidiary of such Investor in the ordinary course of business, provided that such Investor informs such Person that such information is confidential and such Person is under a contractual or legal obligation to preserve the confidentiality of such information; or (D) as may otherwise be required by law, provided that the Investor promptly notifies the Company of such disclosure (if legally permitted) and takes reasonable steps to minimize the extent of any such required disclosure (each Person contemplated by clause (A), (B) and (C), a "Permitted Disclosee"). Furthermore, nothing contained herein shall prevent any Investor or any Permitted Disclosee from (x) entering into any business, entering into any agreement with a third party, or investing in or engaging in investment discussions with any other company (whether or not competitive with the Company), provided that such Investor or Permitted Disclosee does not, except as permitted in accordance with this Section 3.11, disclose or otherwise make use of any proprietary or confidential information of the Company in connection with such activities, or (y) making any disclosures required by law, rule, regulation or court or other governmental order. Additionally, the Company understands and acknowledges that in the regular course of business each Investor and any of their respective representatives currently may be invested in, may invest in or may consider investments in companies that have issued securities that are publicly traded (each, a "Public Company"). Accordingly, the Company covenants and agrees that before providing material non-public information about a Public Company ("Public Company Information") to any Investor, the Company will use commercially reasonable efforts to provide prior written notice to the compliance personnel at such Investor, as applicable, describing such information in reasonable detail. The Company shall not disclose Public Company Information to an Investor without written authorization from the applicable compliance personnel, provided, however, that, the Company will be permitted to disclose agreements entered into with Public Companies in the ordinary course of business, such as routine customer, supplier, advertising and publishing agreements without such written authorization."

3. Continued Validity of the Investors' Rights Agreement. Except as specifically modified hereby, the Investors' Rights Agreement shall continue in full force and effect as originally constituted and is ratified and affirmed by the parties hereto.

4. Successors and Assigns. Except as otherwise provided herein, the terms and conditions of this Amendment shall inure to the benefit of and be binding upon the respective successors and assigns of the parties (including transferees of any shares of

Registrable Securities). Nothing in this Amendment, express or implied, is intended to confer upon any party other than the parties hereto or their respective successors and assigns any rights, remedies, obligations or liabilities under or by reason of this Amendment, except as expressly provided in this Amendment.

5. Governing Law. This Amendment shall be governed by and construed under the laws of the State of California as applied to agreements among California residents entered into and to be performed entirely within California.

6. Counterparts. This Amendment may be executed by electronic signature and in two (2) or more counterparts, each of which shall be deemed an original, but all of which together shall constitute one (1) and the same instrument. Counterparts may be delivered by facsimile, electronic mail (including pdf) or other transmission method and any counterpart so delivered shall be deemed to have been duly and validly delivered and be valid and effective for all purposes.

7. Titles and Subtitles. The titles and subtitles used in this Amendment are used for convenience only and are not to be considered in construing or interpreting this Amendment.

[*Remainder of Page Intentionally Left Blank*]

IN WITNESS WHEREOF, the parties have executed this Amendment as of the date first written above.

COMPANY:

SINGULAR GENOMICS SYSTEMS, INC.

By: /s/ Andrew Spaventa
Andrew Spaventa, Chief Executive Officer

Address:

IN WITNESS WHEREOF, the parties have executed this Amendment as of the date first written above.

COMMON HOLDERS:

/s/ Andrew Spaventa
Andrew Spaventa

Address:

Email:

/s/ Eli Glezer
Eli Glezer

Address:

Email:

/s/ David Barker
David Barker

Address:

Email:

IN WITNESS WHEREOF, the parties have executed this Amendment as of the date first written above.

INVESTOR:

DEERFIELD PRIVATE DESIGN FUND IV, L.P.

By: Deerfield Mgmt IV, L.P.
General Partner

By: J.E. Flynn Capital IV, LLC
General Partner

By: /s/ David J. Clark
Name: David J. Clark
Title: Authorized Signatory

C/O DEERFIELD MANAGEMENT
COMPANY, L.P.
EMAIL:

WITH A REQUIRED COPY TO:
McDermott Will & Emery LLP

IN WITNESS WHEREOF, the parties have executed this Amendment as of the date first written above.

INVESTOR:

DOMAIN PARTNERS IX, L.P.
By: One Palmer Square Associates IX, L.L.C., its General Partner

By: /s/ Lisa Kraeutler
Lisa A. Kraeutler
Attorney-in-Fact

Address:

Email:

IN WITNESS WHEREOF, the parties have executed this Amendment as of the date first written above.

INVESTOR:

LC HealthCare Fund I, L.P.

By: /s/ Authorized Signatory

Name: Authorized Signatory

Title: Authorized Signatory

Address:

Email:

IN WITNESS WHEREOF, the parties have executed this Amendment as of the date first written above.

INVESTOR:

Athena Ventures I LLC

By: /s/ David Mayhew

Name: David Mayhew

Title: Authorized Signatory

Address:
Copy:

IN WITNESS WHEREOF, the parties have executed this Amendment as of the date first written above.

INVESTOR:

ALEXANDRIA VENTURE INVESTMENTS, LLC, a Delaware limited liability company

By: ALEXANDRIA REAL ESTATE EQUITIES, INC., a Maryland corporation, managing member

By: /s/ Aaron Jacobson

Name: Aaron Jacobson

Title: SVP – Venture Counsel

Address:
Email:

IN WITNESS WHEREOF, the parties have executed this Amendment as of the date first written above.

INVESTOR:

Section 32 Fund 2, LP
By: Section 32 GP 2, LLC, its general partner

By: /s/ Jennifer Kercher
Name: Jennifer L. Kercher
Title: Chief Operating Officer

Address:
Email:

Attn: Chief Operating Officer

IN WITNESS WHEREOF, the parties have executed this Amendment as of the date first written above.

INVESTOR:

COATUE EARLY STAGE FUND LP
By: Coatue Early Stage GP LLC, its General Partner

Signature: /s/ Zachary Feingold

Print Name: Zachary Feingold

Title: Authorized Signatory

Address:
Email:

IN WITNESS WHEREOF, the parties have executed this Amendment as of the date first written above.

INVESTOR:

COATUE CT 50 LLC

Signature: /s/ Zachary Feingold

Print Name: Zachary Feingold

Title: Authorized Signatory

Address:
Email:

THIS WARRANT AND THE SHARES ISSUABLE HEREUNDER HAVE NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933, AS AMENDED (THE "**ACT**"), OR THE SECURITIES LAWS OF ANY STATE AND, EXCEPT AS SET FORTH IN SECTIONS 5.3 AND 5.4 BELOW, MAY NOT BE OFFERED, SOLD, PLEDGED OR OTHERWISE TRANSFERRED UNLESS AND UNTIL REGISTERED UNDER SAID ACT AND LAWS OR IN FORM AND SUBSTANCE SATISFACTORY TO THE COMPANY, SUCH OFFER, SALE, PLEDGE OR OTHER TRANSFER IS EXEMPT FROM SUCH REGISTRATION.

WARRANT TO PURCHASE STOCK

Company: SINGULAR GENOMICS SYSTEMS, INC.
Number of Shares: 32,289, plus all Additional Shares which Holder is entitled to purchase pursuant to Section 1.7
Type/Series of Stock: Series B Preferred
Warrant Price: $2.3228 per share
Issue Date: November 19, 2019
Expiration Date: November 19, 2029 See also Section 5.1(b).
Credit Facility: This Warrant to Purchase Stock ("**Warrant**") is issued in connection with that certain Loan and Security Agreement of even date herewith between Silicon Valley Bank and the Company (as amended, restated, supplemented or otherwise modified from time to time, the "**Loan Agreement**").

THIS WARRANT CERTIFIES THAT, for good and valuable consideration, SILICON VALLEY BANK (together with any successor or permitted assignee or transferee of this Warrant or of any shares issued upon exercise hereof, "**Holder**") is entitled to purchase the number of fully paid and non-assessable shares (the "**Shares**") of the above-stated Type/Series of Stock (the "**Class**") of the above-named company (the "**Company**") at the above-stated Warrant Price, all as set forth above and as adjusted pursuant to Section 2 of this Warrant, subject to the provisions and upon the terms and conditions set forth in this Warrant. Reference is made to Section 5.4 of this Warrant whereby Silicon Valley Bank shall transfer this Warrant to its parent company, SVB Financial Group.

SECTION 1. EXERCISE.

1.1 Method of Exercise. Holder may at any time and from time to time exercise this Warrant, in whole or in part, by delivering to the Company this Warrant together with a duly executed Notice of Exercise in substantially the form attached hereto as Appendix 1 and, unless Holder is exercising this Warrant pursuant to a cashless exercise set forth in Section 1.2, a check, wire transfer of same-day funds (to an account designated by the Company), or other form of payment acceptable to the Company for the aggregate Warrant Price for the Shares being purchased. In no event shall an original ink-signed paper copy of this Warrant be required for any exercise of a Holder's rights hereunder, nor shall this Warrant or any physical copy thereof be required to be physically surrendered at the time of any exercise hereof.

1.2 Cashless Exercise. On any exercise of this Warrant, in lieu of payment of the aggregate Warrant Price in the manner as specified in Section 1.1 above, but otherwise in accordance with the requirements of Section 1.1, Holder may elect to receive Shares equal to the value of this Warrant, or portion hereof as to which this Warrant is being exercised. Thereupon, the Company shall issue to the Holder such number of fully paid and non-assessable Shares as are computed using the following formula:

X = Y(A-B)/A

where:

X = the number of Shares to be issued to the Holder;

Y = the number of Shares with respect to which this Warrant is being exercised (inclusive of the Shares surrendered to the Company in payment of the aggregate Warrant Price);

A = the Fair Market Value (as determined pursuant to Section 1.3 below) of one Share; and

B = the Warrant Price.

1.3 Fair Market Value. If the Company's common stock is then traded or quoted on a nationally recognized securities exchange, inter-dealer quotation system or over-the-counter market (a "**Trading Market**") and the Class is common stock, the fair market value of a Share shall be the closing price or last sale price of a share of common stock reported for the Business Day immediately before the date on which Holder delivers this Warrant together with its Notice of Exercise to the Company. If the Company's common stock is then traded in a Trading Market and the Class is a series of the Company's convertible preferred stock, the fair market value of a Share shall be the closing price or last sale price of a share of the Company's common stock reported for the Business Day immediately before the date on which Holder delivers this Warrant together with its Notice of Exercise to the Company multiplied by the number of shares of the Company's common stock into which a Share is then convertible. If the Company's common stock is not traded in a Trading Market, the Board of Directors of the Company shall determine the fair market value of a Share in its reasonable good faith judgment.

1.4 Delivery of Certificate and New Warrant. Within a reasonable time after Holder exercises this Warrant in the manner set forth in Section 1.1 or 1.2 above, the Company shall deliver to Holder a certificate representing the Shares issued to Holder upon such exercise and, if this Warrant has not been fully exercised and has not expired, a new warrant of like tenor representing the Shares not so acquired.

1.5 Replacement of Warrant.

(a) Paper Original Warrant. On receipt of evidence reasonably satisfactory to the Company of the loss, theft, destruction or mutilation of this Warrant and, in the case of loss, theft or destruction, on delivery of an indemnity agreement reasonably satisfactory in form, substance and amount to the Company or, in the case of mutilation, on surrender of this Warrant to the Company for cancellation, the Company shall, within a reasonable time, execute and deliver to Holder, in lieu of this Warrant, a new warrant of like tenor and amount.

(b) Electronic Original Warrant. If at any time this Warrant is rejected by any person (including but not limited to, paying or escrow agents) or any such person fails to comply with the terms of this Warrant based on this Warrant being presented to such person as an electronic record, a printout thereof, or any signature hereto being in electronic form, the Company, shall, promptly upon Holder's request without indemnity, execute and deliver to Holder, in lieu of electronic original versions of this warrant, a new warrant of like tenor and amount in paper form with original signatures.

1.6 Treatment of Warrant Upon Acquisition of Company.

(a) Acquisition. For the purpose of this Warrant, "**Acquisition**" means any transaction or series of related transactions involving: (i) the sale, lease, exclusive license, or other disposition of all or substantially all of the assets of the Company (ii) any merger or consolidation of the Company into or with another person or entity (other than a merger or consolidation effected exclusively to change the Company's domicile), or any other corporate reorganization, in which the stockholders of the Company in their capacity as such immediately prior to such merger, consolidation or reorganization, own less than a majority of the Company's (or the surviving or successor entity's) outstanding voting power immediately after such merger, consolidation or reorganization; or (iii) any sale or other transfer by the stockholders of the Company of shares representing at least a majority of the Company's then-total outstanding combined voting power. Notwithstanding the foregoing, the consummation of a bona fide equity financing in which no existing stockholders of the Company sell shares shall not be deemed to be an Acquisition for purposes of this Warrant.

(b) Treatment of Warrant at Acquisition. In the event of an Acquisition in which the consideration to be received by the Company's stockholders consists solely of cash, solely of Marketable Securities or a combination of cash and Marketable Securities (a "**Cash/Public Acquisition**"), and the fair market value of one Share as determined in accordance with Section 1.3 above would be greater than the Warrant Price in effect on such date immediately prior to such Cash/Public Acquisition, and Holder has not exercised this Warrant pursuant to Section 1.1 above as to all Shares, then this Warrant shall automatically be deemed to be Cashless Exercised pursuant to Section 1.2 above as to all Shares effective immediately prior to and contingent upon the consummation of a Cash/Public Acquisition. In connection with such Cashless Exercise, Holder shall be deemed to have restated each of the representations and warranties in Section 4 of the Warrant as of the date thereof and the Company shall promptly notify the Holder of the number of Shares (or such other securities) issued upon exercise. In the event of a Cash/Public Acquisition where the fair market value of one Share as determined in accordance with Section 1.3 above would be less than or equal to the Warrant Price in effect immediately prior to such Cash/Public Acquisition, then this Warrant will automatically expire immediately prior to the consummation of such Cash/Public Acquisition.

(c) Upon the closing of any Acquisition other than a Cash/Public Acquisition defined above, the acquiring, surviving or successor entity shall assume the obligations of this Warrant, and this Warrant shall thereafter be exercisable for the same securities and/or other property as would have been paid for the Shares issuable upon exercise of the unexercised portion of this Warrant as if such Shares were outstanding on and as of the closing of such Acquisition, subject to further adjustment from time to time in accordance with the provisions of this Warrant.

(d) As used in this Warrant, "**Marketable Securities**" means securities meeting all of the following requirements: (i) the issuer thereof is then subject to the reporting requirements of Section 13 or Section 15(d) of the Securities Exchange Act of 1934, as amended (the "**Exchange Act**"), and is then current in its filing of all required reports and other information under the Act and the Exchange Act; (ii) the class and series of shares or other security of the issuer that would be received by Holder in connection with the Acquisition were Holder to exercise this Warrant on or prior to the closing thereof is then traded in Trading Market, and (iii) following the closing of such Acquisition, Holder would not be restricted from publicly re-selling all of the issuer's shares and/or other securities that would be received by Holder in such Acquisition were Holder to exercise or convert this Warrant in full on or prior to the closing of such Acquisition, except to the extent that any such restriction (x) arises solely under federal or state securities laws, rules or regulations, and (y) does not extend beyond six (6) months from the closing of such Acquisition. Notwithstanding the foregoing provisions of this Section 1.6(d), securities held in escrow or subject to holdback to cover indemnification related claims in connection with such Acquisition shall be deemed to be Marketable Securities if they would otherwise be Marketable Securities but for the fact that they are held in escrow or subject to holdback to cover indemnification related claims.

1.7 Additional Shares. Upon the funding of each Growth Capital Advance under the Second Tranche and the Third Tranche (as such terms are defined in the Loan Agreement), the Company shall be deemed to have automatically granted to Holder, in addition to the number of Shares which this Warrant can otherwise be exercised for by Holder, the right to purchase that number of additional Shares, rounded upward to the nearest whole number, equal to (a) three percent (3.0%) of the principal amount of such Growth Capital Advance, divided by (b) the Warrant Price (such additional shares being called the "**Additional Shares**").

1.8 "**Pay to Play**". In the event that any "**pay to play**" terms or conditions (i.e. terms or conditions that require a holder of the Company's Preferred Stock to purchase securities in a future round of equity financing or else lose the benefit of such rights, preferences and/or privileges such as anti-dilution protection applicable to the shares of Preferred Stock issuable upon the exercise of this Warrant or have such shares of Preferred Stock automatically convert to common stock or convert to another class and series of the Company's capital stock), are triggered after the date hereof (a "**Pay to Play Financing**"), then in such event, this Warrant, only to the extent of Shares not previously exercised, shall automatically adjust to provide the Holder with the same securities and/or rights that the Holder would have received had the Holder participated in the Pay to Play Financing to its full pro rata share with respect to the Preferred Stock issuable upon exercise of this Warrant (e.g., if this Warrant provides for the purchase of Series B Preferred Stock, and the Company after the date hereof consummates a Pay to Play Financing in which those holders of Series B Preferred Stock who participate to their full pro rata share in such Pay to Play Financing become entitled to exchange such Series B Preferred Stock for Series C Preferred Stock and those holders of Series B Preferred Stock who do not participate to their full pro rata share will have their Series B Preferred Stock converted into Common Stock, then this Warrant would automatically adjust to provide the right to purchase Series C Preferred Stock instead of Common Stock); provided, however, that in no event shall the value of the adjusted Warrant exceed the value of the Warrant as of the date immediately prior to the "**Pay to Play**" Financing (calculated based on the multiplying the number of shares by the exercise price set forth on the first page hereof).

SECTION 2. ADJUSTMENTS TO THE SHARES AND WARRANT PRICE.

2.1 Stock Dividends, Splits, Etc. If the Company declares or pays a dividend or distribution on the outstanding shares of the Class payable in common stock or other securities or property (other than cash), then upon exercise of this Warrant, for each Share acquired, Holder shall receive, without additional cost to Holder, the total number and kind of securities and property which Holder would have received had Holder owned the Shares of record as of the date the dividend or distribution occurred. If the Company subdivides the outstanding shares of the Class by reclassification or otherwise into a greater number of shares, the number of Shares purchasable hereunder shall be proportionately increased and the Warrant Price shall be proportionately decreased. If the outstanding shares of the Class are combined or consolidated, by reclassification or otherwise, into a lesser number of shares, the Warrant Price shall be proportionately increased and the number of Shares shall be proportionately decreased.

2.2 Reclassification, Exchange, Combinations or Substitution. Upon any event whereby all of the outstanding shares of the Class are reclassified, exchanged, combined, substituted, or replaced for, into, with or by Company securities of a different class and/or series, then from and after the consummation of such event, this Warrant will be exercisable for the number, class and series of Company securities that Holder would have received had the Shares been outstanding on and as of the consummation of such event, and subject to further adjustment thereafter from time to time in accordance with the provisions of this Warrant. The provisions of this Section 2.2 shall similarly apply to successive reclassifications, exchanges, combinations, substitutions, replacements or other similar events.

2.3 Conversion of Preferred Stock. If the Class is a class and series of the Company's convertible preferred stock, in the event that all outstanding shares of the Class are converted, automatically or by action of the holders thereof, into common stock pursuant to the provisions of the Company's Certificate of Incorporation, including, without limitation, in connection with the Company's initial, underwritten public offering and sale of its common stock pursuant to an effective registration statement under the Act (the "**IPO**"), then from and after the date on which all outstanding shares of the Class have been so converted, this Warrant shall be exercisable for such number of shares of common stock into which the Shares would have been converted had the Shares been outstanding on the date of such conversion, and the Warrant Price shall equal the Warrant Price in effect as of immediately prior to such conversion divided by the number of shares of common stock into which one Share would have been converted, all subject to further adjustment thereafter from time to time in accordance with the provisions of this Warrant.

2.4 Adjustments for Diluting Issuances. Without duplication of any adjustment otherwise provided for in this Section 2, the number of shares of common stock issuable upon conversion of the Shares shall be subject to anti-dilution adjustment from time to time in the manner set forth in the Company's Articles or Certificate of Incorporation as if the Shares were issued and outstanding on and as of the date of any such required adjustment.

2.5 No Fractional Share. No fractional Share shall be issuable upon exercise of this Warrant and the number of Shares to be issued shall be rounded down to the nearest whole Share. If a fractional Share interest arises upon any exercise of the Warrant, the Company shall eliminate such fractional Share interest by paying Holder in cash the amount computed by multiplying the fractional interest by (i) the fair market value (as determined in accordance with Section 1.3 above) of a full Share, less (ii) the then-effective Warrant Price.

2.6 Notice/Certificate as to Adjustments. Upon each adjustment of the Warrant Price, Class and/or number of Shares, the Company, at the Company's expense, shall notify Holder in writing within a reasonable time setting forth the adjustments to the Warrant Price, Class and/or number of Shares and facts upon which such adjustment is based. The Company shall, upon written request from Holder, furnish Holder with a certificate of its Chief Financial Officer, including computations of such adjustment and the Warrant Price, Class and number of Shares in effect upon the date of such adjustment.

SECTION 3. REPRESENTATIONS AND COVENANTS OF THE COMPANY.

3.1 Representations and Warranties. The Company represents and warrants to, and agrees with, the Holder as follows:

(a) The initial Warrant Price referenced on the first page of this Warrant is not greater than the price per share at which shares of the Class were last sold and issued prior to the Issue Date hereof in an arms-length transaction in which at least $500,000 of such shares were sold.

(b) All Shares which may be issued upon the exercise of this Warrant, and all securities, if any, issuable upon conversion of the Shares, shall, upon issuance, be duly authorized, validly issued, fully paid and non-assessable, and free of any liens and encumbrances except for restrictions on transfer provided for herein or under applicable federal and state securities laws. The Company covenants that it shall at all times cause to be reserved and kept available out of its authorized and unissued capital stock such number of shares of the Class, common stock and other securities as will be sufficient to permit the exercise in full of this Warrant and the conversion of the Shares into common stock or such other securities.

(c) The Company's capitalization table attached hereto as Schedule 1 is true and complete, in all material respects, as of the Issue Date.

3.2 Notice of Certain Events. If the Company proposes at any time to:

(a) declare any dividend or distribution upon the outstanding shares of the Class or common stock, whether in cash, property, stock, or other securities and whether or not a regular cash dividend;

(b) offer for subscription or sale pro rata to the holders of the outstanding shares of the Class any additional shares of any class or series of the Company's stock (other than pursuant to contractual participation or pre-emptive rights);

(c) effect any reclassification, exchange, combination, substitution, reorganization or recapitalization of the outstanding shares of the Class;

(d) effect an Acquisition or to liquidate, dissolve or wind up; or

(e) effect an IPO;

then, in connection with each such event, the Company shall give Holder:

(1) in the case of the matters referred to in (a) and (b) above, at least seven (7) Business Days prior written notice of the earlier to occur of the effective date thereof or the date on which a record will be taken for such dividend, distribution, or subscription rights (and specifying the date on which the holders of outstanding shares of the Class will be entitled thereto) or for determining rights to vote, if any;

(2) in the case of the matters referred to in (c) and (d) above at least seven (7) Business Days prior written notice of the date when the same will take place (and specifying the date on which the holders of outstanding shares of the Class will be entitled to exchange their shares for the securities or other property deliverable upon the occurrence of such event and such reasonable information as Holder may reasonably require regarding the treatment of this Warrant in connection with such event giving rise to the notice); and

(3) with respect to the IPO, at least seven (7) Business Days prior written notice of the date on which the Company proposes to publicly file its registration statement in connection therewith.

Company will also provide information requested by Holder that is reasonably necessary to enable Holder to comply with Holder's accounting or reporting requirements.

SECTION 4. REPRESENTATIONS, WARRANTIES OF THE HOLDER.

The Holder represents and warrants to the Company as follows:

4.1 Purchase for Own Account. This Warrant and the securities to be acquired upon exercise of this Warrant by Holder are being acquired for investment for Holder's account, not as a nominee or agent, and not with a view to the public resale or distribution within the meaning of the Act. Holder also represents that it has not been formed for the specific purpose of acquiring this Warrant or the Shares.

4.2 Disclosure of Information. Holder is aware of the Company's business affairs and financial condition and has received or has had full access to all the information it considers necessary or appropriate to make an informed investment decision with respect to the acquisition of this Warrant and its underlying securities. Holder further has had an opportunity to ask questions and receive answers from the Company regarding the terms and conditions of the offering of this Warrant and its underlying securities and to obtain additional information (to the extent the Company possessed such information or could acquire it without unreasonable effort or expense) necessary to verify any information furnished to Holder or to which Holder has access.

4.3 Investment Experience. Holder understands that the purchase of this Warrant and its underlying securities involves substantial risk. Holder has experience as an investor in securities of companies in the development stage and acknowledges that Holder can bear the economic risk of such Holder's investment in this Warrant and its underlying securities and has such knowledge and experience in financial or business matters that Holder is capable of evaluating the merits and risks of its investment in this Warrant and its underlying securities and/or has a preexisting personal or business relationship with the Company and certain of its officers, directors or controlling persons of a nature and duration that enables Holder to be aware of the character, business acumen and financial circumstances of such persons.

4.4 Accredited Investor Status. Holder is an "**accredited investor**" within the meaning of Regulation D promulgated under the Act.

4.5 The Act. Holder understands that this Warrant and the Shares issuable upon exercise hereof have not been registered under the Act in reliance upon a specific exemption therefrom, which exemption depends upon, among other things, the bona fide nature of the Holder's investment intent as expressed herein. Holder understands that this Warrant and the Shares issued upon any exercise hereof must be held indefinitely unless subsequently registered under the Act and qualified under applicable state securities laws, or unless exemption from such registration and qualification are otherwise available. Holder is aware of the provisions of Rule 144 promulgated under the Act.

4.6 Market Stand-off Agreement. The Holder agrees that the Shares shall be subject to the Market Standoff provisions in Section 2.12 of the Investor Rights Agreement or similar agreement.

4.7 No Voting Rights. Holder, as a Holder of this Warrant, will not have any voting rights until the exercise of this Warrant.

SECTION 5. ISCELLANEOUS.

5.1 Term and Automatic Conversion Upon Expiration.

(a) Term. Subject to the provisions of Section 1.6 above, this Warrant is exercisable in whole or in part at any time and from time to time on or before 6:00 PM, Pacific time, on the Expiration Date and shall be void thereafter.

(b) Automatic Cashless Exercise upon Expiration. In the event that, upon the Expiration Date, the fair market value of one Share (or other security issuable upon the exercise hereof) as determined in accordance with Section 1.3 above is greater than the Warrant Price in effect on such date, then this Warrant shall automatically be deemed on and as of such date to be exercised pursuant to Section 1.2 above as to all Shares (or such other securities) for which it shall not previously have been exercised, and the Company shall, within a reasonable time, deliver a certificate representing the Shares (or such other securities) issued upon such exercise to Holder.

5.2 Legends. The Shares (and the securities issuable, directly or indirectly, upon conversion of the Shares, if any) shall be imprinted with a legend in substantially the following form:

THE SHARES EVIDENCED BY THIS CERTIFICATE HAVE NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933, AS AMENDED (THE "**ACT**"), OR THE SECURITIES LAWS OF ANY STATE AND, EXCEPT AS SET FORTH IN THAT CERTAIN WARRANT TO PURCHASE STOCK ISSUED BY THE ISSUER TO SILICON VALLEY BANK DATED NOVEMBER 19, 2019 MAY NOT BE OFFERED, SOLD, PLEDGED OR OTHERWISE TRANSFERRED UNLESS AND UNTIL REGISTERED UNDER SAID ACT AND LAWS OR IN FORM AND SUBSTANCE SATISFACTORY TO THE ISSUER, SUCH OFFER, SALE, PLEDGE OR OTHER TRANSFER IS EXEMPT FROM SUCH REGISTRATION.

5.3 Compliance with Securities Laws on Transfer. This Warrant and the Shares issuable upon exercise of this Warrant (and the securities issuable, directly or indirectly, upon conversion of the Shares, if any) may not be transferred or assigned in whole or in part except in compliance with applicable federal and state securities laws by the transferor and the transferee (including, without limitation, the delivery of investment representation letters and legal opinions reasonably satisfactory to the Company, as reasonably requested by the Company). The Company shall not require Holder to provide an opinion of counsel if the transfer is to SVB Financial Group (Silicon Valley Bank's parent company) or any other affiliate of Holder, provided that any such transferee is an "**accredited investor**" as defined in Regulation D promulgated under the Act. Additionally, the Company shall also not require an opinion of counsel if there is no material question as to the availability of Rule 144 promulgated under the Act.

5.4 Transfer Procedure. After receipt by Silicon Valley Bank of the executed Warrant, Silicon Valley Bank will transfer all of this Warrant to its parent company, SVB Financial Group. By its acceptance of this Warrant, SVB Financial Group hereby makes to the Company each of the representations and warranties set forth in Section 4 hereof and agrees to be bound by all of the terms and conditions of this Warrant as if the original Holder hereof. Subject to the provisions of Section 5.3 and upon providing the Company with written notice, SVB Financial Group and any subsequent Holder may transfer all or part of this Warrant or the Shares issuable upon exercise of this Warrant (or the securities issuable directly or indirectly, upon conversion of the Shares, if any) to any transferee, provided, however, in connection with any such transfer, SVB Financial Group or any subsequent Holder will give the Company notice of the portion of the Warrant being transferred with the name, address and taxpayer identification number of the transferee and Holder will surrender this Warrant to the Company for reissuance to the transferee(s) (and Holder if applicable); and provided further, that any subsequent transferee other than SVB Financial Group shall agree in writing with the Company to be bound by all of the terms and conditions of this Warrant. Notwithstanding any contrary provision herein, at all times prior to the IPO, Holder may not, without the Company's prior written consent, transfer this Warrant or any portion hereof, or any Shares issued upon any exercise hereof, or any shares or other securities issued upon any conversion of any Shares issued upon any exercise hereof, to any person or entity who directly competes with the Company, except in connection with an Acquisition of the Company by such a direct competitor.

5.5 Notices. All notices and other communications hereunder from the Company to the Holder, or vice versa, shall be deemed delivered and effective (i) when given personally, (ii) on the third (3rd) Business Day after being mailed by first-class registered or certified mail, postage prepaid, (iii) upon actual receipt if given by electronic mail and such receipt is confirmed in writing by the recipient, or (iv) on the first Business Day following delivery to a reliable overnight courier service, courier fee prepaid, in any case at such address as may have been furnished to the Company or Holder, as the case may be, in writing by the Company or such Holder from time to time in accordance with the provisions of this Section 5.5. All notices to Holder shall be addressed as follows until the Company receives notice of a change of address in connection with a transfer or otherwise:

SVB Financial Group
Attn: Treasury Department
3003 Tasman Drive, HC 215
Santa Clara, CA 95054
Telephone:
Email address: derivatives@svb.com

Notice to the Company shall be addressed as follows until Holder receives notice of a change in address:

SINGULAR GENOMICS SYSTEMS, INC.
Attn: Drew Spaventa, CEO
10931 N. Torrey Pines Road
La Jolla, CA 92037
Telephone:
Email:

With a copy to, which shall not constitute notice to the Borrower:

Gunderson Dettmer Stough Villeneuve Franklin & Hachigian, LLP
c/o Jeffrey Thacker
3570 Carmel Mountain Road
Suite 200
San Diego, CA 92130
Email: jthacker@gunder.com

5.6 Waiver. This Warrant and any term hereof may be changed, waived, discharged or terminated (either generally or in a particular instance and either retroactively or prospectively) only by an instrument in writing signed by the party against which enforcement of such change, waiver, discharge or termination is sought.

5.7 Attorney's Fees. In the event of any dispute between the parties concerning the terms and provisions of this Warrant, the party prevailing in such dispute shall be entitled to collect from the other party all costs incurred in such dispute, including reasonable attorneys' fees.

5.8 Counterparts; Electronic Signatures; Status as Certificated Security. This Warrant may be executed in counterparts, all of which together shall constitute one and the same agreement. Company, Holder and any other party hereto may execute this Warrant by electronic means and each party hereto recognizes and accepts the use of electronic signatures and records by any other party hereto in connection with the execution and storage hereof. To the extent that this Warrant or any agreement subject to the terms hereof or any amendment hereto is executed, recorded or delivered electronically, it shall be binding to the same extent as though it had been executed on paper with an original ink signature. The fact that this Warrant is executed, signed, stored or delivered electronically shall not prevent the transfer by any Holder of this Warrant pursuant to Section 5.4 or the enforcement of the terms hereof. This Warrant, and any copies hereof, shall NOT be deemed to be a "certificated security" within the meaning of Section 8102 (a)(4) of the California Commercial Code. Physical possession of the original of this Warrant or any paper copy thereof shall confer no special status to the bearer thereof.

5.9 Governing Law. This Warrant shall be governed by and construed in accordance with the laws of the State of California, without giving effect to its principles regarding conflicts of law.

5.10 Headings. The headings in this Warrant are for purposes of reference only and shall not limit or otherwise affect the meaning of any provision of this Warrant.

5.11 Business Days. "**Business Day**" is any day that is not a Saturday, Sunday or a day on which Silicon Valley Bank is closed.

[Remainder of page left blank intentionally]
[Signature page follows]

IN WITNESS WHEREOF, the parties have caused this Warrant to Purchase Stock to be executed by their duly authorized representatives effective as of the Issue Date written above.

"COMPANY"
SINGULAR GENOMICS SYSTEMS, INC.

By: /s/ Drew Spaventa
Name: Drew Spaventa
Title: CEO

"HOLDER"

SILICON VALLEY BANK

By: /s/ Igor DaCruz
Name: Igor DaCruz
Title: Director

APPENDIX 1

NOTICE OF EXERCISE

1. The undersigned Holder hereby exercises its right to purchase _____ shares of the Common/Series _____ Preferred [circle one] Stock of SINGULAR GENOMICS SYSTEMS, INC. (the "**Company**") in accordance with the attached Warrant to Purchase Stock, and tenders payment of the aggregate Warrant Price for such shares as follows:

[ ] Check in the amount of $_____ payable to the order of the Company enclosed herewith

[ ] Wire transfer of immediately available funds to the Company's account

[ ] Cashless Exercise pursuant to Section 1.2 of the Warrant

[ ] Other [Describe]

2. Please issue a certificate or certificates representing the Shares in the name specified below:

_____
Holder's Name

_____

_____
(Address)

3. By its execution below and for the benefit of the Company, Holder hereby restates each of the representations and warranties in Section 4 of the Warrant to Purchase Stock as of the date hereof.

HOLDER:

By: _____

Name: _____

Title: _____

(Date): _____

SCHEDULE 1

Company Capitalization Table

[omitted]

FIRST AMENDMENT
TO
WARRANT TO PURCHASE STOCK

This First Amendment to Warrant to Purchase Stock (this "Amendment") is entered into as of May 1, 2020, by and between SVB Financial Group ("Holder") and Singular Genomics Systems, Inc., a Delaware corporation ("Company") whose address is 10931 N. Torrey Pines Road, La Jolla, CA 92037.

RECITALS

A. Company executed and delivered to Silicon Valley Bank ("Bank") that certain Warrant to Purchase Stock dated November 19, 2019 (the "Warrant"), in connection with that certain Loan and Security Agreement of even date therewith, between Bank and Borrower (as amended, restated, supplemented or otherwise modified from time to time, the "Loan Agreement"), which Warrant was then assigned by Bank to Holder.

B. Borrower has requested that Holder amend the Warrant to state the number of additional shares that Holder has the right to purchase under the Warrant, as automatically granted under the terms of the Warrant (as in effect immediately prior to this Amendment) upon the funding of an advance under the Second Tranche (as defined in the Loan Agreement) in an amount equal to Seven Million Five Hundred Thousand Dollars ($7,500,000).

C. Holder has agreed to so amend the Warrant, but only to the extent, in accordance with the terms and subject to the conditions set forth below.

AGREEMENT

NOW, THEREFORE, in consideration of the foregoing recitals and other good and valuable consideration, the receipt and adequacy of which is hereby acknowledged, and intending to be legally bound, the parties hereto agree as follows:

1. Definitions. Capitalized terms used but not defined in this Amendment shall have the meanings given to them in the Warrant.

2. Amendments to Warrant.

2.1 Number of Shares. The Section titled "**Number of Shares**" on page 1 of the Warrant is amended in its entirety and replaced with the following:

Number of Shares: A number equal to the sum of (a) 32,289 which Holder became entitled to purchase as the Issue Date, plus (b) 96,867 which Holder became entitled to purchase as of March 23, 2020, plus (c) all Additional Shares which Holder is entitled to purchase pursuant to Section 1.7.

2.2 Section 1.7 (Additional Shares). Section 1.7 is amended in its entirety and replaced with the following:

1.7 Additional Shares. Upon the funding of each Growth Capital Advance under the Third Tranche (as such terms are defined in the Loan Agreement), Company shall be deemed to have automatically granted to Holder, in addition to the number of Shares which this Warrant can otherwise be exercised for by Holder, the right to purchase that number of additional Shares, rounded upward to the nearest whole number, equal to (a) three percent (3.0%) of the principal amount of such Growth Capital Advance, divided by (b) the Warrant Price, subject to adjustment in accordance with Section 2 below (such additional shares being called the "Additional Shares").

2.3 Signature Block for Company. For clarity, the name of Company in the signature block of the Warrant is amended in its entirety and replaced with the following:

SINGULAR GENOMICS SYSTEMS, INC.

3. Limitation of Amendment.

3.1 The amendments set forth in Section 2 above are effective for the purposes set forth herein and shall be limited precisely as written and shall not be deemed to (a) be a consent to any amendment, waiver or modification of any other term or condition of the Warrant, or (b) otherwise prejudice any right or remedy which Holder may now have or may have in the future under or in connection with the Warrant.

4. Integration. This Amendment and the Warrant represent the entire agreement about this subject matter and supersede prior negotiations or agreements. All prior agreements, understandings, representations, warranties, and negotiations between the parties about the subject matter of this Amendment and the Warrant merge into this Amendment and the Warrant.

5. Counterparts. This Amendment may be executed in any number of counterparts and all of such counterparts taken together shall be deemed to constitute one and the same instrument.

[Signature page follows.]

IN WITNESS WHEREOF, the parties hereto have caused this Amendment to be duly executed and delivered as of the date first written above.

HOLDER

SVB FINANCIAL GROUP

By: /s/ David Busch

Name: David Busch

Title: Sr. Manager, Corporate Investment & Funding

COMPANY

SINGULAR GENOMICS SYSTEMS, INC.

By: /s/ Jeremy Ferrell

Name: Jeremy Ferrell

Title: CFO

Exhibit 10.2

SINGULAR GENOMICS SYSTEMS, INC.

2016 STOCK PLAN

ADOPTED ON SEPTEMBER 19, 2016

TABLE OF CONTENTS

SINGULAR GENOMICS SYSTEMS, INC.
2016 STOCK PLAN

SECTION 1. ESTABLISHMENT AND PURPOSE.

The purpose of this Plan is to offer persons selected by the Company an opportunity to acquire a proprietary interest in the success of the Company, or to increase such interest, by acquiring Shares of the Company's Stock. The Plan provides both for the direct award or sale of Shares and for the grant of Options to purchase Shares. Options granted under the Plan may be ISOs intended to qualify under Code Section 422 or NSOs which are not intended to so qualify.

Capitalized terms are defined in Section 11.

SECTION 2. ADMINISTRATION.

(a) **Committees of the Board of Directors**. The Plan may be administered by one or more Committees. Each Committee shall consist, as required by applicable law, of one or more members of the Board of Directors who have been appointed by the Board of Directors. Each Committee shall have such authority and be responsible for such functions as the Board of Directors has assigned to it. If no Committee has been appointed, the entire Board of Directors shall administer the Plan. Any reference to the Board of Directors in the Plan shall be construed as a reference to the Committee (if any) to whom the Board of Directors has assigned a particular function.

(b) Authority of the Board of Directors. Subject to the provisions of the Plan, the Board of Directors shall have full authority and discretion to take any actions it deems necessary or advisable for the administration of the Plan. Notwithstanding anything to the contrary in the Plan, with respect to the terms and conditions of awards granted to Participants outside the United States, the Board of Directors may vary from the provisions of the Plan to the extent it determines it necessary and appropriate to do so; provided that it may not vary from those Plan terms requiring stockholder approval pursuant to Section 10(d) below. All decisions, interpretations and other actions of the Board of Directors shall be final and binding on all Purchasers, all Optionees and all persons deriving their rights from a Purchaser or Optionee.

SECTION 3. ELIGIBILITY.

(a) General Rule. Only Employees, Outside Directors and Consultants shall be eligible for the grant of NSOs or the direct award or sale of Shares. Only Employees shall be eligible for the grant of ISOs.

(b) Ten-Percent Stockholders. A person who owns more than 10% of the total combined voting power of all classes of outstanding stock of the Company, its Parent or any of its Subsidiaries shall not be eligible for the grant of an ISO unless (i) the Exercise Price is at

least 110% of the Fair Market Value of a Share on the Date of Grant and (ii) such ISO by its terms is not exercisable after the expiration of five years from the Date of Grant. For purposes of this Subsection (b), in determining stock ownership, the attribution rules of Code Section 424(d) shall be applied.

SECTION 4. STOCK SUBJECT TO PLAN.

(a) Basic Limitation. Not more than 4,899,650 Shares may be issued under the Plan, subject to Subsection (b) below and Section 8(a).[1] All of these Shares may be issued upon the exercise of ISOs. The number of Shares that are subject to Options or other rights outstanding at any time under the Plan may not exceed the number of Shares that then remain available for issuance under the Plan. The Company, during the term of the Plan, shall at all times reserve and keep available sufficient Shares to satisfy the requirements of the Plan. Shares offered under the Plan may be authorized but unissued Shares or treasury Shares.

(b) Additional Shares. In the event that Shares previously issued under the Plan are reacquired by the Company, such Shares shall be added to the number of Shares then available for issuance under the Plan. In the event that Shares that otherwise would have been issuable under the Plan are withheld by the Company in payment of the Purchase Price, Exercise Price or withholding taxes, such Shares shall remain available for issuance under the Plan. In the event that an outstanding Option or other right for any reason expires or is canceled, the Shares allocable to the unexercised portion of such Option or other right shall be added to the number of Shares then available for issuance under the Plan.

SECTION 5. TERMS AND CONDITIONS OF AWARDS OR SALES.

(a) Stock Grant or Purchase Agreement. Each award of Shares under the Plan shall be evidenced by a Stock Grant Agreement between the Grantee and the Company. Each sale of Shares under the Plan (other than upon exercise of an Option) shall be evidenced by a Stock Purchase Agreement between the Purchaser and the Company. Such award or sale shall be subject to all applicable terms and conditions of the Plan and may be subject to any other terms and conditions which are not inconsistent with the Plan and which the Board of Directors deems appropriate for inclusion in a Stock Grant Agreement or Stock Purchase Agreement. The provisions of the various Stock Grant Agreements and Stock Purchase Agreements entered into under the Plan need not be identical.

(b) Duration of Offers and Nontransferability of Rights. Any right to purchase Shares under the Plan (other than an Option) shall automatically expire if not exercised by the Purchaser within 30 days (or such other period as may be specified in the Award Agreement) after the grant of such right was communicated to the Purchaser by the Company. Such right is not transferable and may be exercised only by the Purchaser to whom such right was granted.

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1 Please refer to Exhibit A for a schedule of the initial share reserve and any subsequent increases in the reserve.

(c) **Purchase Price**. The Board of Directors shall determine the Purchase Price of Shares to be offered under the Plan at its sole discretion. The Purchase Price shall be payable in a form described in Section 7.

SECTION 6. TERMS AND CONDITIONS OF OPTIONS.

(a) **Stock Option Agreement**. Each grant of an Option under the Plan shall be evidenced by a Stock Option Agreement between the Optionee and the Company. The Option shall be subject to all applicable terms and conditions of the Plan and may be subject to any other terms and conditions that are not inconsistent with the Plan and that the Board of Directors deems appropriate for inclusion in a Stock Option Agreement. The provisions of the various Stock Option Agreements entered into under the Plan need not be identical.

(b) **Number of Shares**. Each Stock Option Agreement shall specify the number of Shares that are subject to the Option and shall provide for the adjustment of such number in accordance with Section 8. The Stock Option Agreement shall also specify whether the Option is an ISO or an NSO.

(c) **Exercise Price**. Each Stock Option Agreement shall specify the Exercise Price. The Exercise Price of an Option shall not be less than 100% of the Fair Market Value of a Share on the Date of Grant, and in the case of an ISO a higher percentage may be required by Section 3(b). Subject to the preceding sentence, the Exercise Price shall be determined by the Board of Directors at its sole discretion. The Exercise Price shall be payable in a form described in Section 7. This Subsection (c) shall not apply to an Option granted pursuant to an assumption of, or substitution for, another option in a manner that complies with Code Section 424(a) (whether or not the Option is an ISO).

(d) **Exercisability**. Each Stock Option Agreement shall specify the date when all or any installment of the Option is to become exercisable. No Option shall be exercisable unless the Optionee (i) has delivered an executed copy of the Stock Option Agreement to the Company or (ii) otherwise agrees to be bound by the terms of the Stock Option Agreement. The Board of Directors shall determine the exercisability provisions of the Stock Option Agreement at its sole discretion.

(e) **Basic Term**. The Stock Option Agreement shall specify the term of the Option. The term shall not exceed 10 years from the Date of Grant, and in the case of an ISO, a shorter term may be required by Section 3(b). Subject to the preceding sentence, the Board of Directors at its sole discretion shall determine when an Option is to expire.

(f) **Termination of Service (Except by Death)**. If an Optionee’s Service terminates for any reason other than the Optionee’s death, then the Optionee’s Options shall expire on the earliest of the following dates:

(i) The expiration date determined pursuant to Subsection (e) above;

(ii) The date three months after the termination of the Optionee's Service for any reason other than Disability, or such earlier or later date as the Board of Directors may determine (but in no event earlier than 30 days after the termination of the Optionee's Service); or

(iii) The date six months after the termination of the Optionee's Service by reason of Disability, or such later date as the Board of Directors may determine.

The Optionee may exercise all or part of the Optionee's Options at any time before the expiration of such Options under the preceding sentence, but only to the extent that such Options had become exercisable before the Optionee's Service terminated (or became exercisable as a result of the termination) and the underlying Shares had vested before the Optionee's Service terminated (or vested as a result of the termination). The balance of such Options shall lapse when the Optionee's Service terminates. In the event that the Optionee dies after the termination of the Optionee's Service but before the expiration of the Optionee's Options, all or part of such Options may be exercised (prior to expiration) by the executors or administrators of the Optionee's estate or by any person who has acquired such Options directly from the Optionee by beneficiary designation, bequest or inheritance, but only to the extent that such Options had become exercisable before the Optionee's Service terminated (or became exercisable as a result of the termination) and the underlying Shares had vested before the Optionee's Service terminated (or vested as a result of the termination).

(g) **Leaves of Absence**. For purposes of Subsection (f) above, Service shall be deemed to continue while the Optionee is on a bona fide leave of absence, if such leave was approved by the Company in writing and if continued crediting of Service for this purpose is expressly required by the terms of such leave or by applicable law (as determined by the Company).

(h) **Death of Optionee**. If an Optionee dies while the Optionee is in Service, then the Optionee's Options shall expire on the earlier of the following dates:

(i) The expiration date determined pursuant to Subsection (e) above; or

(ii) The date 12 months after the Optionee's death, or such earlier or later date as the Board of Directors may determine (but in no event earlier than six months after the Optionee's death).

All or part of the Optionee's Options may be exercised at any time before the expiration of such Options under the preceding sentence by the executors or administrators of the Optionee's estate or by any person who has acquired such Options directly from the Optionee by beneficiary designation, bequest or inheritance, but only to the extent that such Options had become exercisable before the Optionee's death (or became exercisable as a result of the death) and the underlying Shares had vested before the Optionee's death (or vested as a result of the Optionee's death). The balance of such Options shall lapse when the Optionee dies.

(i) **Restrictions on Transfer of Options**. An Option shall be transferable by the Optionee only by (i) a beneficiary designation, (ii) a will or (iii) the laws of descent and distribution, except as provided in the next sentence. If the applicable Stock Option Agreement so provides, an NSO shall also be transferable by gift or domestic relations order to a Family Member of the Optionee. An ISO may be exercised during the lifetime of the Optionee only by the Optionee or by the Optionee's guardian or legal representative.

(j) **No Rights as a Stockholder**. An Optionee, or a transferee of an Optionee, shall have no rights as a stockholder with respect to any Shares covered by the Optionee's Option until such person files a notice of exercise, pays the Exercise Price and satisfies all applicable withholding taxes pursuant to the terms of such Option.

(k) **Modification, Extension and Assumption of Options**. Within the limitations of the Plan, the Board of Directors may modify, extend or assume outstanding Options or may accept the cancellation of outstanding Options (whether granted by the Company or another issuer) in return for the grant of new Options or a different type of award for the same or a different number of Shares and at the same or a different Exercise Price (if applicable). The foregoing notwithstanding, no modification of an Option shall, without the consent of the Optionee, impair the Optionee's rights or increase the Optionee's obligations under such Option.

(l) **Company's Right to Cancel Certain Options**. Any other provision of the Plan or a Stock Option Agreement notwithstanding, the Company shall have the right at any time to cancel an Option that was not granted in compliance with Rule 701 under the Securities Act. Prior to canceling such Option, the Company shall give the Optionee not less than 30 days' notice in writing. If the Company elects to cancel such Option, it shall deliver to the Optionee consideration with an aggregate Fair Market Value equal to the excess of (i) the Fair Market Value of the Shares subject to such Option as of the time of the cancellation over (ii) the Exercise Price of such Option. The consideration may be delivered in the form of cash or cash equivalents, in the form of Shares, or a combination of both. If the consideration would be a negative amount, such Option may be cancelled without the delivery of any consideration.

SECTION 7. PAYMENT FOR SHARES.

(a) **General Rule**. The entire Purchase Price or Exercise Price of Shares issued under the Plan shall be payable in cash or cash equivalents at the time when such Shares are purchased, except as otherwise provided in this Section 7. In addition, the Board of Directors in its sole discretion may also permit payment through any of the methods described in (b) through (g) below.

(b) **Services Rendered**. Shares may be awarded under the Plan in consideration of services rendered to the Company, a Parent or a Subsidiary prior to the award.

(c) **Promissory Note**. All or a portion of the Purchase Price or Exercise Price (as the case may be) of Shares issued under the Plan may be paid with a full-recourse promissory note. The Shares shall be pledged as security for payment of the principal amount of the promissory note and interest thereon. The interest rate payable under the terms of the promissory note shall not be less than the minimum rate (if any) required to avoid the imputation of

additional interest under the Code. Subject to the foregoing, the Board of Directors (at its sole discretion) shall specify the term, interest rate, amortization requirements (if any) and other provisions of such note.

(d) **Surrender of Stock**. All or any part of the Exercise Price may be paid by surrendering, or attesting to the ownership of, Shares that are already owned by the Optionee. Such Shares shall be surrendered to the Company in good form for transfer and shall be valued at their Fair Market Value as of the date when the Option is exercised.

(e) **Exercise/Sale**. If the Stock is publicly traded, all or part of the Exercise Price and any withholding taxes may be paid by the delivery (on a form prescribed by the Company) of an irrevocable direction to a securities broker approved by the Company to sell Shares and to deliver all or part of the sales proceeds to the Company.

(f) **Net Exercise**. An Option may permit exercise through a "net exercise" arrangement pursuant to which the Company will reduce the number of Shares issued upon exercise by the largest whole number of Shares having an aggregate Fair Market Value (determined by the Board of Directors as of the exercise date) that does not exceed the aggregate Exercise Price or the sum of the aggregate Exercise Price plus all or a portion of the minimum amount required to be withheld under applicable tax law (with the Company accepting from the Optionee payment of cash or cash equivalents to satisfy any remaining balance of the aggregate Exercise Price and, if applicable, any additional withholding obligation not satisfied through such reduction in Shares); *provided* that to the extent Shares subject to an Option are withheld in this manner, the number of Shares subject to the Option following the net exercise will be reduced by the sum of the number of Shares withheld and the number of Shares delivered to the Optionee as a result of the exercise.

(g) **Other Forms of Payment**. To the extent that an Award Agreement so provides, the Purchase Price or Exercise Price of Shares issued under the Plan may be paid in any other form permitted by the Delaware General Corporation Law, as amended.

SECTION 8. ADJUSTMENT OF SHARES.

(a) **General**. In the event of a subdivision of the outstanding Stock, a declaration of a dividend payable in Shares, a combination or consolidation of the outstanding Stock into a lesser number of Shares, a reclassification, or any other increase or decrease in the number of issued shares of Stock effected without receipt of consideration by the Company, proportionate adjustments shall automatically be made in each of (i) the number and kind of Shares available for future grants under Section 4, (ii) the number and kind of Shares covered by each outstanding Option and any outstanding and unexercised right to purchase Shares that has not yet expired pursuant to Section 5(b), (iii) the Exercise Price under each outstanding Option and the Purchase Price applicable to any unexercised stock purchase right described in clause (ii) above, and (iv) any repurchase price that applies to Shares granted under the Plan pursuant to the terms of a Company repurchase right under the applicable Award Agreement. In the event of a declaration of an extraordinary dividend payable in a form other than Shares in an amount that has a material effect on the Fair Market Value of the Stock, a recapitalization, a spin-off, or a similar occurrence, the Board of Directors at its sole discretion may make appropriate

adjustments in one or more of the items listed in clauses (i) through (iv) above; provided, however, that the Board of Directors shall in any event make such adjustments as may be required by applicable state law. No fractional Shares shall be issued under the Plan as a result of an adjustment under this Section 8(a), although the Board of Directors in its sole discretion may make a cash payment in lieu of fractional Shares.

(b) **Corporate Transactions**. In the event that the Company is a party to a merger or consolidation, or in the event of a sale of all or substantially all of the Company's stock or assets, all Shares acquired under the Plan and all Options and other Plan awards outstanding on the effective date of the transaction shall be treated in the manner described in the definitive transaction agreement (or, in the event the transaction does not entail a definitive agreement to which the Company is party, in the manner determined by the Board of Directors in its capacity as administrator of the Plan, with such determination having final and binding effect on all parties), which agreement or determination need not treat all Options and awards (or all portions of an Option or an award) in an identical manner. The treatment specified in the transaction agreement or as determined by the Board of Directors may include (without limitation) one or more of the following with respect to each outstanding Option or award:

(i) Continuation of the Option or award by the Company (if the Company is the surviving corporation).

(ii) Assumption of the Option by the surviving corporation or its parent in a manner that complies with Code Section 424(a) (whether or not the Option is an ISO).

(iii) Substitution by the surviving corporation or its parent of a new option for the Option in a manner that complies with Code Section 424(a) (whether or not the Option is an ISO).

(iv) Cancellation of the Option and a payment to the Optionee with respect to each Share subject to the portion of the Option that is vested as of the transaction date equal to the excess of (A) the value, as determined by the Board of Directors in its absolute discretion, of the property (including cash) received by the holder of a share of Stock as a result of the transaction, over (B) the per-Share Exercise Price of the Option (such excess, the "**Spread**"). Such payment shall be made in the form of cash, cash equivalents, or securities of the surviving corporation or its parent having a value equal to the Spread. In addition, any escrow, holdback, earn-out or similar provisions in the transaction agreement may apply to such payment to the same extent and in the same manner as such provisions apply to the holders of Stock. If the Spread applicable to an Option is zero or a negative number, then the Option may be cancelled without making a payment to the Optionee.

(v) Cancellation of the Option without the payment of any consideration; provided that the Optionee shall be notified of such treatment and given an opportunity to exercise the Option (to the extent the Option is vested or becomes vested as of the effective date of the transaction) during a period of not

less than five (5) business days preceding the effective date of the transaction, unless (A) a shorter period is required to permit a timely closing of the transaction and (B) such shorter period still offers the Optionee a reasonable opportunity to exercise the Option. Any exercise of the Option during such period may be contingent upon the closing of the transaction.

(vi) Suspension of the Optionee's right to exercise the Option during a limited period of time preceding the closing of the transaction if such suspension is administratively necessary to permit the closing of the transaction.

(vii) Termination of any right the Optionee has to exercise the Option prior to vesting in the Shares subject to the Option (i.e., "early exercise"), such that following the closing of the transaction the Option may only be exercised to the extent it is vested.

For the avoidance of doubt, the Board of Directors has discretion to accelerate, in whole or part, the vesting and exercisability of an Option or other Plan award in connection with a corporate transaction covered by this Section 8(b).

(c) **Reservation of Rights**. Except as provided in this Section 8, a Participant shall have no rights by reason of (i) any subdivision or consolidation of shares of stock of any class, (ii) the payment of any dividend or (iii) any other increase or decrease in the number of shares of stock of any class. Any issuance by the Company of shares of stock of any class, or securities convertible into shares of stock of any class, shall not affect, and no adjustment by reason thereof shall be made with respect to, the number or Exercise Price of Shares subject to an Option. The grant of an Option pursuant to the Plan shall not affect in any way the right or power of the Company to make adjustments, reclassifications, reorganizations or changes of its capital or business structure, to merge or consolidate or to dissolve, liquidate, sell or transfer all or any part of its business or assets.

SECTION 9. MISCELLANEOUS PROVISIONS.

(a) **Securities Law Requirements**. Shares shall not be issued under the Plan unless, in the opinion of counsel acceptable to the Board of Directors, the issuance and delivery of such Shares comply with (or are exempt from) all applicable requirements of law, including (without limitation) the Securities Act, the rules and regulations promulgated thereunder, state securities laws and regulations, and the regulations of any stock exchange or other securities market on which the Company's securities may then be traded. The Company shall not be liable for a failure to issue Shares as a result of such requirements.

(b) **No Retention Rights**. Nothing in the Plan or in any right or Option granted under the Plan shall confer upon the Participant any right to continue in Service for any period of specific duration or interfere with or otherwise restrict in any way the rights of the Company (or any Parent or Subsidiary employing or retaining the Participant) or of the Participant, which rights are hereby expressly reserved by each, to terminate his or her Service at any time and for any reason, with or without cause.

(c) **Treatment as Compensation**. Any compensation that an individual earns or is deemed to earn under this Plan shall not be considered a part of his or her compensation for purposes of calculating contributions, accruals or benefits under any other plan or program that is maintained or funded by the Company, a Parent or a Subsidiary.

(d) **Governing Law**. The Plan and all awards, sales and grants under the Plan shall be governed by, and construed in accordance with, the laws of the State of Delaware, as such laws are applied to contracts entered into and performed in such State.

(e) **Conditions and Restrictions on Shares**. Shares issued under the Plan shall be subject to such forfeiture conditions, rights of repurchase, rights of first refusal, other transfer restrictions and such other terms and conditions as the Board of Directors may determine. Such conditions and restrictions shall be set forth in the applicable Award Agreement and shall apply in addition to any restrictions that may apply to holders of Shares generally. In addition, Shares issued under the Plan shall be subject to conditions and restrictions imposed either by applicable law or by Company policy, as adopted from time to time, designed to ensure compliance with applicable law or laws with which the Company determines in its sole discretion to comply including in order to maintain any statutory, regulatory or tax advantage.

(f) **Tax Matters**.

(i) As a condition to the award, grant, issuance, vesting, purchase, exercise or transfer of any award, or Shares issued pursuant to any award, granted under this Plan, the Participant shall make such arrangements as the Board of Directors may require or permit for the satisfaction of any federal, state, local or foreign withholding tax obligations that may arise in connection with such event.

(ii) Unless otherwise expressly set forth in an Award Agreement, it is intended that awards granted under the Plan shall be exempt from Code Section 409A, and any ambiguity in the terms of an Award Agreement and the Plan shall be interpreted consistently with this intent. To the extent an award is not exempt from Code Section 409A (any such award, a "**409A Award**"), any ambiguity in the terms of such award and the Plan shall be interpreted in a manner that to the maximum extent permissible supports the award's compliance with the requirements of that statute. Notwithstanding anything to the contrary permitted under the Plan, in no event shall a modification of an Award not already subject to Code Section 409A be given effect if such modification would cause the Award to become subject to Code Section 409A unless the parties explicitly acknowledge and consent to the modification as one having that effect. A 409A Award shall be subject to such additional rules and requirements as specified by the Board of Directors from time to time in order for it to comply with the requirements of Code Section 409A. In this regard, if any amount under a 409A Award is payable upon a "separation from service" to an individual who is considered a "specified employee" (as each term is defined under Code Section 409A), then no such payment shall be made prior to the date that is the earlier of (i) six months and one day after the Participant's separation from service or (ii)

the Participant's death, but only to the extent such delay is necessary to prevent such payment from being subject to Section 409A(a)(1). In addition, if a transaction subject to Section 8(b) constitutes a payment event with respect to any 409A Award, then the transaction with respect to such award must also constitute a "change in control event" as defined in Treasury Regulation Section 1.409A-3(i)(5) to the extent required by Code Section 409A.

(iii) Neither the Company nor any member of the Board of Directors shall have any liability to a Participant in the event an award held by the Participant fails to achieve its intended characterization under applicable tax law.

SECTION 10. DURATION AND AMENDMENTS; STOCKHOLDER APPROVAL.

(a) **Term of the Plan**. The Plan, as set forth herein, shall become effective on the date of its adoption by the Board of Directors, subject to approval of the Company's stockholders under Subsection (d) below. The Plan shall terminate automatically 10 years after the later of (i) the date when the Board of Directors adopted the Plan or (ii) the date when the Board of Directors approved the most recent increase in the number of Shares reserved under Section 4 that was also approved by the Company's stockholders. The Plan may be terminated on any earlier date pursuant to Subsection (b) below.

(b) **Right to Amend or Terminate the Plan**. Subject to Subsection (d) below, the Board of Directors may amend, suspend or terminate the Plan at any time and for any reason.

(c) **Effect of Amendment or Termination**. No Shares shall be issued or sold and no Option granted under the Plan after the termination thereof, except upon exercise of an Option (or any other right to purchase Shares) granted under the Plan prior to such termination. The termination of the Plan, or any amendment thereof, shall not affect any Share previously issued or any Option previously granted under the Plan.

(d) **Stockholder Approval**. To the extent required by applicable law, the Plan will be subject to approval of the Company's stockholders within 12 months of its adoption date. To the extent required by applicable law, any amendment of the Plan will be subject to the approval of the Company's stockholders within 12 months of the amendment date if it (i) increases the number of Shares available for issuance under the Plan (except as provided in Section 8), or (ii) materially changes the class of persons who are eligible for the grant of ISOs. In addition, an amendment effecting any other material change to the Plan terms will be subject to approval of the Company's stockholder only if required by applicable law. Stockholder approval shall not be required for any other amendment of the Plan.

SECTION 11. DEFINITIONS.

(a) "**Award Agreement**" means a Stock Grant Agreement, Stock Option Agreement or Stock Purchase Agreement.

(b) "**Board of Directors**" means the Board of Directors of the Company, as constituted from time to time.

(c) "**Code**" means the Internal Revenue Code of 1986, as amended.

(d) "**Committee**" means a committee of the Board of Directors, as described in Section 2(a).

(e) "**Company**" means Singular Genomics Systems, Inc., a Delaware corporation.

(f) "**Consultant**" means a person, excluding Employees and Outside Directors, who performs bona fide services for the Company, a Parent or a Subsidiary as a consultant or advisor and who qualifies as a consultant or advisor under Rule 701(c)(1) of the Securities Act or under Instruction A.1.(a)(1) of Form S-8 under the Securities Act.

(g) "**Date of Grant**" means the date of grant specified in the applicable Stock Option Agreement, which date shall be the later of (i) the date on which the Board of Directors resolved to grant the Option or (ii) the first day of the Optionee's Service.

(h) "**Disability**" means that the Optionee is unable to engage in any substantial gainful activity by reason of any medically determinable physical or mental impairment.

(i) "**Employee**" means any individual who is a common-law employee of the Company, a Parent or a Subsidiary.

(j) "**Exchange Act**" means the Securities Exchange Act of 1934, as amended.

(k) "**Exercise Price**" means the amount for which one Share may be purchased upon exercise of an Option, as specified by the Board of Directors in the applicable Stock Option Agreement.

(l) "**Fair Market Value**" means the fair market value of a Share, as determined by the Board of Directors in good faith. Such determination shall be conclusive and binding on all persons.

(m) "**Family Member**" means (i) any child, stepchild, grandchild, parent, stepparent, grandparent, spouse, former spouse, sibling, niece, nephew, mother-in-law, father-in-law, son-in-law, daughter-in-law, brother-in-law or sister-in-law, including adoptive relationships, (ii) any person sharing the Optionee's household (other than a tenant or employee), (iii) a trust in which persons described in Clause (i) or (ii) have more than 50% of the beneficial interest, (iv) a foundation in which persons described in Clause (i) or (ii) or the Optionee control the management of assets and (v) any other entity in which persons described in Clause (i) or (ii) or the Optionee own more than 50% of the voting interests.

(n) "**Grantee**" means a person to whom the Board of Directors has awarded Shares under the Plan.

(o) "**ISO**" means an Option that qualifies as an incentive stock option as described in Code Section 422(b). Notwithstanding its designation as an ISO, an Option that does not qualify as an ISO under applicable law shall be treated for all purposes as an NSO.

(p) "**NSO**" means an Option that does not qualify as an incentive stock option as described in Code Section 422(b) or 423(b).

(q) "**Option**" means an ISO or NSO granted under the Plan and entitling the holder to purchase Shares.

(r) "**Optionee**" means a person who holds an Option.

(s) "**Outside Director**" means a member of the Board of Directors who is not an Employee.

(t) "**Parent**" means any corporation (other than the Company) in an unbroken chain of corporations ending with the Company, if each of the corporations other than the Company owns stock possessing 50% or more of the total combined voting power of all classes of stock in one of the other corporations in such chain. A corporation that attains the status of a Parent on a date after the adoption of the Plan shall be considered a Parent commencing as of such date.

(u) "**Participant**" means a Grantee, Optionee or Purchaser.

(v) "**Plan**" means this Singular Genomics Systems, Inc. 2016 Stock Plan.

(w) "**Purchase Price**" means the consideration for which one Share may be acquired under the Plan (other than upon exercise of an Option), as specified by the Board of Directors.

(x) "**Purchaser**" means a person to whom the Board of Directors has offered the right to purchase Shares under the Plan (other than upon exercise of an Option).

(y) "**Securities Act**" means the Securities Act of 1933, as amended.

(z) "**Service**" means service as an Employee, Outside Director or Consultant.

(aa) "**Share**" means one share of Stock, as adjusted in accordance with Section 8 (if applicable).

(bb) "**Stock**" means the Common Stock of the Company.

(cc) "**Stock Grant Agreement**" means the agreement between the Company and a Grantee who is awarded Shares under the Plan that contains the terms, conditions and restrictions pertaining to the award of such Shares.

(dd) "**Stock Option Agreement**" means the agreement between the Company and an Optionee that contains the terms, conditions and restrictions pertaining to the Optionee's Option.

(ee) "**Stock Purchase Agreement**" means the agreement between the Company and a Purchaser who purchases Shares under the Plan that contains the terms, conditions and restrictions pertaining to the purchase of such Shares.

(ff) "**Subsidiary**" means any corporation (other than the Company) in an unbroken chain of corporations beginning with the Company, if each of the corporations other than the last corporation in the unbroken chain owns stock possessing 50% or more of the total combined voting power of all classes of stock in one of the other corporations in such chain. A corporation that attains the status of a Subsidiary on a date after the adoption of the Plan shall be considered a Subsidiary commencing as of such date.

EXHIBIT A

SCHEDULE OF SHARES RESERVED FOR ISSUANCE UNDER THE PLAN

Date of Board Approval	Date of Stockholder Approval	Number of Shares Added	Cumulative Number of Shares
September 19, 2016	September 19, 2016	NA	1,675,000
June 19, 2017	June 19, 2017	3,224,650	4,899,650
June 27, 2019	June 27, 2019	6,628,647	11,528,297

THE OPTION GRANTED PURSUANT TO THIS AGREEMENT AND THE SHARES ISSUABLE UPON THE EXERCISE THEREOF HAVE NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933, AS AMENDED, AND MAY NOT BE SOLD, PLEDGED, OR OTHERWISE TRANSFERRED WITHOUT AN EFFECTIVE REGISTRATION THEREOF UNDER SUCH ACT OR AN OPINION OF COUNSEL, SATISFACTORY TO THE COMPANY AND ITS COUNSEL, THAT SUCH REGISTRATION IS NOT REQUIRED.

SINGULAR GENOMICS SYSTEMS, INC. 2016 STOCK PLAN:
STOCK OPTION AGREEMENT (INSTALLMENT EXERCISE)

SECTION 1. GRANT OF OPTION.

(a) **Stock Plan and Defined Terms**. This option is granted pursuant to the Plan, a copy of which the Optionee acknowledges having received. The provisions of the Plan are incorporated into this Agreement by this reference. Except as otherwise defined in this Agreement (including without limitation Section 14 hereof), (i) capitalized terms shall have the meaning ascribed to such terms in the Plan and (ii) terms that appear both ***bolded and italicized*** shall have the meaning associated with those terms set forth in the Notice of Stock Option Grant.

(b) **Option**. On the terms and conditions set forth in the Notice of Stock Option Grant and this Agreement, the Company grants to the Optionee the option to purchase at the per share ***Exercise price*** the ***Original quantity*** of Shares set forth in the Notice of Stock Option Grant. The ***Exercise price*** is agreed to be at least 100% of the Fair Market Value per Share on the ***Granted*** date (110% of Fair Market Value if this option is designated as an ISO in the Notice of Stock Option Grant and Section 3(b) of the Plan applies). This option is intended to be an ISO or an NSO, as indicated in the ***Type*** provided in the Notice of Stock Option Grant.

(c) **$100,000 Limitation**. Even if this option is designated as an ISO in the Notice of Stock Option Grant, it shall be deemed to be an NSO to the extent (and only to the extent) required by the $100,000 annual limitation under Section 422(d) of the Code.

SECTION 2. RIGHT TO EXERCISE.

(a) **Exercisability**. Subject to Subsection (b) below and the other conditions set forth in this Agreement, all or part of this option may be exercised prior to its expiration, subject to continuous Service, at the time or times set forth in the vesting schedule set forth under ***Vesting Summary*** in the Notice of Stock Option Grant,[1] subject to earlier expiration pursuant to Section 6 of this Agreement, or if the Company engages in certain corporate transactions as provided in Section 8(b) of the Plan.

(b) **Stockholder Approval**. Any other provision of this Agreement notwithstanding, no portion of this option shall be exercisable at any time prior to the approval of the Plan by the Company's stockholders.

[1] For example, if the vesting schedule set forth in the Notice of Stock Option Grant is stated as ""1/48th monthly, 1 year cliff" then this option may be exercised with respect to the first 12/48th of the Shares subject to this option when the Optionee completes 12 months of continuous Service beginning with the ***Vesting start*** date set forth in the Notice of Stock Option Grant and with respect to an additional 1/48th of the Shares subject to this option when the Optionee completes each month of continuous Service thereafter.

SECTION 3. NO TRANSFER OR ASSIGNMENT OF OPTION.

Except as otherwise provided in this Agreement, this option and the rights and privileges conferred hereby shall not be sold, pledged or otherwise transferred (whether by operation of law or otherwise) and shall not be subject to sale under execution, attachment, levy or similar process.

SECTION 4. EXERCISE PROCEDURES.

(a) **Notice of Exercise**. The Optionee or the Optionee's representative may exercise this option by: (i) signing and delivering written notice to the Company pursuant to Section 12(c) specifying the election to exercise this option, the number of Shares for which it is being exercised and the form of payment and (ii) delivering payment, in a form permissible under Section 5, for the full amount of the Purchase Price (together with any applicable withholding taxes under Subsection (b)). In the event that this option is being exercised by the representative of the Optionee, the notice shall be accompanied by proof (satisfactory to the Company) of the representative's right to exercise this option.

(b) **Withholding Taxes**. In the event that the Company determines that it is required to withhold any tax (including without limitation any income tax, social insurance contributions, payroll tax, payment on account or other tax-related items arising in connection with the Optionee's participation in the Plan and legally applicable to the Optionee (the "**Tax-Related Items**")) as a result of the grant, vesting or exercise of this option, or as a result of the transfer of shares acquired upon exercise of this option, the Optionee, as a condition of this option, shall make arrangements satisfactory to the Company to enable it to satisfy all Tax-Related Items. The Optionee acknowledges that the responsibility for all Tax-Related Items is the Optionee's and may exceed the amount actually withheld by the Company (or its affiliate or agent).

(c) **Issuance of Shares**. After satisfying all requirements for exercise of this option, the Company shall cause to be issued one or more certificates evidencing the Shares for which this option has been exercised. Such Shares shall be registered (i) in the name of the person exercising this option, (ii) in the names of such person and his or her spouse as community property or as joint tenants with the right of survivorship or (iii) with the Company's consent, in the name of a revocable trust. Until the issuance of the Shares has been entered into the books and records of the Company or a duly authorized transfer agent of the Company, no right to vote, receive dividends or any other right as a stockholder will exist with respect to such Shares. The Company shall cause such certificates to be delivered to or upon the order of the person exercising this option.

SECTION 5. PAYMENT FOR STOCK.

(a) **Cash**. All or part of the Purchase Price may be paid in cash or cash equivalents.

(b) **Surrender of Stock**. At the discretion of the Board of Directors, all or any part of the Purchase Price may be paid by surrendering, or attesting to the ownership of, Shares that are already owned by the Optionee. Such Shares shall be surrendered to the Company in good form for transfer and shall be valued at their Fair Market Value as of the date when this option is exercised.

(c) **Exercise/Sale**. All or part of the Purchase Price and any withholding taxes may be paid by the delivery (on a form prescribed by the Company) of an irrevocable direction to a securities broker approved by the Company to sell Shares and to deliver all or part of the sales

proceeds to the Company. However, payment pursuant to this Subsection (c) shall be permitted only if (i) Stock then is publicly traded and (ii) such payment does not violate applicable law.

SECTION 6. TERM AND EXPIRATION.

(a) **Basic Term**. This option shall in any event expire on the ***Expiration of option grant*** date set forth in the Notice of Stock Option Grant, which date is 10 years after the ***Granted*** date (five years after the ***Granted*** date if this option is designated as an ISO and Section 3(b) of the Plan applies).

(b) **Termination of Service (Except by Death)**. If the Optionee's Service terminates for any reason other than death, then this option shall expire on the earliest of the following occasions:

(i) The expiration date determined pursuant to Subsection (a) above;

(ii) The date which is the number of months set forth in ***Voluntary termination*** after the termination of the Optionee's Service by reason of voluntary termination;

(iii) The date which is the number of months set forth in ***Involuntary termination*** after the termination of the Optionee's Service by reason of involuntary termination;

(iv) The date which is the number of months set forth in ***Termination with cause*** after the termination of the Optionee's Service by reason of termination with cause;

(v) The date which is the number of months set forth in ***Retirement*** after the termination of the Optionee's Service by reason of retirement; or

(vi) The date which is the number of months set forth in ***Disability*** after the termination of the Optionee's Service by reason of Disability.

The Optionee may exercise all or part of this option at any time before its expiration under the preceding sentence, but only to the extent that this option had become exercisable before the Optionee's Service terminated. When the Optionee's Service terminates, this option shall expire immediately with respect to the number of Shares for which this option is not yet exercisable. In the event that the Optionee dies after termination of Service but before the expiration of this option, all or part of this option may be exercised (prior to expiration) by the executors or administrators of the Optionee's estate or by any person who has acquired this option directly from the Optionee by beneficiary designation, bequest or inheritance, but only to the extent that this option had become exercisable before the Optionee's Service terminated. Once this option (or portion thereof) has terminated, the Optionee shall have no further rights with respect to the option (or portion thereof) or to the underlying Shares.

(c) **Death of the Optionee**. If the Optionee dies while in Service, then this option shall expire on the earlier of the following dates:

(i) The expiration date determined pursuant to Subsection (a)

above; or

(ii) The date which is the number of months set forth in ***Death*** after the Optionee's death.

All or part of this option may be exercised at any time before its expiration under the preceding sentence by the executors or administrators of the Optionee's estate or by any person who has acquired this option directly from the Optionee by beneficiary designation, bequest or inheritance, but only to the extent that this option had become exercisable before the Optionee's death. When the Optionee dies, this option shall expire immediately with respect to the number of Shares for which this option is not yet exercisable. Once this option (or portion thereof) has terminated, the Optionee shall have no further rights with respect to the option (or portion thereof) or to the underlying Shares.

(d) **Extension of Post-Termination Exercise Periods**. Following the date on which the Company's Stock is first listed for trading on an established securities market, if during any part of the exercise period described in Subsections (b)(ii) through (vi) or Subsection (c)(ii) above the exercise of this option would be prohibited solely because the issuance of Shares upon such exercise would violate the registration requirements under the Securities Act or a similar provision of other applicable law, then instead of terminating at the end of such prescribed period, the then-vested portion of this option will instead remain outstanding and not expire until the earlier of (i) the expiration date determined pursuant to Section 6(a) above or (ii) the date on which the then-vested portion of this option has been exercisable without violation of applicable law for the aggregate period (which need not be consecutive) after termination of the Optionee's Service specified in the applicable Subsection above.

(e) **Part-Time Employment and Leaves of Absence**. If the Optionee commences working on a part-time basis, then the Company may adjust the vesting schedule set forth under ***Vesting Summary***. If the Optionee goes on a leave of absence, then the Company may adjust the vesting schedule set forth in the vesting schedule set forth under ***Vesting Summary*** in accordance with the Company's leave of absence policy or the terms of such leave. Except as provided in the preceding sentence, Service shall be deemed to continue for any purpose under this Agreement while the Optionee is on a *bona fide* leave of absence, if (i) such leave was approved by the Company in writing and (ii) continued crediting of Service for such purpose is expressly required by the terms of such leave or by applicable law (as determined by the Company). Service shall be deemed to terminate when such leave ends, unless the Optionee immediately returns to active work.

(f) **Notice Concerning ISO Treatment**. Even if this option is designated as an ISO in the Notice of Stock Option Grant, it ceases to qualify for favorable tax treatment as an ISO to the extent that it is exercised:

(i) More than three months after the date when the Optionee ceases to be an Employee for any reason other than death or permanent and total disability (as defined in Section 22(e)(3) of the Code);

(ii) More than 12 months after the date when the Optionee ceases to be an Employee by reason of permanent and total disability (as defined in Section 22(e)(3) of the Code); or

(iii) More than three months after the date when the Optionee has been on a leave of absence for three months, unless the Optionee's reemployment rights following such leave were guaranteed by statute or by contract.

SECTION 7. RIGHT OF FIRST REFUSAL.

(a) **Right of First Refusal**. In the event that the Optionee proposes to sell, pledge or otherwise transfer to a third party any Shares acquired under this Agreement, or any interest in such Shares, the Company shall have the Right of First Refusal with respect to all (and not less than all) of such Shares. If the Optionee desires to transfer Shares acquired under this Agreement, the Optionee shall give a written Transfer Notice to the Company describing fully the proposed transfer, including the number of Shares proposed to be transferred, the proposed transfer price, the name and address of the proposed Transferee and proof satisfactory to the Company that the proposed sale or transfer will not violate any applicable federal, State or foreign securities laws. The Transfer Notice shall be signed both by the Optionee and by the proposed Transferee and must constitute a binding commitment of both parties to the transfer of the Shares. The Company shall have the right to purchase all, and not less than all, of the Shares on the terms of the proposal described in the Transfer Notice (subject, however, to any change in such terms permitted under Subsection (b) below) by delivery of a notice of exercise of the Right of First Refusal within 30 days after the date when the Transfer Notice was received by the Company.

(b) **Transfer of Shares**. If the Company fails to exercise its Right of First Refusal within 30 days after the date when it received the Transfer Notice, the Optionee may, not later than 90 days following receipt of the Transfer Notice by the Company, conclude a transfer of the Shares subject to the Transfer Notice on the terms and conditions described in the Transfer Notice, provided that any such sale is made in compliance with applicable federal, State and foreign securities laws and not in violation of any other contractual restrictions to which the Optionee is bound. Any proposed transfer on terms and conditions different from those described in the Transfer Notice, as well as any subsequent proposed transfer by the Optionee, shall again be subject to the Right of First Refusal and shall require compliance with the procedure described in Subsection (a) above. If the Company exercises its Right of First Refusal, the parties shall consummate the sale of the Shares on the terms set forth in the Transfer Notice within 60 days after the date when the Company received the Transfer Notice (or within such longer period as may have been specified in the Transfer Notice); provided, however, that in the event the Transfer Notice provided that payment for the Shares was to be made in a form other than cash or cash equivalents paid at the time of transfer, the Company shall have the option of paying for the Shares with cash or cash equivalents equal to the present value of the consideration described in the Transfer Notice.

(c) **Additional or Exchanged Securities and Property**. In the event of a merger or consolidation of the Company, a sale of all or substantially all of the Company's stock or assets, any other corporate reorganization, a stock split, the declaration of a stock dividend, the declaration of an extraordinary dividend payable in a form other than stock, a spin-off, an adjustment in conversion ratio, a recapitalization or a similar transaction affecting the Company's outstanding securities, any securities or other property (including cash or cash equivalents) that are by reason of such transaction exchanged for, or distributed with respect to, any Shares subject to this Section 7 shall immediately be subject to the Right of First Refusal. Appropriate adjustments to reflect the exchange or distribution of such securities or property shall be made to the number and/or class of the Shares subject to this Section 7.

(d) **Termination of Right of First Refusal**. Any other provision of this Section 7 notwithstanding, in the event that the Stock is readily tradable on an established securities market when the Optionee desires to transfer Shares, the Company shall have no Right of First Refusal, and the Optionee shall have no obligation to comply with the procedures prescribed by Subsections (a) and (b) above.

(e) **Permitted Transfers**. This Section 7 shall not apply to (i) a transfer by beneficiary designation, will or intestate succession or (ii) a transfer to one or more members of the Optionee's Immediate Family or to a trust established by the Optionee for the benefit of the Optionee and/or one or more members of the Optionee's Immediate Family, provided in either case that the Transferee agrees in writing on a form prescribed by the Company to be bound by all provisions of this Agreement. If the Optionee transfers any Shares acquired under this Agreement, either under this Subsection (e) or after the Company has failed to exercise the Right of First Refusal, then this Agreement shall apply to the Transferee to the same extent as to the Optionee.

(f) **Termination of Rights as Stockholder**. If the Company makes available, at the time and place and in the amount and form provided in this Agreement, the consideration for the Shares to be purchased in accordance with this Section 7, then after such time the person from whom such Shares are to be purchased shall no longer have any rights as a holder of such Shares (other than the right to receive payment of such consideration in accordance with this Agreement). Such Shares shall be deemed to have been purchased in accordance with the applicable provisions hereof, whether or not the certificate(s) therefor have been delivered as required by this Agreement.

(g) **Assignment of Right of First Refusal**. The Board of Directors may freely assign the Company's Right of First Refusal, in whole or in part. Any person who accepts an assignment of the Right of First Refusal from the Company shall assume all of the Company's rights and obligations under this Section 7.

SECTION 8. LEGALITY OF INITIAL ISSUANCE.

No Shares shall be issued upon the exercise of this option unless and until the Company has determined that:

(a) It and the Optionee have taken any actions required to register the Shares under the Securities Act or to perfect an exemption from the registration requirements thereof;

(b) Any applicable listing requirement of any stock exchange or other securities market on which Stock is listed has been satisfied; and

(c) Any other applicable provision of federal, State or foreign law has been satisfied.

SECTION 9. NO REGISTRATION RIGHTS.

The Company may, but shall not be obligated to, register or qualify the sale of Shares under the Securities Act or any other applicable law. The Company shall not be obligated to take any affirmative action in order to cause the sale of Shares under this Agreement to comply with any law.

SECTION 10. RESTRICTIONS ON TRANSFER OF SHARES.

(a) **Securities Law Restrictions**. Regardless of whether the offer and sale of Shares under the Plan have been registered under the Securities Act or have been registered or qualified under the securities laws of any State or other relevant jurisdiction, the Company at its discretion may impose restrictions upon the sale, pledge or other transfer of such Shares (including the placement of appropriate legends on the stock certificates (or electronic equivalent) or the imposition of stop-transfer instructions) and may refuse (or may be required to refuse) to transfer Shares acquired hereunder (or Shares proposed to be transferred in a subsequent transfer) if, in the

judgment of the Company, such restrictions, legends or refusal are necessary or appropriate to achieve compliance with the Securities Act or other relevant securities or other laws, including without limitation under Regulation S of the Securities Act or pursuant to another available exemption from registration.

(b) **Market Stand-Off**. In connection with any underwritten public offering by the Company of its equity securities pursuant to an effective registration statement filed under the Securities Act, including the Company's initial public offering, the Optionee or a Transferee shall not directly or indirectly sell, make any short sale of, loan, hypothecate, pledge, offer, grant or sell any option or other contract for the purchase of, purchase any option or other contract for the sale of, or otherwise dispose of or transfer, or agree to engage in any of the foregoing transactions with respect to, any Shares acquired under this Agreement without the prior written consent of the Company or its managing underwriter. Such restriction (the "**Market Stand-Off**") shall be in effect for such period of time following the date of the final prospectus for the offering as may be requested by the Company or such underwriter. In no event, however, shall such period exceed 180 days plus such additional period as may reasonably be requested by the Company or such underwriter to accommodate regulatory restrictions on (i) the publication or other distribution of research reports or (ii) analyst recommendations and opinions, including (without limitation) the restrictions set forth in Rule 2711(f)(4) of the National Association of Securities Dealers and Rule 472(f)(4) of the New York Stock Exchange, as amended, or any similar successor rules. The Market Stand-Off shall in any event terminate two years after the date of the Company's initial public offering. In the event of the declaration of a stock dividend, a spin-off, a stock split, an adjustment in conversion ratio, a recapitalization or a similar transaction affecting the Company's outstanding securities without receipt of consideration, any new, substituted or additional securities which are by reason of such transaction distributed with respect to any Shares subject to the Market Stand-Off, or into which such Shares thereby become convertible, shall immediately be subject to the Market Stand-Off. In order to enforce the Market Stand-Off, the Company may impose stop-transfer instructions with respect to the Shares acquired under this Agreement until the end of the applicable stand-off period. The Company's underwriters shall be beneficiaries of the agreement set forth in this Subsection (b). This Subsection (b) shall not apply to Shares registered in the public offering under the Securities Act.

(c) **Investment Intent at Grant**. The Optionee represents and agrees that the Shares to be acquired upon exercising this option will be acquired for investment, and not with a view to the sale or distribution thereof.

(d) **Investment Intent at Exercise**. In the event that the sale of Shares under the Plan is not registered under the Securities Act but an exemption is available that requires an investment representation or other representation, the Optionee shall represent and agree at the time of exercise that the Shares being acquired upon exercising this option are being acquired for investment, and not with a view to the sale or distribution thereof, and shall make such other representations as are deemed necessary or appropriate by the Company and its counsel, including (if applicable because the Company is relying on Regulation S under the Securities Act) that as of the date of exercise the Optionee is (i) not a U.S. Person; (ii) not acquiring the Shares on behalf, or for the account or benefit, of a U.S. Person; and (iii) is not exercising the option in the United States.

(e) **Legends**. All certificates evidencing Shares purchased under this Agreement shall bear the following legend:

"THE SHARES REPRESENTED HEREBY MAY NOT BE SOLD, ASSIGNED,

TRANSFERRED, ENCUMBERED OR IN ANY MANNER DISPOSED OF, EXCEPT IN COMPLIANCE WITH THE TERMS OF A WRITTEN AGREEMENT BETWEEN THE COMPANY AND THE REGISTERED HOLDER OF THE SHARES (OR THE PREDECESSOR IN INTEREST TO THE SHARES). SUCH AGREEMENT GRANTS TO THE COMPANY CERTAIN RIGHTS OF FIRST REFUSAL UPON AN ATTEMPTED TRANSFER OF THE SHARES. IN ADDITION, THE SHARES ARE SUBJECT TO RESTRICTIONS ON TRANSFER FOR A LIMITED PERIOD FOLLOWING THE EFFECTIVE DATE OF THE UNDERWRITTEN PUBLIC OFFERING OF THE COMPANY'S SECURITIES AND MAY NOT BE SOLD OR OTHERWISE DISPOSED OF BY THE HOLDER WITHOUT THE CONSENT OF THE COMPANY OR THE MANAGING UNDERWRITER. THE SECRETARY OF THE COMPANY WILL UPON WRITTEN REQUEST FURNISH A COPY OF SUCH AGREEMENT TO THE HOLDER HEREOF WITHOUT CHARGE."

All certificates evidencing Shares purchased under this Agreement in an unregistered transaction shall bear the following legend (and such other restrictive legends as are required or deemed advisable under the provisions of any applicable law):

"THE SHARES REPRESENTED HEREBY HAVE NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933, AS AMENDED (THE "ACT") OR ANY SECURITIES LAWS OF ANY U.S. STATE, AND MAY NOT BE SOLD, REOFFERED, PLEDGED, ASSIGNED, ENCUMBERED OR OTHERWISE TRANSFERRED OR DISPOSED WITHOUT AN EFFECTIVE REGISTRATION THEREOF UNDER SUCH ACT OR AN OPINION OF COUNSEL, SATISFACTORY TO THE COMPANY AND ITS COUNSEL, THAT SUCH REGISTRATION IS NOT REQUIRED. IN THE ABSENCE OF REGISTRATION OR THE AVAILABILITY (CONFIRMED BY OPINION OF COUNSEL) OF AN ALTERNATIVE EXEMPTION FROM REGISTRATION UNDER THE ACT (INCLUDING WITHOUT LIMITATION IN ACCORDANCE WITH REGULATION S UNDER THE ACT), THESE SHARES MAY NOT BE SOLD, REOFFERED, PLEDGED, ASSIGNED, ENCUMBERED OR OTHERWISE TRANSFERRED OR DISPOSED OF. HEDGING TRANSACTIONS INVOLVING THESE SHARES MAY NOT BE CONDUCTED UNLESS IN COMPLIANCE WITH THE ACT."

(f) **Removal of Legends**. If, in the opinion of the Company and its counsel, any legend placed on a stock certificate representing Shares sold under this Agreement is no longer required, the holder of such certificate shall be entitled to exchange such certificate for a certificate representing the same number of Shares but without such legend.

(g) **Administration**. Any determination by the Company and its counsel in connection with any of the matters set forth in this Section 10 shall be conclusive and binding on the Optionee and all other persons.

SECTION 11. ADJUSTMENT OF SHARES.

In the event of any transaction described in Section 8(a) of the Plan, the terms of this option (including, without limitation, the number and kind of Shares subject to this option and the Exercise Price) shall be adjusted as set forth in Section 8(a) of the Plan. In the event that the Company is a party to a merger or consolidation or in the event of a sale of all or substantially all

of the Company's stock or assets, this option shall be subject to the treatment provided by the Board of Directors in its sole discretion, as provided in Section 8(b) of the Plan.

SECTION 12. MISCELLANEOUS PROVISIONS.

(a) **Rights as a Stockholder**. Neither the Optionee nor the Optionee's representative shall have any rights as a stockholder with respect to any Shares subject to this option until the Optionee or the Optionee's representative becomes entitled to receive such Shares by filing a notice of exercise and paying the Purchase Price pursuant to Sections 4 and 5.

(b) **No Retention Rights**. Nothing in this option or in the Plan shall confer upon the Optionee any right to continue in Service for any period of specific duration or interfere with or otherwise restrict in any way the rights of the Company (or any Parent or Subsidiary employing or retaining the Optionee) or of the Optionee, which rights are hereby expressly reserved by each, to terminate his or her Service at any time and for any reason, with or without cause.

(c) **Notice**. Any notice required by the terms of this Agreement shall be given in writing. It shall be deemed effective upon (i) personal delivery, (ii) deposit with the United States Postal Service, by registered or certified mail, with postage and fees prepaid, (iii) deposit with Federal Express Corporation, with shipping charges prepaid or (iv) deposit with any internationally recognized express mail courier service. Notice shall be addressed to the Company at its principal executive office and to the Optionee at the address that he or she most recently provided to the Company in accordance with this Subsection (c).

(d) **Modifications and Waivers**. No provision of this Agreement shall be modified, waived or discharged unless the modification, waiver or discharge is agreed to in writing and signed by the Optionee and by an authorized officer of the Company (other than the Optionee). No waiver by either party of any breach of, or of compliance with, any condition or provision of this Agreement by the other party shall be considered a waiver of any other condition or provision or of the same condition or provision at another time.

(e) **Entire Agreement**. The Notice of Stock Option Grant, this Agreement and the Plan constitute the entire contract between the parties hereto with regard to the subject matter hereof. They supersede any other agreements, representations or understandings (whether oral or written and whether express or implied) that relate to the subject matter hereof.

(f) **Choice of Law**. This Agreement shall be governed by, and construed in accordance with, the laws of the State of Delaware, as such laws are applied to contracts entered into and performed in such State.

SECTION 13. ACKNOWLEDGEMENTS OF THE OPTIONEE.

In addition to the other terms, conditions and restrictions imposed on this option and the Shares issuable under this option pursuant to this Agreement and the Plan, the Optionee expressly acknowledges being subject to Sections 7 (Right of First Refusal), 8 (Legality of Initial Issuance) and 10 (Restrictions on Transfer of Shares, including without limitation the Market Stand-Off), as well as the following provisions:

(a) **Tax Consequences (No Liability for Discounted Options)**. The Optionee agrees that the Company does not have a duty to design or administer the Plan or its other compensation programs in a manner that minimizes the Optionee's tax liabilities. The Optionee

shall not make any claim against the Company or its Board of Directors, officers or employees related to tax liabilities arising from this option or the Optionee's other compensation. In particular, any Optionee subject to U.S. taxation acknowledges that this option is exempt from Section 409A of the Code only if the ***Exercise price*** is at least equal to the Fair Market Value per Share on the ***Granted*** date. Since Shares are not traded on an established securities market, the determination of their Fair Market Value is made by the Board of Directors or by an independent valuation firm retained by the Company. The Optionee acknowledges that there is no guarantee in either case that the Internal Revenue Service will agree with the valuation, and the Optionee shall not make any claim against the Company or its Board of Directors, officers or employees in the event that the Internal Revenue Service asserts that the valuation was too low.

(b) **Electronic Delivery of Documents**. The Optionee agrees to accept by email all documents relating to the Company, the Plan or this option and all other documents that the Company is required to deliver to its security holders (including, without limitation, disclosures that may be required by the Securities and Exchange Commission). The Optionee also agrees that the Company may deliver these documents by posting them on a website maintained by the Company or by a third party under contract with the Company. If the Company posts these documents on a website, it shall notify the Optionee by email of their availability. The Optionee acknowledges that he or she may incur costs in connection with electronic delivery, including the cost of accessing the internet and printing fees, and that an interruption of internet access may interfere with his or her ability to access the documents. This consent shall remain in effect until this option expires or until the Optionee gives the Company written notice that it should deliver paper documents.

(c) **No Notice of Expiration Date**. The Optionee agrees that the Company and its officers, employees, attorneys and agents do not have any obligation to notify him or her prior to the expiration of this option pursuant to Section 6, regardless of whether this option will expire at the end of its full term or on an earlier date related to the termination of the Optionee's Service. The Optionee further agrees that he or she has the sole responsibility for monitoring the expiration of this option and for exercising this option, if at all, before it expires. This Subsection (c) shall supersede any contrary representation that may have been made, orally or in writing, by the Company or by an officer, employee, attorney or agent of the Company.

(d) **Waiver of Statutory Information Rights**. The Optionee acknowledges and agrees that, upon exercise of this option and until the first sale of the Company's Stock to the general public pursuant to a registration statement filed under the Securities Act, he or she will be deemed to have waived any rights the Optionee might otherwise have had under Section 220 of the Delaware General Corporation Law (or under similar rights under other applicable law) to inspect for any proper purpose and to make copies and extracts from the Company's stock ledger, a list of its stockholders and its other books and records or the books and records of any subsidiary. This waiver applies only in the Optionee's capacity as a stockholder and does not affect any other inspection rights the Optionee may have under other law or pursuant to a written agreement with the Company.

(e) **Plan Discretionary**. The Optionee understands and acknowledges that (i) the Plan is entirely discretionary, (ii) the Company and the Optionee's employer have reserved the right to amend, suspend or terminate the Plan at any time, (iii) the grant of an option does not in any way create any contractual or other right to receive additional grants of options (or benefits in lieu of options) at any time or in any amount and (iv) all determinations with respect to any additional grants, including (without limitation) the times when options will be granted, the number

of Shares offered, the ***Exercise price*** and the vesting schedule, will be at the sole discretion of the Company.

(f) **Termination of Service**. The Optionee understands and acknowledges that participation in the Plan ceases upon termination of his or her Service for any reason, except as may explicitly be provided otherwise in the Plan or this Agreement.

(g) **Extraordinary Compensation**. The value of this option shall be an extraordinary item of compensation outside the scope of the Optionee's employment contract, if any, and shall not be considered a part of his or her normal or expected compensation for purposes of calculating severance, resignation, redundancy or end-of-service payments, bonuses, long-service awards, pension or retirement benefits or similar payments.

(h) **Authorization to Disclose**. The Optionee hereby authorizes and directs the Optionee's employer to disclose to the Company or any Subsidiary any information regarding the Optionee's employment, the nature and amount of the Optionee's compensation and the fact and conditions of the Optionee's participation in the Plan, as the Optionee's employer deems necessary or appropriate to facilitate the administration of the Plan.

(i) **Personal Data Authorization**. The Optionee consents to the collection, use and transfer of personal data as described in this Subsection (i). The Optionee understands and acknowledges that the Company, the Optionee's employer and the Company's other Subsidiaries hold certain personal information regarding the Optionee for the purpose of managing and administering the Plan, including (without limitation) the Optionee's name, home address, telephone number, date of birth, social insurance number, salary, nationality, job title, any Shares or directorships held in the Company and details of all options or any other entitlements to Shares awarded, canceled, exercised, vested, unvested or outstanding in the Optionee's favor (the "**Data**"). The Optionee further understands and acknowledges that the Company and/or its Subsidiaries will transfer Data among themselves as necessary for the purpose of implementation, administration and management of the Optionee's participation in the Plan and that the Company and/or any Subsidiary may each further transfer Data to any third party assisting the Company in the implementation, administration and management of the Plan. The Optionee understands and acknowledges that the recipients of Data may be located in the United States or elsewhere. The Optionee authorizes such recipients to receive, possess, use, retain and transfer Data, in electronic or other form, for the purpose of administering the Optionee's participation in the Plan, including a transfer to any broker or other third party with whom the Optionee elects to deposit Shares acquired under the Plan of such Data as may be required for the administration of the Plan and/or the subsequent holding of Shares on the Optionee's behalf. The Optionee may, at any time, view the Data, require any necessary modifications of Data or withdraw the consents set forth in this Subsection (i) by contacting the Company in writing.

SECTION 14. DEFINITIONS.

(a) "**Agreement**" shall mean this Stock Option Agreement.

(b) "**Board of Directors**" shall mean the Board of Directors of the Company, as constituted from time to time or, if a Committee has been appointed, such Committee.

(c) "**Company**" shall mean Singular Genomics Systems, Inc., a Delaware corporation.

(d) "**Immediate Family**" shall mean any child, stepchild, grandchild, parent, stepparent, grandparent, spouse, sibling, mother-in-law, father-in-law, son-in-law, daughter-in- law, brother-in-law or sister-in-law and shall include adoptive relationships.

(e) **"Notice of Stock Option Grant"** shall mean the Grant Summary delivered to the Optionee online at https://esharesinc.com by the Company's transfer agent eShares, Inc. (pursuant to which this Agreement is also delivered).

(f) "**Optionee**" shall mean the person named in the Notice of Stock Option Grant as ***Option grant holder***.

(g) "**Plan**" shall mean the Singular Genomics Systems, Inc. 2016 Stock Plan, as in effect on the ***Granted*** date.

(h) "**Purchase Price**" shall mean the ***Exercise price*** multiplied by the number of Shares with respect to which this option is being exercised.

(i) "**Right of First Refusal**" shall mean the Company's right of first refusal described in Section 7.

(j) "**Service**" means service as an Employee, Outside Director or Consultant.

(k) "**Transferee**" shall mean any person to whom the Optionee has directly or indirectly transferred any Share acquired under this Agreement.

(l) "**Transfer Notice**" shall mean the notice of a proposed transfer of Shares described in Section 7.

(m) "**U.S. Person**" shall mean a person described in Rule 902(k) of Regulation S of the Securities Act (or any successor rule or provision), which generally defines a U.S. person as any natural person resident in the United States, any estate of which any executor or administrator is a U.S. Person, or any trust of which of any trustee is a U.S. Person.

THE OPTION GRANTED PURSUANT TO THIS AGREEMENT AND THE SHARES ISSUABLE UPON THE EXERCISE THEREOF HAVE NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933, AS AMENDED, AND MAY NOT BE SOLD, PLEDGED, OR OTHERWISE TRANSFERRED WITHOUT AN EFFECTIVE REGISTRATION THEREOF UNDER SUCH ACT OR AN OPINION OF COUNSEL, SATISFACTORY TO THE COMPANY AND ITS COUNSEL, THAT SUCH REGISTRATION IS NOT REQUIRED.

SINGULAR GENOMICS SYSTEMS, INC. 2016 STOCK PLAN:
STOCK OPTION AGREEMENT (EARLY EXERCISE)

SECTION 1. GRANT OF OPTION.

(a) **Stock Plan and Defined Terms**. This option is granted pursuant to the Plan, a copy of which the Optionee acknowledges having received. The provisions of the Plan are incorporated into this Agreement by this reference. Except as otherwise defined in this Agreement (including without limitation Section 15 hereof), (i) capitalized terms shall have the meaning ascribed to such terms in the Plan and (ii) terms that appear both ***bolded and italicized*** shall have the meaning associated with those terms set forth in the Notice of Stock Option Grant.

(b) **Option**. On the terms and conditions set forth in the Notice of Stock Option Grant and this Agreement, the Company grants to the Optionee the option to purchase at the per share ***Exercise price*** the ***Original quantity*** of Shares set forth in the Notice of Stock Option Grant. The ***Exercise price*** is agreed to be at least 100% of the Fair Market Value per Share on the ***Granted*** date (110% of Fair Market Value if this option is designated as an ISO in the Notice of Stock Option Grant and Section 3(b) of the Plan applies). This option is intended to be an ISO or an NSO, as indicated in the ***Type*** provided in the Notice of Stock Option Grant.

(c) **$100,000 Limitation**. Even if this option is designated as an ISO in the Notice of Stock Option Grant, it shall be deemed to be an NSO to the extent (and only to the extent) required by the $100,000 annual limitation under Section 422(d) of the Code.

SECTION 2. RIGHT TO EXERCISE.

(a) **Exercisability**. Subject to Subsection (b) below and the other conditions set forth in this Agreement, all or part of this option may be exercised prior to its expiration, subject to continuous Service, at the time or times set forth in the vesting schedule set forth under ***Vesting Summary***[1] in the Notice of Stock Option Grant, subject to earlier expiration pursuant to Section 6 of this Agreement, or if the Company engages in certain corporate transactions as

[1] For example, if the Vesting Summary set forth in the Notice of Stock Option Grant states "1/48th monthly, 1 year cliff" then the Right of Repurchase shall lapse with respect to the first 12/48th of the Shares subject to this option when the Optionee completes 12 months of continuous Service beginning with the ***Vesting start*** date set forth in the Notice of Stock Option Grant and with respect to an additional 1/48th of the Shares subject to this option when the Optionee completes each month of continuous Service thereafter.

provided in Section 8(b) of the Plan. Shares purchased by exercising this option may be subject to the Right of Repurchase under Section 7.

(b) **Stockholder Approval**. Any other provision of this Agreement notwithstanding, no portion of this option shall be exercisable at any time prior to the approval of the Plan by the Company's stockholders.

SECTION 3. NO TRANSFER OR ASSIGNMENT OF OPTION.

Except as otherwise provided in this Agreement, this option and the rights and privileges conferred hereby shall not be sold, pledged or otherwise transferred (whether by operation of law or otherwise) and shall not be subject to sale under execution, attachment, levy or similar process.

SECTION 4. EXERCISE PROCEDURES.

(a) **Notice of Exercise**. The Optionee or the Optionee's representative may exercise this option by: (i) signing and delivering written notice to the Company pursuant to Section 13(c) specifying the election to exercise this option, the number of Shares for which it is being exercised and the form of payment and (ii) delivering payment, in a form permissible under Section 5, for the full amount of the Purchase Price (together with any applicable withholding taxes under Subsection (b)). In the event that this option is being exercised by the representative of the Optionee, the notice shall be accompanied by proof (satisfactory to the Company) of the representative's right to exercise this option. In the event of a partial exercise of this option, Shares shall be deemed to have been purchased in the order in which they vest in accordance with the Notice of Stock Option Grant.

(b) **Withholding Taxes**. In the event that the Company determines that it is required to withhold any tax (including without limitation any income tax, social insurance contributions, payroll tax, payment on account or other tax-related items arising in connection with the Optionee's participation in the Plan and legally applicable to the Optionee (the "**Tax-Related Items**")) as a result of the grant, vesting or exercise of this option, or as a result of the vesting or transfer of shares acquired upon exercise of this option, the Optionee, as a condition of this option, shall make arrangements satisfactory to the Company to enable it to satisfy all Tax-Related Items. The Optionee acknowledges that the responsibility for all Tax-Related Items is the Optionee's and may exceed the amount actually withheld by the Company (or its affiliate or agent).

(c) **Issuance of Shares**. After satisfying all requirements for exercise of this option, the Company shall cause to be issued one or more certificates evidencing the Shares for which this option has been exercised. Such Shares shall be registered (i) in the name of the person exercising this option, (ii) in the names of such person and his or her spouse as community property or as joint tenants with the right of survivorship or (iii) with the Company's consent, in the name of a revocable trust. Until the issuance of the Shares has been entered into the books and records of the Company or a duly authorized transfer agent of the Company, no right to vote, receive dividends or any other right as a stockholder will exist with respect to such Shares. In the case of Restricted Shares, the Company shall cause such certificates to be

deposited in escrow under Section 7(c). In the case of other Shares, the Company shall cause such certificates to be delivered to or upon the order of the person exercising this option.

SECTION 5. PAYMENT FOR STOCK.

(a) **Cash**. All or part of the Purchase Price may be paid in cash or cash equivalents.

(b) **Surrender of Stock**. At the discretion of the Board of Directors, all or any part of the Purchase Price may be paid by surrendering, or attesting to the ownership of, Shares that are already owned by the Optionee. Such Shares shall be surrendered to the Company in good form for transfer and shall be valued at their Fair Market Value as of the date when this option is exercised.

(c) **Exercise/Sale**. All or part of the Purchase Price and any withholding taxes may be paid by the delivery (on a form prescribed by the Company) of an irrevocable direction to a securities broker approved by the Company to sell Shares and to deliver all or part of the sales proceeds to the Company. However, payment pursuant to this Subsection (c) shall be permitted only if (i) Stock then is publicly traded and (ii) such payment does not violate applicable law.

SECTION 6. TERM AND EXPIRATION.

(a) **Basic Term**. This option shall in any event expire on the ***Expiration of option grant*** date set forth in the Notice of Stock Option Grant, which date is 10 years after the ***Granted*** date (five years after the ***Granted*** date if this option is designated as an ISO and Section 3(b) of the Plan applies).

(b) **Termination of Service (Except by Death)**. If the Optionee's Service terminates for any reason other than death, then this option shall expire on the earliest of the following occasions:

(i) The expiration date determined pursuant to Subsection (a) above;

(ii) The date which is the number of months set forth in ***Voluntary termination*** after the termination of the Optionee's Service by reason of voluntary termination;

(iii) The date which is the number of months set forth in ***Involuntary termination*** after the termination of the Optionee's Service by reason of involuntary termination;

(iv) The date which is the number of months set forth in ***Termination with cause*** after the termination of the Optionee's Service by reason of termination with cause;

(v) The date which is the number of months set forth in ***Retirement*** after the termination of the Optionee's Service by reason of retirement; or

(vi) The date which is the number of months set forth in ***Disability*** after the termination of the Optionee's Service by reason of Disability.

The Optionee may exercise all or part of this option at any time before its expiration under the preceding sentence, but only to the extent that this option is exercisable for vested Shares on or before the date when the Optionee's Service terminates. When the Optionee's Service terminates, this option shall expire immediately with respect to the number of Shares for which this option is not yet exercisable and with respect to any Restricted Shares. In the event that the Optionee dies after termination of Service but before the expiration of this option, all or part of this option may be exercised (prior to expiration) by the executors or administrators of the Optionee's estate or by any person who has acquired this option directly from the Optionee by beneficiary designation, bequest or inheritance, but only to the extent that this option was exercisable for vested Shares on or before the date when the Optionee's Service terminated. Once this option (or portion thereof) has terminated, the Optionee shall have no further rights with respect to the option (or portion thereof) or to the underlying Shares.

(c) **Death of the Optionee**. If the Optionee dies while in Service, then this option shall expire on the earlier of the following dates:

(i) The expiration date determined pursuant to Subsection (a) above; or

(ii) The date which is the number of months set forth in ***Death*** after the Optionee's death.

All or part of this option may be exercised at any time before its expiration under the preceding sentence by the executors or administrators of the Optionee's estate or by any person who has acquired this option directly from the Optionee by beneficiary designation, bequest or inheritance, but only to the extent that this option is exercisable for vested Shares on or before the date of the Optionee's death. When the Optionee dies, this option shall expire immediately with respect to the number of Shares for which this option is not yet exercisable and with respect to any Restricted Shares. Once this option (or portion thereof) has terminated, the Optionee shall have no further rights with respect to the option (or portion thereof) or to the underlying Shares.

(d) **Extension of Post-Termination Exercise Periods**. Following the date on which the Company's Stock is first listed for trading on an established securities market, if during any part of the exercise period described in Subsections (b)(ii) through (vi) or Subsection (c)(ii) above the exercise of this option would be prohibited solely because the issuance of Shares upon such exercise would violate the registration requirements under the Securities Act or a similar provision of other applicable law, then instead of terminating at the end of such prescribed period, the then-vested portion of this option will instead remain outstanding and not expire until the earlier of (i) the expiration date determined pursuant to Section 6(a) above or (ii) the date on which the then-vested portion of this option has been exercisable without violation of

applicable law for the aggregate period (which need not be consecutive) after termination of the Optionee's Service specified in the applicable Subsection above.

(e) **Part-Time Employment and Leaves of Absence**. If the Optionee commences working on a part-time basis, then the Company may adjust the vesting schedule set forth under ***Vesting Summary***. If the Optionee goes on a leave of absence, then the Company may adjust the vesting schedule set forth in the vesting schedule set forth under ***Vesting Summary*** in accordance with the Company's leave of absence policy or the terms of such leave. Except as provided in the preceding sentence, Service shall be deemed to continue for any purpose under this Agreement while the Optionee is on a *bona fide* leave of absence, if (i) such leave was approved by the Company in writing and (ii) continued crediting of Service for such purpose is expressly required by the terms of such leave or by applicable law (as determined by the Company). Service shall be deemed to terminate when such leave ends, unless the Optionee immediately returns to active work.

(f) **Notice Concerning ISO Treatment**. Even if this option is designated as an ISO in the Notice of Stock Option Grant, it ceases to qualify for favorable tax treatment as an ISO to the extent that it is exercised:

(i) More than three months after the date when the Optionee ceases to be an Employee for any reason other than death or permanent and total disability (as defined in Section 22(e)(3) of the Code);

(ii) More than 12 months after the date when the Optionee ceases to be an Employee by reason of permanent and total disability (as defined in Section 22(e)(3) of the Code); or

(iii) More than three months after the date when the Optionee has been on a leave of absence for three months, unless the Optionee's reemployment rights following such leave were guaranteed by statute or by contract.

SECTION 7. RIGHT OF REPURCHASE.

(a) **Scope of Repurchase Right**. Until they vest in accordance with the Notice of Stock Option Grant and Subsection (b) below, the Shares acquired under this Agreement shall be Restricted Shares and shall be subject to the Company's Right of Repurchase. The Company, however, may decline to exercise its Right of Repurchase or may exercise its Right of Repurchase only with respect to a portion of the Restricted Shares. The Company may exercise its Right of Repurchase only during the Repurchase Period following the termination of the Optionee's Service, but the Right of Repurchase may be exercised automatically under Subsection (d) below. If the Right of Repurchase is exercised, the Company shall pay the Optionee an amount equal to the lower of (i) the ***Exercise price*** of each Restricted Share being repurchased or (ii) the Fair Market Value of such Restricted Share at the time the Right of Repurchase is exercised.

(b) **Lapse of Repurchase Right**. The Right of Repurchase shall lapse with respect to the Restricted Shares in accordance with the vesting schedule set forth under ***Vesting Summary*** in the Notice of Stock Option Grant.

(c) **Escrow**. Upon issuance, the certificate(s) for Restricted Shares shall be deposited in escrow with the Company to be held in accordance with the provisions of this Agreement. Any additional or exchanged securities or other property described in Subsection (f) below shall immediately be delivered to the Company to be held in escrow. All ordinary cash dividends on Restricted Shares (or on other securities held in escrow) shall be paid directly to the Optionee and shall not be held in escrow. Restricted Shares, together with any other assets held in escrow under this Agreement, shall be (i) surrendered to the Company for repurchase upon exercise of the Right of Repurchase or the Right of First Refusal or (ii) released to the Optionee upon his or her request to the extent that the Shares have ceased to be Restricted Shares (but not more frequently than once every six months). In any event, all Shares that have ceased to be Restricted Shares, together with any other vested assets held in escrow under this Agreement, shall be released within 90 days after the earlier of (i) the termination of the Optionee's Service or (ii) the lapse of the Right of First Refusal.

(d) **Exercise of Repurchase Right**. The Company shall be deemed to have exercised its Right of Repurchase automatically for all Restricted Shares as of the commencement of the Repurchase Period, unless the Company during the Repurchase Period notifies the holder of the Restricted Shares pursuant to Section 13(c) that it will not exercise its Right of Repurchase for some or all of the Restricted Shares. The Company shall pay to the holder of the Restricted Shares the purchase price determined under Subsection (a) above for the Restricted Shares being repurchased. Payment shall be made in cash or cash equivalents and/or by canceling indebtedness to the Company incurred by the Optionee in the purchase of the Restricted Shares. The certificate(s) representing the Restricted Shares being repurchased shall be delivered to the Company.

(e) **Termination of Rights as Stockholder**. If the Right of Repurchase is exercised in accordance with this Section 7 and the Company makes available the consideration for the Restricted Shares being repurchased, then the person from whom the Restricted Shares are repurchased shall no longer have any rights as a holder of the Restricted Shares (other than the right to receive payment of such consideration). Such Restricted Shares shall be deemed to have been repurchased pursuant to this Section 7, whether or not the certificate(s) for such Restricted Shares have been delivered to the Company or the consideration for such Restricted Shares has been accepted.

(f) **Additional or Exchanged Securities and Property**. In the event of a merger or consolidation of the Company, a sale of all or substantially all of the Company's stock or assets, any other corporate reorganization, a stock split, the declaration of a stock dividend, the declaration of an extraordinary dividend payable in a form other than stock, a spin-off, an adjustment in conversion ratio, a recapitalization or a similar transaction affecting the Company's outstanding securities, any securities or other property (including cash or cash equivalents) that are by reason of such transaction exchanged for, or distributed with respect to, any Restricted Shares shall immediately be subject to the Right of Repurchase. Appropriate adjustments to reflect the exchange or distribution of such securities or property shall be made to the number and/or class of the Restricted Shares. Appropriate adjustments shall also be made to the price per share to be paid upon the exercise of the Right of Repurchase, provided that the aggregate purchase price payable for the Restricted Shares shall remain the same. In the event of

any transaction described in Section 8(b) of the Plan or any other corporate reorganization, the Right of Repurchase may be exercised by the Company's successor.

(g) **Transfer of Restricted Shares**. The Optionee shall not transfer, assign, encumber or otherwise dispose of any Restricted Shares without the Company's written consent, except as provided in the following sentence. The Optionee may transfer Restricted Shares to one or more members of the Optionee's Immediate Family or to a trust established by the Optionee for the benefit of the Optionee and/or one or more members of the Optionee's Immediate Family, provided in either case that the Transferee agrees in writing on a form prescribed by the Company to be bound by all provisions of this Agreement. If the Optionee transfers any Restricted Shares, then this Agreement shall apply to the Transferee to the same extent as to the Optionee.

(h) **Assignment of Repurchase Right**. The Board of Directors may freely assign the Company's Right of Repurchase, in whole or in part. Any person who accepts an assignment of the Right of Repurchase from the Company shall assume all of the Company's rights and obligations under this Section 7.

SECTION 8. RIGHT OF FIRST REFUSAL.

(a) **Right of First Refusal**. In the event that the Optionee proposes to sell, pledge or otherwise transfer to a third party any Shares acquired under this Agreement, or any interest in such Shares, the Company shall have the Right of First Refusal with respect to all (and not less than all) of such Shares. If the Optionee desires to transfer Shares acquired under this Agreement, the Optionee shall give a written Transfer Notice to the Company describing fully the proposed transfer, including the number of Shares proposed to be transferred, the proposed transfer price, the name and address of the proposed Transferee and proof satisfactory to the Company that the proposed sale or transfer will not violate any applicable federal, State or foreign securities laws. The Transfer Notice shall be signed both by the Optionee and by the proposed Transferee and must constitute a binding commitment of both parties to the transfer of the Shares. The Company shall have the right to purchase all, and not less than all, of the Shares on the terms of the proposal described in the Transfer Notice (subject, however, to any change in such terms permitted under Subsection (b) below) by delivery of a notice of exercise of the Right of First Refusal within 30 days after the date when the Transfer Notice was received by the Company.

(b) **Transfer of Shares**. If the Company fails to exercise its Right of First Refusal within 30 days after the date when it received the Transfer Notice, the Optionee may, not later than 90 days following receipt of the Transfer Notice by the Company, conclude a transfer of the Shares subject to the Transfer Notice on the terms and conditions described in the Transfer Notice, provided that any such sale is made in compliance with applicable federal, State and foreign securities laws and not in violation of any other contractual restrictions to which the Optionee is bound. Any proposed transfer on terms and conditions different from those described in the Transfer Notice, as well as any subsequent proposed transfer by the Optionee, shall again be subject to the Right of First Refusal and shall require compliance with the procedure described in Subsection (a) above. If the Company exercises its Right of First Refusal, the parties shall consummate the sale of the Shares on the terms set forth in the Transfer

Notice within 60 days after the date when the Company received the Transfer Notice (or within such longer period as may have been specified in the Transfer Notice); provided, however, that in the event the Transfer Notice provided that payment for the Shares was to be made in a form other than cash or cash equivalents paid at the time of transfer, the Company shall have the option of paying for the Shares with cash or cash equivalents equal to the present value of the consideration described in the Transfer Notice.

(c) **Additional or Exchanged Securities and Property**. In the event of a merger or consolidation of the Company, a sale of all or substantially all of the Company's stock or assets, any other corporate reorganization, a stock split, the declaration of a stock dividend, the declaration of an extraordinary dividend payable in a form other than stock, a spin-off, an adjustment in conversion ratio, a recapitalization or a similar transaction affecting the Company's outstanding securities, any securities or other property (including cash or cash equivalents) that are by reason of such transaction exchanged for, or distributed with respect to, any Shares subject to this Section 8 shall immediately be subject to the Right of First Refusal. Appropriate adjustments to reflect the exchange or distribution of such securities or property shall be made to the number and/or class of the Shares subject to this Section 8.

(d) **Termination of Right of First Refusal**. Any other provision of this Section 8 notwithstanding, in the event that the Stock is readily tradable on an established securities market when the Optionee desires to transfer Shares, the Company shall have no Right of First Refusal, and the Optionee shall have no obligation to comply with the procedures prescribed by Subsections (a) and (b) above.

(e) **Permitted Transfers**. This Section 8 shall not apply to (i) a transfer by beneficiary designation, will or intestate succession or (ii) a transfer to one or more members of the Optionee's Immediate Family or to a trust established by the Optionee for the benefit of the Optionee and/or one or more members of the Optionee's Immediate Family, provided in either case that the Transferee agrees in writing on a form prescribed by the Company to be bound by all provisions of this Agreement. If the Optionee transfers any Shares acquired under this Agreement, either under this Subsection (e) or after the Company has failed to exercise the Right of First Refusal, then this Agreement shall apply to the Transferee to the same extent as to the Optionee.

(f) **Termination of Rights as Stockholder**. If the Company makes available, at the time and place and in the amount and form provided in this Agreement, the consideration for the Shares to be purchased in accordance with this Section 8, then after such time the person from whom such Shares are to be purchased shall no longer have any rights as a holder of such Shares (other than the right to receive payment of such consideration in accordance with this Agreement). Such Shares shall be deemed to have been purchased in accordance with the applicable provisions hereof, whether or not the certificate(s) therefor have been delivered as required by this Agreement.

(g) **Assignment of Right of First Refusal**. The Board of Directors may freely assign the Company's Right of First Refusal, in whole or in part. Any person who accepts an assignment of the Right of First Refusal from the Company shall assume all of the Company's rights and obligations under this Section 8.

SECTION 9. LEGALITY OF INITIAL ISSUANCE.

No Shares shall be issued upon the exercise of this option unless and until the Company has determined that:

(a) It and the Optionee have taken any actions required to register the Shares under the Securities Act or to perfect an exemption from the registration requirements thereof;

(b) Any applicable listing requirement of any stock exchange or other securities market on which Stock is listed has been satisfied; and

(c) Any other applicable provision of federal, State or foreign law has been satisfied.

SECTION 10. NO REGISTRATION RIGHTS.

The Company may, but shall not be obligated to, register or qualify the sale of Shares under the Securities Act or any other applicable law. The Company shall not be obligated to take any affirmative action in order to cause the sale of Shares under this Agreement to comply with any law.

SECTION 11. RESTRICTIONS ON TRANSFER OF SHARES.

(a) **Securities Law Restrictions**. Regardless of whether the offer and sale of Shares under the Plan have been registered under the Securities Act or have been registered or qualified under the securities laws of any State or other relevant jurisdiction, the Company at its discretion may impose restrictions upon the sale, pledge or other transfer of such Shares (including the placement of appropriate legends on the stock certificates (or electronic equivalent) or the imposition of stop-transfer instructions) and may refuse (or may be required to refuse) to transfer Shares acquired hereunder (or Shares proposed to be transferred in a subsequent transfer) if, in the judgment of the Company, such restrictions, legends or refusal are necessary or appropriate to achieve compliance with the Securities Act or other relevant securities or other laws, including without limitation under Regulation S of the Securities Act or pursuant to another available exemption from registration.

(b) **Market Stand-Off**. In connection with any underwritten public offering by the Company of its equity securities pursuant to an effective registration statement filed under the Securities Act, including the Company's initial public offering, the Optionee or a Transferee shall not directly or indirectly sell, make any short sale of, loan, hypothecate, pledge, offer, grant or sell any option or other contract for the purchase of, purchase any option or other contract for the sale of, or otherwise dispose of or transfer, or agree to engage in any of the foregoing transactions with respect to, any Shares acquired under this Agreement without the prior written consent of the Company or its managing underwriter. Such restriction (the "**Market Stand-Off**") shall be in effect for such period of time following the date of the final prospectus for the offering as may be requested by the Company or such underwriter. In no event, however, shall such period exceed 180 days plus such additional period as may reasonably be requested by the Company or such underwriter to accommodate regulatory restrictions on (i) the publication or other distribution of research reports or (ii) analyst recommendations and opinions, including

(without limitation) the restrictions set forth in Rule 2711(f)(4) of the National Association of Securities Dealers and Rule 472(f)(4) of the New York Stock Exchange, as amended, or any similar successor rules. The Market Stand-Off shall in any event terminate two years after the date of the Company's initial public offering. In the event of the declaration of a stock dividend, a spin-off, a stock split, an adjustment in conversion ratio, a recapitalization or a similar transaction affecting the Company's outstanding securities without receipt of consideration, any new, substituted or additional securities which are by reason of such transaction distributed with respect to any Shares subject to the Market Stand-Off, or into which such Shares thereby become convertible, shall immediately be subject to the Market Stand-Off. In order to enforce the Market Stand-Off, the Company may impose stop-transfer instructions with respect to the Shares acquired under this Agreement until the end of the applicable stand-off period. The Company's underwriters shall be beneficiaries of the agreement set forth in this Subsection (b). This Subsection (b) shall not apply to Shares registered in the public offering under the Securities Act.

(c) **Investment Intent at Grant**. The Optionee represents and agrees that the Shares to be acquired upon exercising this option will be acquired for investment, and not with a view to the sale or distribution thereof.

(d) **Investment Intent at Exercise**. In the event that the sale of Shares under the Plan is not registered under the Securities Act but an exemption is available that requires an investment representation or other representation, the Optionee shall represent and agree at the time of exercise that the Shares being acquired upon exercising this option are being acquired for investment, and not with a view to the sale or distribution thereof, and shall make such other representations as are deemed necessary or appropriate by the Company and its counsel, including (if applicable because the Company is relying on Regulation S under the Securities Act) that as of the date of exercise the Optionee is (i) not a U.S. Person; (ii) not acquiring the Shares on behalf, or for the account or benefit, of a U.S. Person; and (iii) is not exercising the option in the United States.

(e) **Legends**. All certificates evidencing Shares purchased under this Agreement shall bear the following legend:

"THE SHARES REPRESENTED HEREBY MAY NOT BE SOLD, ASSIGNED, TRANSFERRED, ENCUMBERED OR IN ANY MANNER DISPOSED OF, EXCEPT IN COMPLIANCE WITH THE TERMS OF A WRITTEN AGREEMENT BETWEEN THE COMPANY AND THE REGISTERED HOLDER OF THE SHARES (OR THE PREDECESSOR IN INTEREST TO THE SHARES). SUCH AGREEMENT GRANTS TO THE COMPANY CERTAIN RIGHTS OF FIRST REFUSAL UPON AN ATTEMPTED TRANSFER OF THE SHARES AND CERTAIN REPURCHASE RIGHTS UPON TERMINATION OF SERVICE WITH THE COMPANY. IN ADDITION, THE SHARES ARE SUBJECT TO RESTRICTIONS ON TRANSFER FOR A LIMITED PERIOD FOLLOWING THE EFFECTIVE DATE OF THE UNDERWRITTEN PUBLIC OFFERING OF THE COMPANY'S SECURITIES AND MAY NOT BE SOLD OR OTHERWISE DISPOSED OF BY THE HOLDER WITHOUT THE CONSENT OF THE COMPANY OR THE MANAGING UNDERWRITER. THE SECRETARY OF

THE COMPANY WILL UPON WRITTEN REQUEST FURNISH A COPY OF SUCH AGREEMENT TO THE HOLDER HEREOF WITHOUT CHARGE."

All certificates evidencing Shares purchased under this Agreement in an unregistered transaction shall bear the following legend (and such other restrictive legends as are required or deemed advisable under the provisions of any applicable law):

"THE SHARES REPRESENTED HEREBY HAVE NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933, AS AMENDED (THE "ACT") OR ANY SECURITIES LAWS OF ANY U.S. STATE, AND MAY NOT BE SOLD, REOFFERED, PLEDGED, ASSIGNED, ENCUMBERED OR OTHERWISE TRANSFERRED OR DISPOSED WITHOUT AN EFFECTIVE REGISTRATION THEREOF UNDER SUCH ACT OR AN OPINION OF COUNSEL, SATISFACTORY TO THE COMPANY AND ITS COUNSEL, THAT SUCH REGISTRATION IS NOT REQUIRED. IN THE ABSENCE OF REGISTRATION OR THE AVAILABILITY (CONFIRMED BY OPINION OF COUNSEL) OF AN ALTERNATIVE EXEMPTION FROM REGISTRATION UNDER THE ACT (INCLUDING WITHOUT LIMITATION IN ACCORDANCE WITH REGULATION S UNDER THE ACT), THESE SHARES MAY NOT BE SOLD, REOFFERED, PLEDGED, ASSIGNED, ENCUMBERED OR OTHERWISE TRANSFERRED OR DISPOSED OF. HEDGING TRANSACTIONS INVOLVING THESE SHARES MAY NOT BE CONDUCTED UNLESS IN COMPLIANCE WITH THE ACT."

(f) **Removal of Legends**. If, in the opinion of the Company and its counsel, any legend placed on a stock certificate representing Shares sold under this Agreement is no longer required, the holder of such certificate shall be entitled to exchange such certificate for a certificate representing the same number of Shares but without such legend.

(g) **Administration**. Any determination by the Company and its counsel in connection with any of the matters set forth in this Section 11 shall be conclusive and binding on the Optionee and all other persons.

SECTION 12. ADJUSTMENT OF SHARES.

In the event of any transaction described in Section 8(a) of the Plan, the terms of this option (including, without limitation, the number and kind of Shares subject to this option and the Exercise Price) shall be adjusted as set forth in Section 8(a) of the Plan. In the event that the Company is a party to a merger or consolidation or in the event of a sale of all or substantially all of the Company's stock or assets, this option shall be subject to the treatment provided by the Board of Directors in its sole discretion, as provided in Section 8(b) of the Plan.

SECTION 13. MISCELLANEOUS PROVISIONS.

(a) **Rights as a Stockholder**. Neither the Optionee nor the Optionee's representative shall have any rights as a stockholder with respect to any Shares subject to this

option until the Optionee or the Optionee's representative becomes entitled to receive such Shares by filing a notice of exercise and paying the Purchase Price pursuant to Sections 4 and 5.

(b) **No Retention Rights**. Nothing in this option or in the Plan shall confer upon the Optionee any right to continue in Service for any period of specific duration or interfere with or otherwise restrict in any way the rights of the Company (or any Parent or Subsidiary employing or retaining the Optionee) or of the Optionee, which rights are hereby expressly reserved by each, to terminate his or her Service at any time and for any reason, with or without cause.

(c) **Notice**. Any notice required by the terms of this Agreement shall be given in writing. It shall be deemed effective upon (i) personal delivery, (ii) deposit with the United States Postal Service, by registered or certified mail, with postage and fees prepaid, (iii) deposit with Federal Express Corporation, with shipping charges prepaid or (iv) deposit with any internationally recognized express mail courier service. Notice shall be addressed to the Company at its principal executive office and to the Optionee at the address that he or she most recently provided to the Company in accordance with this Subsection (c).

(d) **Modifications and Waivers**. No provision of this Agreement shall be modified, waived or discharged unless the modification, waiver or discharge is agreed to in writing and signed by the Optionee and by an authorized officer of the Company (other than the Optionee). No waiver by either party of any breach of, or of compliance with, any condition or provision of this Agreement by the other party shall be considered a waiver of any other condition or provision or of the same condition or provision at another time.

(e) **Entire Agreement**. The Notice of Stock Option Grant, this Agreement and the Plan constitute the entire contract between the parties hereto with regard to the subject matter hereof. They supersede any other agreements, representations or understandings (whether oral or written and whether express or implied) that relate to the subject matter hereof.

(f) **Choice of Law**. This Agreement shall be governed by, and construed in accordance with, the laws of the State of Delaware, as such laws are applied to contracts entered into and performed in such State.

SECTION 14. ACKNOWLEDGEMENTS OF THE OPTIONEE.

In addition to the other terms, conditions and restrictions imposed on this option and the Shares issuable under this option pursuant to this Agreement and the Plan, the Optionee expressly acknowledges being subject to Sections 7 (Right of Repurchase), 8 (Right of First Refusal), 9 (Legality of Initial Issuance) and 11 (Restrictions on Transfer of Shares, including without limitation the Market Stand-Off), as well as the following provisions:

(a) **Tax Consequences**. The Optionee agrees that the Company does not have a duty to design or administer the Plan or its other compensation programs in a manner that minimizes the Optionee's tax liabilities. The Optionee shall not make any claim against the Company or its Board of Directors, officers or employees related to tax liabilities arising from this option or the Optionee's other compensation. In particular, any Optionee subject to U.S. taxation acknowledges that this option is exempt from Section 409A of the Code only if the

Exercise price is at least equal to the Fair Market Value per Share on the ***Granted*** date. Since Shares are not traded on an established securities market, the determination of their Fair Market Value is made by the Board of Directors or by an independent valuation firm retained by the Company. The Optionee acknowledges that there is no guarantee in either case that the Internal Revenue Service will agree with the valuation, and the Optionee shall not make any claim against the Company or its Board of Directors, officers or employees in the event that the Internal Revenue Service asserts that the valuation was too low.

(b) **Electronic Delivery of Documents**. The Optionee agrees to accept by email all documents relating to the Company, the Plan or this option and all other documents that the Company is required to deliver to its security holders (including, without limitation, disclosures that may be required by the Securities and Exchange Commission). The Optionee also agrees that the Company may deliver these documents by posting them on a website maintained by the Company or by a third party under contract with the Company. If the Company posts these documents on a website, it shall notify the Optionee by email of their availability. The Optionee acknowledges that he or she may incur costs in connection with electronic delivery, including the cost of accessing the internet and printing fees, and that an interruption of internet access may interfere with his or her ability to access the documents. This consent shall remain in effect until this option expires or until the Optionee gives the Company written notice that it should deliver paper documents.

(c) **No Notice of Expiration Date**. The Optionee agrees that the Company and its officers, employees, attorneys and agents do not have any obligation to notify him or her prior to the expiration of this option pursuant to Section 6, regardless of whether this option will expire at the end of its full term or on an earlier date related to the termination of the Optionee's Service. The Optionee further agrees that he or she has the sole responsibility for monitoring the expiration of this option and for exercising this option, if at all, before it expires. This Subsection (c) shall supersede any contrary representation that may have been made, orally or in writing, by the Company or by an officer, employee, attorney or agent of the Company.

(d) **Waiver of Statutory Information Rights**. The Optionee acknowledges and agrees that, upon exercise of this option and until the first sale of the Company's Stock to the general public pursuant to a registration statement filed under the Securities Act, he or she will be deemed to have waived any rights the Optionee might otherwise have had under Section 220 of the Delaware General Corporation Law (or under similar rights under other applicable law) to inspect for any proper purpose and to make copies and extracts from the Company's stock ledger, a list of its stockholders and its other books and records or the books and records of any subsidiary. This waiver applies only in the Optionee's capacity as a stockholder and does not affect any other inspection rights the Optionee may have under other law or pursuant to a written agreement with the Company.

(e) **Plan Discretionary**. The Optionee understands and acknowledges that (i) the Plan is entirely discretionary, (ii) the Company and the Optionee's employer have reserved the right to amend, suspend or terminate the Plan at any time, (iii) the grant of an option does not in any way create any contractual or other right to receive additional grants of options (or benefits in lieu of options) at any time or in any amount and (iv) all determinations with respect to any additional grants, including (without limitation) the times when options will be

granted, the number of Shares offered, the ***Exercise price*** and the vesting schedule, will be at the sole discretion of the Company.

(f) **Termination of Service**. The Optionee understands and acknowledges that participation in the Plan ceases upon termination of his or her Service for any reason, except as may explicitly be provided otherwise in the Plan or this Agreement.

(g) **Extraordinary Compensation**. The value of this option shall be an extraordinary item of compensation outside the scope of the Optionee's employment contract, if any, and shall not be considered a part of his or her normal or expected compensation for purposes of calculating severance, resignation, redundancy or end-of-service payments, bonuses, long-service awards, pension or retirement benefits or similar payments.

(h) **Authorization to Disclose**. The Optionee hereby authorizes and directs the Optionee's employer to disclose to the Company or any Subsidiary any information regarding the Optionee's employment, the nature and amount of the Optionee's compensation and the fact and conditions of the Optionee's participation in the Plan, as the Optionee's employer deems necessary or appropriate to facilitate the administration of the Plan.

(i) **Personal Data Authorization**. The Optionee consents to the collection, use and transfer of personal data as described in this Subsection (i). The Optionee understands and acknowledges that the Company, the Optionee's employer and the Company's other Subsidiaries hold certain personal information regarding the Optionee for the purpose of managing and administering the Plan, including (without limitation) the Optionee's name, home address, telephone number, date of birth, social insurance number, salary, nationality, job title, any Shares or directorships held in the Company and details of all options or any other entitlements to Shares awarded, canceled, exercised, vested, unvested or outstanding in the Optionee's favor (the "**Data**"). The Optionee further understands and acknowledges that the Company and/or its Subsidiaries will transfer Data among themselves as necessary for the purpose of implementation, administration and management of the Optionee's participation in the Plan and that the Company and/or any Subsidiary may each further transfer Data to any third party assisting the Company in the implementation, administration and management of the Plan. The Optionee understands and acknowledges that the recipients of Data may be located in the United States or elsewhere. The Optionee authorizes such recipients to receive, possess, use, retain and transfer Data, in electronic or other form, for the purpose of administering the Optionee's participation in the Plan, including a transfer to any broker or other third party with whom the Optionee elects to deposit Shares acquired under the Plan of such Data as may be required for the administration of the Plan and/or the subsequent holding of Shares on the Optionee's behalf. The Optionee may, at any time, view the Data, require any necessary modifications of Data or withdraw the consents set forth in this Subsection (i) by contacting the Company in writing.

SECTION 15. SECTION 15. DEFINITIONS.

(a) "**Agreement**" shall mean this Stock Option Agreement.

(b) "**Board of Directors**" shall mean the Board of Directors of the Company, as constituted from time to time or, if a Committee has been appointed, such Committee.

(c) "**Company**" shall mean Singular Genomics Systems, Inc., a Delaware

corporation.

(d) "**Immediate Family**" shall mean any child, stepchild, grandchild, parent, stepparent, grandparent, spouse, sibling, mother-in-law, father-in-law, son-in-law, daughter-in- law, brother-in-law or sister-in-law and shall include adoptive relationships.

(e) **"Notice of Stock Option Grant"** shall mean the Grant Summary delivered to the Optionee online at https://esharesinc.com by the Company's transfer agent eShares, Inc. (pursuant to which this Agreement is also delivered).

(f) "**Optionee**" shall mean the person named in the Notice of Stock Option Grant as ***Option grant holder***.

(g) "**Plan**" shall mean the Singular Genomics Systems, Inc. 2016 Stock Plan, as in effect on the ***Granted*** date.

(h) "**Purchase Price**" shall mean the ***Exercise price*** multiplied by the number of Shares with respect to which this option is being exercised.

(i) "**Repurchase Period**" shall mean a period of 90 consecutive days commencing on the date when the Optionee's Service terminates for any reason, including (without limitation) death or disability.

(j) "**Restricted Share**" shall mean a Share that is subject to the Right of Repurchase.

(k) "**Right of First Refusal**" shall mean the Company's right of first refusal described in Section 8.

(l) "**Right of Repurchase**" shall mean the Company's right of first refusal described in Section 7.

(m) "**Service**" means service as an Employee, Outside Director or Consultant.

(n) "**Transferee**" shall mean any person to whom the Optionee has directly or indirectly transferred any Share acquired under this Agreement.

(o) "**Transfer Notice**" shall mean the notice of a proposed transfer of Shares described in Section 8.

(p) "**U.S. Person**" shall mean a person described in Rule 902(k) of Regulation S of the Securities Act (or any successor rule or provision), which generally defines a U.S. person as any natural person resident in the United States, any estate of which any executor or administrator is a U.S. Person, or any trust of which of any trustee is a U.S. Person.

LEASE AGREEMENT

THIS LEASE AGREEMENT (this "**Lease**") is made this 1st day of November, 2017, between **ARE-10933 NORTH TORREY PINES, LLC**, a Delaware limited liability company ("**Landlord**"), and **SINGULAR GENOMICS SYSTEMS, INC.**, a Delaware corporation ("**Tenant**").

Building:	10931 N. Torrey Pines Road, San Diego, California	
Premises:	That portion of the Project, initially containing approximately 4,387 rentable square feet, as determined by Landlord, as shown on Exhibit A, subject to adjustment pursuant to Section 39.	
Project:	The real property on which the Building in which the Premises are located, together with all improvements thereon and appurtenances thereto as described on **Exhibit B**.	
Base Rent:	Months 1 — 12:	$23,000.00 per month
	Months 13 — 24:	$28,000.00 per month
	Months 25 — 36:	$33,000.00 per month
	Months 37 — 12/31/21:	$38,000.00 per month

Rentable Area of Premises: Initially, 4,387 sq. ft., subject to adjustment pursuant to Section 39

Security Deposit: $23,000.00

Target Commencement Date: February 1, 2018

Base Term: A term beginning on the Commencement Date and ending on December 31, 2021.

Permitted Use: Research and development laboratory, related office and other related uses consistent with the character of the Project and otherwise in compliance with the provisions of Section 7 hereof.

Address for Rent Payment:
[Address]

Landlord's Notice Address:
[Address]

Tenant's Notice Address:
[Address]

The following Exhibits and Addenda are attached hereto and incorporated herein by this reference:

[X] **EXHIBIT A** - PREMISES DESCRIPTION
[X] **EXHIBIT B** - DESCRIPTION OF PROJECT

[X] **EXHIBIT C** - LANDLORD'S WORK
[X] **EXHIBIT D** - COMMENCEMENT DATE
[X] **EXHIBIT E** - RULES AND REGULATIONS
[X] **EXHIBIT F** - TENANT'S PERSONAL PROPERTY

1. **Lease of Premises.** Upon and subject to all of the terms and conditions hereof, Landlord hereby leases the Premises to Tenant and Tenant hereby leases the Premises from Landlord. The portions of the Project which are for the non-exclusive use of tenants of the Project are collectively referred to herein as the "**Common Areas.**" Landlord reserves the right to modify Common Areas, provided that such modifications do not materially adversely affect Tenant's use of the Premises for the Permitted Use. From and after the Commencement Date through the expiration of the Term, Tenant shall have access to the Building and the Premises 24 hours a day, 7 days a week, except in the case of emergencies, as the result of Legal Requirements, the performance by Landlord of any installation, maintenance or repairs, or any other temporary interruptions, and otherwise subject to the terms of this Lease.

2. **Delivery; Acceptance of Premises; Commencement Date.** Landlord shall use reasonable efforts to deliver the Premises to Tenant on or before the Target Commencement Date, with Landlord's Work substantially completed ("**Delivery**" or "**Deliver**"). If Landlord fails to timely Deliver the Premises, Landlord shall not be liable to Tenant for any loss or damage resulting therefrom, and this Lease shall not be void or voidable except as provided herein. If Landlord does not Deliver the Premises within 90 days of the Target Commencement Date for any reason other than Force Majeure delays, this Lease may be terminated by Tenant by written notice to Landlord, and if so terminated by Tenant: (a) the Security Deposit, or any balance thereof (i.e., after deducting therefrom all amounts to which Landlord is entitled under the provisions of this Lease), shall be returned to Tenant, and (b) neither Landlord nor Tenant shall have any further rights, duties or obligations under this Lease, except with respect to provisions which expressly survive termination of this Lease. If Tenant does not elect to void this Lease within 10 business days of the lapse of such 90 day period, such right to void this Lease shall be waived and this Lease shall remain in full force and effect. As used herein, "**Landlord's Work**" shall mean the installation of a card door with card reader access in the location shown on Exhibit C attached hereto, which Landlord's Work shall be performed at Landlord's sole cost and expense.

The "**Commencement Date**" shall be the date Landlord Delivers the Premises to Tenant. Upon request of Landlord, Tenant shall execute and deliver a written acknowledgment of the Commencement Date, and the expiration date of the Term when such are established in the form of the "**Acknowledgement of Commencement Date**" attached to this Lease as Exhibit D; provided, however, Tenant's failure to execute and deliver such acknowledgment shall not affect Landlord's rights hereunder. The "**Term**" of this Lease shall be the Base Term, as defined above on the first page of this Lease.

Landlord shall permit Tenant access to the Premises commencing on the date that is 10 days prior to the Commencement Date for Tenant's installation and set up of its furniture, fixtures and equipment in the Premises (collectively, "**FF&E Installation**"), provided that such FF&E Installation is coordinated with Landlord, and Tenant complies with the Lease and all other reasonable restrictions and conditions Landlord may impose during the FF&E Installation. All such access shall be during normal business hours. Notwithstanding the foregoing, Tenant shall

have no right to enter onto any portion of the Premises or the Project unless and until Tenant shall deliver to Landlord evidence reasonably satisfactory to Landlord demonstrating that the insurance required to be carried by Tenant pursuant to Section 17 is in full force and effect. Any access to the Premises by Tenant before the Commencement Date shall be subject to all of the terms and conditions of this Lease, excluding the obligation to pay Base Rent and Operating Expenses.

Except as otherwise expressly set forth in this Lease: (i) Tenant shall accept the Premises in their "**as-is**" condition as of the Commencement Date; (ii) Landlord shall have no obligation for any defects in the Premises; and (iii) Tenant's taking possession of the Premises shall be conclusive evidence that Tenant accepts the Premises and that the Premises were in good condition at the time possession was taken.

For the period of 180 consecutive days after the Commencement Date, Landlord shall, at its sole cost and expense, be responsible for any repairs that are required to be made to the Building Systems (as defined in Section 13) serving the Premises, unless Tenant or any Tenant Party was responsible for the cause of such repair, in which case Tenant shall pay the cost.

As of the Commencement Date, Landlord shall make available to Tenant a "**TI Allowance**" as follows: (a) a tenant improvement allowance of up to $87,740, which shall, to the extent used, result in adjustments to the Base Rent as set forth in Section 4(b) below. The TI Allowance may be used solely for the design and construction of fixed and permanent improvements in the Premises and the Licensed Premises (as defined in Section 39 below) desired by and performed by Tenant (the "**Tenant Improvements**"). Tenant acknowledges that upon the expiration of the Term of the Lease, the Tenant Improvements shall become the property of Landlord and may not be removed by Tenant. Except for the TI Allowance, Tenant shall be solely responsible for all of the costs of the Tenant Improvements. The Tenant Improvements shall be treated as Alterations and shall be undertaken pursuant to and in accordance with Section 12 of this Lease (except that Landlord shall be entitled to an administration fee in connection with the Tenant Improvements equal to 1% of the Tenant Improvements rather than the 3% provided for in Section 12) and shall be subject to Landlord's prior written consent, which may be given or withheld in Landlord's sole discretion if any such Alteration affects the Building structure or Building Systems (as defined in Section 13) and shall not be otherwise unreasonably withheld, conditioned or delayed. The contractor for the Tenant Improvements shall be selected by Tenant, subject to Landlord's approval, which shall not be unreasonably withheld, conditioned or delayed. Prior to the commencement of the Tenant Improvements, Tenant shall deliver to Landlord a copy of any contract with Tenant's contractors (including the architect), and certificates of insurance from any contractor performing any part of the Tenant Improvements evidencing industry standard commercial general liability, automotive liability, "**builder's risk**", and workers' compensation insurance. Tenant shall cause the general contractor to provide a certificate of insurance naming Landlord, Alexandria Real Estate Equities, Inc., and Landlord's lender (if any) as additional insureds for the general contractor's liability coverages required above. During the course of design and construction of the Tenant Improvements, Landlord shall reimburse Tenant for the cost of the Tenant Improvements once a month against a draw request in Landlord's standard form, containing evidence of payment of the applicable costs and such certifications, lien waivers (including a conditional lien release for each progress payment and unconditional lien releases for the prior month's progress payments), inspection reports and other matters as Landlord customarily obtains, to the extent of Landlord's approval thereof for payment, no later than 30 days following receipt

of such draw request. Upon completion of the Tenant Improvements (and prior to any final disbursement of the TI Allowance) Tenant shall deliver to Landlord the following items: (i) sworn statements setting forth the names of all contractors and subcontractors who did work on the Tenant Improvements and final lien waivers from all such contractors and subcontractors; and (ii) "**as built**" plans or marked-up construction drawings for the Tenant Improvements. Landlord shall be entitled to receive the benefit of all construction warranties and manufacturer's equipment warranties relating to equipment installed in the Premises as part of the Tenant Improvements. Notwithstanding the foregoing, if the cost of the Tenant Improvements exceeds the TI Allowance, Tenant shall be required to pay such excess prior to the distribution of the then-remaining unpaid TI Allowance. The TI Allowance shall only be available for use by Tenant for the construction of the Tenant Improvements in the Premises until the date that is 6 months after the Commencement Date, and any portion of the TI Allowance which has not been requested for reimbursement by Tenant pursuant to the terms of this paragraph on or before the date that is 6 months after the Commencement Date shall be forfeited and shall not be available for use by Tenant.

Tenant agrees and acknowledges that neither Landlord nor any agent of Landlord has made any representation or warranty with respect to the condition of all or any portion of the Premises or the Project, and/or the suitability of the Premises or the Project for the conduct of Tenant's business, and Tenant waives any implied warranty that the Premises or the Project are suitable for the Permitted Use. This Lease constitutes the complete agreement of Landlord and Tenant with respect to the subject matter hereof and supersedes any and all prior representations, inducements, promises, agreements, understandings and negotiations which are not contained herein. Landlord in executing this Lease does so in reliance upon Tenant's representations, warranties, acknowledgments and agreements contained herein.

3. **Rent.**

(a) Base Rent. The first month's Base Rent and the Security Deposit shall be due and payable on delivery of an executed copy of this Lease to Landlord. Tenant shall pay to Landlord in advance, without demand, abatement, deduction or set-off, monthly installments of Base Rent on or before the first day of each calendar month during the Term hereof, in lawful money of the United States of America, at the office of Landlord for payment of Rent set forth above, or to such other person or at such other place as Landlord may from time to time designate in writing. Payments of Base Rent for any fractional calendar month shall be prorated. The obligation of Tenant to pay Base Rent and other sums to Landlord and the obligations of Landlord under this Lease are independent obligations. Tenant shall have no right at any time to abate, reduce, or set-off any Rent (as defined in Section 5) due hereunder except for any abatement as may be expressly provided in this Lease.

(b) Additional Rent. In addition to Base Rent, Tenant agrees to pay to Landlord as additional rent ("**Additional Rent**"), any and all other amounts Tenant assumes or agrees to pay under the provisions of this Lease, including, without limitation, any and all other sums that may become due by reason of any default of Tenant or failure to comply with the agreements, terms, covenants and conditions of this Lease to be performed by Tenant, after any applicable notice and cure period. Base Rent, TI Rent and all other amounts payable by Tenant to Landlord hereunder are collectively referred to herein as "**Rent.**"

4. **Base Rent Adjustments.**

(a) Annual Adjustments. Base Rent shall be increased pursuant to the schedule set forth on Page 1 of this Lease.

(b) TI Allowance. Commencing on the Commencement Date and continuing thereafter on the first day of each month during the Base Term, Tenant shall pay the amount necessary to fully amortize the portion of the TI Allowance actually funded by Landlord, if any, in equal monthly payments with interest at a rate of 8% per annum over the Base Term, which interest shall begin to accrue on the date that Landlord first disburses such Allowance or any portion(s) thereof (the "**TI Rent**"). Tenant acknowledges that because the TI Allowance may be disbursed to Tenant in multiple disbursements following the Commencement Date, the TI Rent payable by Tenant pursuant to this Section 4(b) may be adjusted following each such disbursement. Any of the TI Allowance and applicable interest remaining unpaid as of the expiration or earlier termination of this Lease shall be paid to Landlord in a lump sum at the expiration or earlier termination of this Lease.

5. **Intentionally Omitted.**

6. **Security Deposit.** Tenant shall deposit with Landlord, upon delivery of an executed copy of this Lease to Landlord, a security deposit (the "**Security Deposit**") for the performance of all of Tenant's obligations hereunder in the amount set forth on page 1 of this Lease, which Security Deposit shall be in the form of an unconditional and irrevocable letter of credit (the "**Letter of Credit**"): (i) in form and substance reasonably satisfactory to Landlord, (ii) naming Landlord as beneficiary, (iii) expressly allowing Landlord to draw upon it at any time from time to time by delivering to the issuer notice that Landlord is entitled to draw thereunder, (iv) issued by an FDIC-insured financial institution satisfactory to Landlord, and (v) redeemable by presentation of a sight draft in the state of Landlord's choice. If Tenant does not provide Landlord with a substitute Letter of Credit complying with all of the requirements hereof at least 10 days before the stated expiration date of any then current Letter of Credit and the Letter of Credit does not include an "**evergreen**" provision by which it automatically renews, Landlord shall have the right to draw the full amount of the current Letter of Credit and hold the funds drawn in cash without obligation for interest thereon as the Security Deposit. The Security Deposit shall be held by Landlord as security for the performance of Tenant's obligations under this Lease. The Security Deposit is not an advance rental deposit or a measure of Landlord's damages in case of Tenant's default. Upon each occurrence of a Default (as defined in Section 20), Landlord may use all or any part of the Security Deposit to pay delinquent payments due under this Lease, future rent damages under California Civil Code Section 1951.2, and the cost of any damage, injury, expense or liability caused by such Default, without prejudice to any other remedy provided herein or provided by law. Landlord's right to use the Security Deposit under this Section 6 includes the right to use the Security Deposit to pay future rent damages following the termination of this Lease pursuant to Section 21(c) below. Upon any use of all or any portion of the Security Deposit, Tenant shall restore the amount of the Letter of Credit within 10 days after demand to the amount set forth on Page 1 of this Lease. Tenant hereby waives the provisions of any law, now or hereafter in force, including, without limitation, California Civil Code Section 1950.7, which provide that Landlord may claim from a security deposit only those sums reasonably necessary to remedy defaults in the payment of Rent, to repair damage caused by Tenant or to clean the Premises, it being agreed that Landlord may, in addition,

claim those sums reasonably necessary to compensate Landlord for any other loss or damage, foreseeable or unforeseeable, caused by the act or omission of Tenant or any officer, employee, agent or invitee of Tenant. Upon bankruptcy or other debtor-creditor proceedings against Tenant, the Security Deposit shall be deemed to be applied first to the payment of Rent and other charges due Landlord for periods prior to the filing of such proceedings. If Tenant is not in Default under this Lease, the Security Deposit, or any balance thereof (i.e., after deducting therefrom all amounts to which Landlord is entitled under the provisions of this Lease), shall be returned to Tenant (or, at Landlord's option, to the last assignee of Tenant's interest hereunder) within 60 days after the expiration or earlier termination of this Lease.

If Landlord transfers its interest in the Project or this Lease, Landlord shall either (a) transfer any Security Deposit then held by Landlord to a person or entity assuming Landlord's obligations under this Section 6, or (b) return to Tenant any Security Deposit then held by Landlord and remaining after the deductions permitted herein. Upon such transfer to such transferee or the return of the Security Deposit to Tenant, Landlord shall have no further obligation with respect to the Security Deposit, and Tenant's right to the return of the Security Deposit shall apply solely against Landlord's transferee. The Security Deposit is not an advance rental deposit or a measure of Landlord's damages in case of Tenant's default. Landlord's obligation respecting the Security Deposit is that of a debtor, not a trustee, and no interest shall accrue thereon.

7. **Use.** The Premises shall be used solely for the Permitted Use set forth in the basic lease provisions on page 1 of this Lease, and in compliance with all laws, orders, judgments, ordinances, regulations, codes, directives, permits, licenses, covenants and restrictions now or hereafter applicable to the Premises, and to the use and occupancy thereof, including, without limitation, the Americans With Disabilities Act, 42 U.S.C. § 12101, et seq. (together with the regulations promulgated pursuant thereto, "**ADA**") (collectively, "**Legal Requirements**" and each, a "**Legal Requirement**"). Tenant shall, upon 5 days' written notice from Landlord, discontinue any use of the Premises which is declared by any Governmental Authority (as defined in Section 9) having jurisdiction to be a violation of a Legal Requirement. Tenant will not use or permit the Premises to be used for any purpose or in any manner that would void Tenant's or Landlord's insurance, increase the insurance risk, or cause the disallowance of any sprinkler or other credits. Tenant shall not permit any part of the Premises to be used as a "**place of public accommodation**", as defined in the ADA or any similar legal requirement. Tenant shall reimburse Landlord promptly upon demand for any additional premium charged for any such insurance policy by reason of Tenant's failure to comply with the provisions of this Section or otherwise caused by Tenant's use and/or occupancy of the Premises. Tenant will use the Premises in a careful, safe and proper manner and will not commit or permit waste, overload the floor or structure of the Premises, subject the Premises to use that would damage the Premises or obstruct or interfere with the rights of Landlord or other tenants or occupants of the Project, including conducting or giving notice of any auction, liquidation, or going out of business sale on the Premises, or using or allowing the Premises to be used for any unlawful purpose. Tenant shall cause any equipment or machinery to be installed in the Premises so as to reasonably prevent sounds or vibrations from the Premises from extending into Common Areas, or other space in the Project. Tenant shall not place any machinery or equipment weighing 500 pounds or more in or upon the Premises or transport or move such items through the Common Areas of the Project or in the Project elevators without the prior written consent of Landlord, which consent shall not be unreasonably withheld. Except as may be provided under the Work Letter, Tenant shall not, without the prior written

consent of Landlord, use the Premises in any manner which will require ventilation, air exchange, heating, gas, steam, electricity or water beyond the existing capacity of the Project as proportionately allocated to the Premises based upon Tenant's Share as usually furnished for the Permitted Use.

Tenant, at its sole expense, shall make any alterations or modifications to the interior or the exterior of the Premises or the Project that are required by Legal Requirements (including, without limitation, compliance of the Premises with the ADA) related to Tenant's specific use or occupancy of the Premises. Notwithstanding any other provision herein to the contrary, Tenant shall be responsible for any and all demands, claims, liabilities, losses, costs, expenses, actions, causes of action, damages or judgments, and all reasonable expenses incurred in investigating or resisting the same (including, without limitation, reasonable attorneys' fees, charges and disbursements and costs of suit) (collectively, "**Claims**") arising out of or in connection with Legal Requirements related to Tenant's specific use or occupancy of the Premises or Tenant's Alterations, and Tenant shall indemnify, defend, hold and save Landlord harmless from and against any and all Claims arising out of or in connection with any failure of the Premises to comply with any Legal Requirement related to Tenant's use or occupancy of the Premises or Tenant's Alterations.

Tenant acknowledges that Landlord may, but shall not be obligated to, seek to obtain Leadership in Energy and Environmental Design (LEED), WELL Building Standard, or other similar "**green**" certification with respect to the Project and/or the Premises, and Tenant agrees to reasonably cooperate with Landlord, and to provide such information and/or documentation as Landlord may reasonably request, in connection therewith.

8. **Holding Over.** If, with Landlord's express written consent, Tenant retains possession of the Premises after the termination of the Term, (i) unless otherwise agreed in such written consent, such possession shall be subject to immediate termination by Landlord at any time, (ii) all of the other terms and provisions of this Lease (including, without limitation, the adjustment of Base Rent pursuant to Section 4 hereof) shall remain in full force and effect (excluding any expansion or renewal option or other similar right or option) during such holdover period, (iii) Tenant shall continue to pay Base Rent in the amount payable upon the date of the expiration or earlier termination of this Lease or such other amount as may be agreed upon by the parties, and (iv) all other payments shall continue under the terms of this Lease. If Tenant remains in possession of the Premises after the expiration or earlier termination of the Term without the express written consent of Landlord, (A) Tenant shall become a tenant at sufferance upon the terms of this Lease except that the monthly rental shall be equal to 150% of Rent in effect during the last 30 days of the Term, and (B) Tenant shall be responsible for all damages suffered by Landlord resulting from or occasioned by Tenant's holding over, including consequential damages; provided, however, that if Tenant delivers a written inquiry to Landlord within 30 days prior to the expiration or earlier termination of the Term, Landlord will notify Tenant whether the potential exists for consequential damages. No holding over by Tenant, whether with or without consent of Landlord, shall operate to extend this Lease except as otherwise expressly provided, and this Section 8 shall not be construed as consent for Tenant to retain possession of the Premises. Acceptance by Landlord of Rent after the expiration of the Term or earlier termination of this Lease shall not result in a renewal or reinstatement of this Lease.

9. **Taxes.** Landlord shall pay all taxes, levies, fees, assessments and governmental charges of any kind, existing as of the Commencement Date or thereafter enacted (collectively referred to as "**Taxes**"), imposed on the Project by any federal, state, regional, municipal, local or other governmental authority or agency, including, without limitation, quasi-public agencies (collectively, "**Governmental Authority**") during the Term.

Notwithstanding anything to the contrary contained herein, Tenant shall pay, prior to delinquency, any and all Taxes levied or assessed against any personal property or trade fixtures placed by Tenant in the Premises, whether levied or assessed against Landlord or Tenant. If any Taxes on Tenant's personal property or trade fixtures are levied against Landlord or Landlord's property, or if the assessed valuation of the Project is increased by a value attributable to improvements in or alterations to the Premises, whether owned by Landlord or Tenant and whether or not affixed to the real property so as to become a part thereof, higher than the base valuation on which Landlord from time-to-time allocates Taxes to all tenants in the Project, Landlord shall have the right, but not the obligation, to pay such Taxes. Landlord's determination of any excess assessed valuation shall be binding and conclusive, absent manifest error. The amount of any such payment by Landlord shall constitute Additional Rent due from Tenant to Landlord immediately upon demand.

10. **Parking.** Subject to all applicable Legal Requirements, Force Majeure, a Taking (as defined in Section 19 below) and the exercise by Landlord of its rights hereunder, Tenant shall have the right, at no additional charge, in common with other tenants of the Project, to use 2 parking spaces per 1,000 rentable square feet of the Premises, in those areas designated for non-reserved parking, subject in each case to Landlord's rules and regulations. Landlord shall not be responsible for enforcing Tenant's parking rights against any third parties, including other tenants of the Project.

11. **Utilities, Services.** Landlord shall, at no additional cost to Tenant, provide, subject to the terms of this Section 11, water, electricity, heat, light, power, sewer, other utilities (including gas and fire sprinklers to the extent the Project is plumbed for such services), as reasonably determined by Landlord, and with respect to the Common Areas only, refuse and trash collection and janitorial services (collectively, "**Utilities**"). No interruption or failure of Utilities, from any cause whatsoever other than Landlord's willful misconduct, shall result in eviction or constructive eviction of Tenant, termination of this Lease or the abatement of Rent. Tenant agrees to limit use of water and sewer to normal restroom use. Commencing on the Commencement Date, Tenant shall retain third parties reasonably acceptable to Landlord to provide janitorial services and trash collection services to the Premises and Tenant shall pay such third parties directly for such janitorial and trash collection services.

Notwithstanding anything to the contrary set forth herein, if (i) a stoppage of an Essential Service (as defined below) to the Premises shall occur and such stoppage is due solely to the gross negligence or willful misconduct of Landlord and not due in any part to any act or omission on the part of Tenant or any Tenant Party or any matter beyond Landlord's reasonable control (any such stoppage of an Essential Service being hereinafter referred to as a "**Service Interruption**"), and (ii) such Service Interruption continues for more than 5 consecutive business days after Landlord shall have received written notice thereof from Tenant, and (iii) as a result of such Service Interruption, the conduct of Tenant's normal operations in the Premises are materially and

adversely affected, then, to the extent that such Service Interruption is covered by rental interruption insurance carried by Landlord pursuant to this Lease, there shall be an abatement of one day's Base Rent for each day during which such Service Interruption continues after such 5 business day period; provided, however, that if any part of the Premises is reasonably useable for Tenant's normal business operations or if Tenant conducts all or any part of its operations in any portion of the Premises notwithstanding such Service Interruption, then the amount of each daily abatement of Base Rent shall only be proportionate to the nature and extent of the interruption of Tenant's normal operations or ability to use the Premises. The rights granted to Tenant under this paragraph shall be Tenant's sole and exclusive remedy resulting from a failure of Landlord to provide services, and Landlord shall not otherwise be liable for any loss or damage suffered or sustained by Tenant resulting from any failure or cessation of services. For purposes hereof, the term "**Essential Services**" shall mean the following services: HVAC service, water, sewer and electricity, but in each case only to the extent that Landlord has an obligation to provide same to Tenant under this Lease. The provisions of this paragraph shall only apply as long as the original Tenant is the tenant occupying the Premises under this Lease and shall not apply to any assignee or sublessee other than in connection with a Permitted Assignment (as defined in Section 22(b)).

Landlord's sole obligation for either providing emergency generators or providing emergency back-up power to Tenant shall be: (i) to provide emergency generators with not less than the capacity of the emergency generators located in the Building as of the Commencement Date, and (ii) to contract with a third party to maintain the emergency generators as per the manufacturer's standard maintenance guidelines. Except as otherwise provided in the immediately preceding sentence, Landlord shall have no obligation to provide Tenant with operational emergency generators or back-up power or to supervise, oversee or confirm that the third party maintaining the emergency generators is maintaining the generators as per the manufacturer's standard guidelines or otherwise. During any period of replacement, repair or maintenance of the emergency generators when the emergency generators are not operational, including any delays thereto due to the inability to obtain parts or replacement equipment, Landlord shall have no obligation to provide Tenant with an alternative back-up generator or generators or alternative sources of back-up power. Tenant expressly acknowledges and agrees that Landlord does not guaranty that such emergency generators will be operational at all times or that emergency power will be available to the Premises when needed.

Tenant agrees to provide Landlord with access to Tenant's water and/or energy usage data on a monthly basis, either by providing Tenant's applicable utility login credentials to Landlord's Measurabl online portal, or by another delivery method reasonably agreed to by Landlord and Tenant.

12. **Alterations and Tenant's Property.** Any alterations, additions, or improvements made to the Premises by or on behalf of Tenant, including additional locks or bolts of any kind or nature upon any doors or windows in the Premises, but excluding installation, removal or realignment of furniture systems (other than removal of furniture systems owned or paid for by Landlord) not involving any modifications to the structure or connections (other than by ordinary plugs or jacks) to Building Systems (as defined in Section 13) ("**Alterations**") shall be subject to Landlord's prior written consent, which may be given or withheld in Landlord's sole discretion if any such Alteration affects the structure or Building Systems and shall not be otherwise unreasonably withheld. If Landlord approves any Alterations, Landlord may impose such

conditions on Tenant in connection with the commencement, performance and completion of such Alterations as Landlord may deem appropriate in Landlord's reasonable discretion. Any request for approval shall be in writing, delivered not less than 15 business days in advance of any proposed construction, and accompanied by plans, specifications, bid proposals, work contracts and such other information concerning the nature and cost of the alterations as may be reasonably requested by Landlord, including the identities and mailing addresses of all persons performing work or supplying materials. Landlord's right to review plans and specifications and to monitor construction shall be solely for its own benefit, and Landlord shall have no duty to ensure that such plans and specifications or construction comply with applicable Legal Requirements. Tenant shall cause, at its sole cost and expense, all Alterations to comply with insurance requirements and with Legal Requirements and shall implement at its sole cost and expense any alteration or modification required by Legal Requirements as a result of any Alterations. Tenant shall pay to Landlord, as Additional Rent, on demand an amount equal to 3% of all charges incurred by Tenant or its contractors or agents in connection with any Alteration to cover Landlord's overhead and expenses for plan review, coordination, scheduling and supervision. Before Tenant begins any Alteration, Landlord may post on and about the Premises notices of non-responsibility pursuant to applicable law. Tenant shall reimburse Landlord for, and indemnify and hold Landlord harmless from, any expense incurred by Landlord by reason of faulty work done by Tenant or its contractors, delays caused by such work, or inadequate cleanup.

Tenant shall furnish reasonable security or make other arrangements reasonably satisfactory to Landlord to assure payment for the completion of all Alterations work free and clear of liens, and shall provide (and cause each contractor or subcontractor to provide) certificates of insurance for workers' compensation and other coverage in amounts and from an insurance company satisfactory to Landlord protecting Landlord against liability for personal injury or property damage during construction. Upon completion of any Alterations, Tenant shall deliver to Landlord: (i) sworn statements setting forth the names of all contractors and subcontractors who did the work and final lien waivers from all such contractors and subcontractors; and (ii) "**as built**" plans for any such Alteration.

Except for Removable Installations (as hereinafter defined), all Installations (as hereinafter defined) shall be and shall remain the property of Landlord during the Term and following the expiration or earlier termination of the Term, shall not be removed by Tenant at any time during the Term, and shall remain upon and be surrendered with the Premises as a part thereof. Notwithstanding the foregoing, Landlord may, at the time its approval of any such Installation is requested, notify Tenant that Landlord requires that Tenant remove such Installation upon the expiration or earlier termination of the Term, in which event Tenant shall remove such Installation in accordance with the immediately succeeding sentence. Upon the expiration or earlier termination of the Term, Tenant shall remove (i) all wires, cables or similar equipment which Tenant has installed in the Premises or in the risers or plenums of the Building, (ii) any Installations for which Landlord has given Tenant notice of removal in accordance with the immediately preceding sentence, and (iii) all of Tenant's Property (as hereinafter defined), and Tenant shall restore and repair any damage caused by or occasioned as a result of such removal, including, without limitation, capping off all such connections behind the walls of the Premises and repairing any holes. During any restoration period beyond the expiration or earlier termination of the Term, Tenant shall pay Rent to Landlord as provided herein as if said space were otherwise occupied by Tenant. If Landlord is requested by Tenant or any lender, lessor or other person or entity claiming

an interest in any of Tenant's Property to waive any lien Landlord may have against any of Tenant's Property, and Landlord consents to such waiver, then Landlord shall be entitled to be paid as administrative rent a fee of $1,000 per occurrence for its time and effort in preparing and negotiating such a waiver of lien.

For purposes of this Lease, (x) "**Removable Installations**" means any items listed on Exhibit F attached hereto and any items agreed by Landlord in writing to be included on Exhibit F in the future,

(a) "**Tenant's Property**" means Removable Installations and, other than Installations, any personal property or equipment of Tenant that may be removed without material damage to the Premises, and

(b) "**Installations**" means all property of any kind paid for with the TI Fund, all Alterations, all fixtures, and all partitions, hardware, built-in machinery, built-in casework and cabinets and other similar additions, equipment, property and improvements built into the Premises so as to become an integral part of the Premises, including, without limitation, fume hoods which penetrate the roof or plenum area, built-in cold rooms, built-in warm rooms, walk-in cold rooms, walk-in warm rooms, deionized water systems, glass washing equipment, autoclaves, chillers, built-in plumbing, electrical and mechanical equipment and systems, and any power generator and transfer switch. Notwithstanding anything to the contrary contained in this Lease, Tenant shall not be required to remove or restore any of Landlord's Work at the expiration or earlier termination of the Term, nor shall Tenant have the right to remove any of Landlord's Work on or before the expiration or earlier termination of the Term.

13. **Landlord's Repairs.** Landlord shall, at no additional cost to Tenant (except as otherwise expressly set forth in this Lease, maintain all of the structural (including the roof and roof membrane), exterior, parking and other Common Areas of the Project, including HVAC, plumbing, fire sprinklers, elevators and all other building systems serving the Premises and other portions of the Project ("**Building Systems**"), in good repair, reasonable wear and tear and uninsured losses and damages caused by Tenant, or by any of Tenant, or by any of Tenant's assignees, sublessees, licensees, agents, servants, employees, invitees and contractors (or any of Tenant's assignees, sublessees and/or licensees respective agents, servants, employees, invitees and contractors) (collectively, "**Tenant Parties**") excluded. Losses and damages caused by Tenant or any Tenant Party shall be repaired by Landlord, to the extent not covered by insurance, at Tenant's sole cost and expense. Landlord reserves the right to stop Building Systems services when necessary (i) by reason of accident or emergency, or (ii) for planned repairs, alterations or improvements, which are, in the judgment of Landlord, desirable or necessary to be made, until said repairs, alterations or improvements shall have been completed. Landlord shall have no responsibility or liability for failure to supply Building Systems services during any such period of interruption; provided, however, that Landlord shall, except in case of emergency, make a commercially reasonable effort to give Tenant 24 hours advance notice of any planned stoppage of Building Systems services for routine maintenance, repairs, alterations or improvements. Tenant shall promptly give Landlord written notice of any repair required by Landlord pursuant to this Section, after which Landlord shall make a commercially reasonable effort to effect such repair. Landlord shall not be liable for any failure to make any repairs or to perform any maintenance unless such failure shall persist for an unreasonable time after Tenant's written notice of the need

for such repairs or maintenance. Tenant waives its rights under any state or local law to terminate this Lease or to make such repairs at Landlord's expense and agrees that the parties' respective rights with respect to such matters shall be solely as set forth herein. Notwithstanding anything to the contrary contained in this Section 13, repairs required as the result of fire, earthquake, flood, vandalism, war, or similar cause of damage or destruction shall be controlled by Section 18.

14. **Tenant's Repairs.** Subject to Section 13 hereof, Tenant, at its expense, shall repair, replace and maintain in good condition all portions of the Premises, including, without limitation, entries, doors, ceilings, interior windows, interior walls, and the interior side of demising walls. Should Tenant fail to make any such repair or replacement or fail to maintain the Premises, Landlord shall give Tenant notice of such failure. If Tenant fails to commence cure of such failure within 10 days of Landlord's notice, and thereafter diligently prosecute such cure to completion, Landlord may perform such work and shall be reimbursed by Tenant within 10 days after demand therefor; provided, however, that if such failure by Tenant creates or could create an emergency, Landlord may immediately commence cure of such failure and shall thereafter be entitled to recover the costs of such cure from Tenant. Subject to Sections 17 and 18, Tenant shall bear the full uninsured cost of any repair or replacement to any part of

15. **Mechanic's Liens.** Tenant shall discharge, by bond or otherwise, any mechanic's lien filed against the Premises or against the Project for work claimed to have been done for, or materials claimed to have been furnished to, Tenant within 10 days after the filing thereof, at Tenant's sole cost and shall otherwise keep the Premises and the Project free from any liens arising out of work performed, materials furnished or obligations incurred by Tenant. Should Tenant fail to discharge any lien described herein, Landlord shall have the right, but not the obligation, to pay such claim or post a bond or otherwise provide security to eliminate the lien as a claim against title to the Project and the cost thereof shall be immediately due from Tenant as Additional Rent. If Tenant shall lease or finance the acquisition of office equipment, furnishings, or other personal property of a removable nature utilized by Tenant in the operation of Tenant's business, Tenant warrants that any Uniform Commercial Code Financing Statement filed as a matter of public record by any lessor or creditor of Tenant will upon its face or by exhibit thereto indicate that such Financing Statement is applicable only to removable personal property of Tenant located within the Premises. In no event shall the address of the Project be furnished on the statement without qualifying language as to applicability of the lien only to removable personal property, located in an identified suite held by Tenant.

16. **Indemnification.** Tenant hereby indemnifies and agrees to defend, save and hold Landlord, its officers, directors, employees, managers, agents, sub-agents, constituent entities and lease signators (collectively, "**Landlord Indemnified Parties**") harmless from and against any and all Claims for injury or death to persons or damage to property occurring within or about the Premises or the Project arising directly or indirectly out of use or occupancy of the Premises or the Project (including, without limitation, any act, omission or neglect by Tenant or any Tenant's Parties in or about the Premises or at the Project) or the a breach or default by Tenant in the performance of any of its obligations hereunder, unless caused solely by the willful misconduct or gross negligence of Landlord Indemnified Parties. Landlord shall not be liable to Tenant for, and Tenant assumes all risk of damage to, personal property (including, without limitation, loss of records kept within the Premises). Tenant further waives any and all Claims for injury to Tenant's business or loss of income relating to any such damage or destruction of personal property

(including, without limitation, any loss of records). Landlord Indemnified Parties shall not be liable for any damages arising from any act, omission or neglect of any tenant in the Project or of any other third party or Tenant Parties.

17. **Insurance.** Landlord shall, at no additional cost to Tenant (except as otherwise expressly provided in this Lease) maintain all risk property and, if applicable, sprinkler damage insurance covering the full replacement cost of the Project. Landlord shall further procure and maintain commercial general liability insurance with a single loss limit of not less than $2,000,000 for bodily injury and property damage with respect to the Project. Landlord may, but is not obligated to, maintain, at no additional cost to Tenant, such other insurance and additional coverages as it may deem necessary, including, but not limited to, flood, environmental hazard and earthquake, loss or failure of building equipment, errors and omissions, rental loss during the period of repair or rebuilding, workers' compensation insurance and fidelity bonds for employees employed to perform services and insurance for any improvements installed by Tenant or which are in addition to the standard improvements customarily furnished by Landlord without regard to whether or not such are made a part of the Project. The Project may be included in a blanket policy (in which case the cost of such insurance allocable to the Project will be determined by Landlord based upon the insurer's cost calculations). Tenant shall also reimburse Landlord for any increased premiums or additional insurance which Landlord reasonably deems reasonably necessary as a result of Tenant's particular use of the Premises.

Tenant, at its sole cost and expense, shall maintain during the Term: all risk or "**special form**" property insurance with business interruption and extra expense coverage, covering the full replacement cost of all property and improvements installed or placed in the Premises by Tenant at Tenant's expense; workers' compensation insurance with no less than the minimum limits required by law; employer's liability insurance with employers liability limits of $1,000,000 bodily injury by accident — each accident, $1,000,000 bodily injury by disease — policy limit, and $1,000,000 bodily injury by disease — each employee; and commercial general liability insurance, with a minimum limit of not less than $2,000,000 per occurrence for bodily injury and property damage with respect to the Premises. The commercial general liability insurance maintained by Tenant shall name Alexandria Real Estate Equities, Inc., and Landlord, its officers, directors, employees, managers, agents, sub-agents, constituent entities and lease signators (collectively, "**Landlord Insured Parties**"), as additional insureds; insure on an occurrence and not a claims-made basis; be issued by insurance companies which have a rating of not less than policyholder rating of A- and financial category rating of at least Class VII in "**Best's Insurance Guide**"; shall not be cancelable for nonpayment of premium unless 30 days prior written notice shall have been given to Landlord from the insurer; not contain a hostile fire exclusion; contain a contractual liability endorsement; and provide primary coverage to Landlord Insured Parties (any policy issued to Landlord Insured Parties providing duplicate or similar coverage shall be deemed excess over Tenant's policies, regardless of limits). Copies of such policies (if requested by Landlord), or certificates of insurance showing the limits of coverage required hereunder and showing Landlord as an additional insured, along with reasonable evidence of the payment of premiums for the applicable period, shall be delivered to Landlord by Tenant prior to (i) the earlier to occur of (x) the Commencement Date, or (y) the date that Tenant accesses the Premises under this Lease, and (ii) each renewal of said insurance. Tenant's policy may be a "**blanket policy**" with an aggregate per location endorsement which specifically provides that the amount of insurance shall not be

prejudiced by other losses covered by the policy. Tenant shall, at least 5 days prior to the expiration of such policies, furnish Landlord with renewal certificates.

In each instance where insurance is to name Landlord as an additional insured, Tenant shall upon written request of Landlord also designate and furnish certificates so evidencing Landlord as additional insured to: (i) any lender of Landlord holding a security interest in the Project or any portion thereof, (ii) the landlord under any lease wherein Landlord is tenant of the real property on which the Project is located, if the interest of Landlord is or shall become that of a tenant under a ground or other underlying lease rather than that of a fee owner, and/or (iii) any management company retained by Landlord to manage the Project.

The property insurance obtained by Landlord and Tenant shall include a waiver of subrogation by the insurers and all rights based upon an assignment from its insured, against Landlord or Tenant, and their respective officers, directors, employees, managers, agents, invitees and contractors ("**Related Parties**"), in connection with any loss or damage thereby insured against. Neither party nor its respective Related Parties shall be liable to the other for loss or damage caused by any risk insured against under property insurance required to be maintained hereunder, and each party waives any claims against the other party, and its respective Related Parties, for such loss or damage. The failure of a party to insure its property shall not void this waiver. Landlord and its respective Related Parties shall not be liable for, and Tenant hereby waives all claims against such parties for, business interruption and losses occasioned thereby sustained by Tenant or any person claiming through Tenant resulting from any accident or occurrence in or upon the Premises or the Project from any cause whatsoever. If the foregoing waivers shall contravene any law with respect to exculpatory agreements, the liability of Landlord or Tenant shall be deemed not released but shall be secondary to the other's insurer.

Landlord may require insurance policy limits to be raised to conform with requirements of Landlord's lender and/or to bring coverage limits to levels then being generally required of new tenants within the Project.

18. **Restoration.** If, at any time during the Term, the Project or the Premises are damaged or destroyed by a fire or other insured casualty, Landlord shall notify Tenant within 60 days after discovery of such damage as to the amount of time Landlord reasonably estimates it will take to restore the Project or the Premises, as applicable (the "**Restoration Period**"). If the Restoration Period is estimated to exceed 9 months following the discovery of the casualty (the "**Maximum Restoration Period**"), Landlord may, in such notice, elect to terminate this Lease as of the date that is 75 days after the date of discovery of such damage or destruction; provided, however, that notwithstanding Landlord's election to restore, Tenant may elect to terminate this Lease by written notice to Landlord delivered within 10 business days of receipt of a notice from Landlord estimating a Restoration Period for the Premises longer than the Maximum Restoration Period. Unless either Landlord or Tenant so elect to terminate this Lease, Landlord shall, subject to receipt of sufficient insurance proceeds, promptly restore the Premises (excluding the improvements installed by Tenant or by Landlord and paid for by Tenant), subject to delays arising from the collection of insurance proceeds, from Force Majeure events or as needed to obtain any license, clearance or other authorization of any kind required to enter into and restore the Premises issued by any Governmental Authority having jurisdiction over the use, storage, handling, treatment, generation, release, disposal, removal or remediation of Hazardous Materials (as

defined in Section 30) in, on or about the Premises (collectively referred to herein as "**Hazardous Materials Clearances**"); provided, however, that if repair or restoration of the Premises is not substantially complete as of the end of the Maximum Restoration Period or, if longer, the Restoration Period, Landlord may, in its sole and absolute discretion, elect not to proceed with such repair and restoration, or Tenant may by written notice to Landlord delivered within 10 business days of the expiration of the Maximum Restoration Period or, if longer, the Restoration Period, elect to terminate this Lease, in which event Landlord shall be relieved of its obligation to make such repairs or restoration and this Lease shall terminate as of the date that is 75 days after the later of: (i) discovery of such damage or destruction, or (ii) the date all required Hazardous Materials Clearances are obtained, but Landlord shall retain any Rent paid and the right to any Rent payable by Tenant prior to such election by Landlord or Tenant.

Tenant, at its expense, shall promptly perform, subject to delays arising from the collection of insurance proceeds, from Force Majeure (as defined in Section 34) events or to obtain Hazardous Material Clearances, all repairs or restoration not required to be done by Landlord and shall promptly re-enter the Premises and commence doing business in accordance with this Lease. Notwithstanding the foregoing, either Landlord or Tenant may terminate this Lease upon written notice to the other if the Premises are damaged during the last year of the Term and Landlord reasonably estimates that it will take more than 2 months to repair such damage; provided, however, that such notice is delivered within 10 business days after the date that Landlord provides Tenant with written notice of the estimated Restoration Period. Notwithstanding anything to the contrary contained herein, Landlord shall also have the right to terminate this Lease if insurance proceeds are not available for such restoration. Rent shall be abated from the date all required Hazardous Material Clearances are obtained until the Premises are repaired and restored, in the proportion which the area of the Premises, if any, which is not usable by Tenant bears to the total area of the Premises, unless Landlord provides Tenant with other space during the period of repair that is suitable for the temporary conduct of Tenant's business. In the event that no Hazardous Material Clearances are required to be obtained by Tenant with respect to the Premises, rent abatement shall commence on the date of discovery of the damage or destruction. Such abatement shall be the sole remedy of Tenant, and except as provided in this Section 18, Tenant waives any right to terminate the Lease by reason of damage or casualty loss.

The provisions of this Lease, including this Section 18, constitute an express agreement between Landlord and Tenant with respect to any and all damage to, or destruction of, all or any part of the Premises, or any other portion of the Project, and any statute or regulation which is now or may hereafter be in effect shall have no application to this Lease or any damage or destruction to all or any part of the Premises or any other portion of the Project, the parties hereto expressly agreeing that this Section 18 sets forth their entire understanding and agreement with respect to such matters.

19. **Condemnation.** If the whole or any material part of the Premises or the Project is taken for any public or quasi-public use under governmental law, ordinance, or regulation, or by right of eminent domain, or by private purchase in lieu thereof (a "**Taking**" or "**Taken**"), and the Taking would in Landlord's reasonable judgment, either prevent or materially interfere with Tenant's use of the Premises or materially interfere with or impair Landlord's ownership or operation of the Project, then upon written notice by Landlord this Lease shall terminate and Rent shall be apportioned as of said date. If part of the Premises shall be Taken, and this Lease is not

terminated as provided above, Landlord shall promptly restore the Premises and the Project as nearly as is commercially reasonable under the circumstances to their condition prior to such partial Taking and the rentable square footage of the Building, the rentable square footage of the Premises, and the Rent payable hereunder during the unexpired Term shall be reduced to such extent as may be fair and reasonable under the circumstances. Upon any such Taking, Landlord shall be entitled to receive the entire price or award from any such Taking without any payment to Tenant, and Tenant hereby assigns to Landlord Tenant's interest, if any, in such award. Tenant shall have the right, to the extent that same shall not diminish Landlord's award, to make a separate claim against the condemning authority (but not Landlord) for such compensation as may be separately awarded or recoverable by Tenant for moving expenses and damage to Tenant's trade fixtures, if a separate award for such items is made to Tenant. Tenant hereby waives any and all rights it might otherwise have pursuant to any provision of state law to terminate this Lease upon a partial Taking of the Premises or the Project.

20. **Events of Default.** Each of the following events shall be a default ("**Default**") by Tenant under this Lease:

(a) Payment Defaults. Tenant shall fail to pay any installment of Rent or any other payment hereunder when due; provided, however, that Landlord will give Tenant notice and an opportunity to cure any failure to pay Rent within 3 days of any such notice not more than once in any 12 month period and Tenant agrees that such notice shall be in lieu of and not in addition to, or shall be deemed to be, any notice required by law.

(b) Insurance. Any insurance required to be maintained by Tenant pursuant to this Lease shall be canceled or terminated or shall expire or shall be reduced or materially changed, or Landlord shall receive a notice of nonrenewal of any such insurance and Tenant shall fail to obtain replacement insurance at least 5 days before the expiration of the current coverage.

(c) Abandonment. Tenant shall abandon the Premises.

(d) Improper Transfer. Tenant shall assign, sublease or otherwise transfer or attempt to transfer all or any portion of Tenant's interest in this Lease or the Premises except as expressly permitted herein, or Tenant's interest in this Lease shall be attached, executed upon, or otherwise judicially seized and such action is not released within 90 days of the action.

(e) Liens. Tenant shall fail to discharge or otherwise obtain the release of any lien placed upon the Premises in violation of this Lease within 10 days after any such lien is filed against the Premises.

(f) Insolvency Events. Tenant or any guarantor or surety of Tenant's obligations hereunder shall: (A) make a general assignment for the benefit of creditors; (B) commence any case, proceeding or other action seeking to have an order for relief entered on its behalf as a debtor or to adjudicate it a bankrupt or insolvent, or seeking reorganization, arrangement, adjustment, liquidation, dissolution or composition of it or its debts or seeking appointment of a receiver, trustee, custodian or other similar official for it or for all or of any substantial part of its property (collectively a "**Proceeding for Relief**"); (C) become the subject of any Proceeding for Relief which is not dismissed within 90 days of its filing or entry; or (D) die or suffer a legal disability

(if Tenant, guarantor, or surety is an individual) or be dissolved or otherwise fail to maintain its legal existence (if Tenant, guarantor or surety is a corporation, partnership or other entity).

(g) Estoppel Certificate or Subordination Agreement. Tenant fails to execute any document required from Tenant under Sections 23 or 27 within 5 days after a second notice requesting such document.

(h) License Agreement. Tenant is in default under the License Agreement (as defined in Section 39 below) beyond any applicable notice and cure period thereunder.

(i) Other Defaults. Tenant shall fail to comply with any provision of this Lease other than those specifically referred to in this Section 20, and, except as otherwise expressly provided herein, such failure shall continue for a period of 30 days after written notice thereof from Landlord to Tenant.

Any notice given under Section 20(i) hereof shall: (i) specify the alleged default, (ii) demand that Tenant cure such default, (iii) be in lieu of, and not in addition to, or shall be deemed to be, any notice required under any provision of applicable law, and (iv) not be deemed a forfeiture or a termination of this Lease unless Landlord elects otherwise in such notice; provided that if the nature of Tenant's default pursuant to Section 20(i) is such that it cannot be cured by the payment of money and reasonably requires more than 30 days to cure, then Tenant shall not be deemed to be in default if Tenant commences such cure within said 30 day period and thereafter diligently prosecutes the same to completion; provided, however, that such cure shall be completed no later than 60 days from the date of Landlord's notice.

21. **Landlord's Remedies.**

(a) **Payment By Landlord; Interest**. Upon a Default by Tenant hereunder, Landlord may, without waiving or releasing any obligation of Tenant hereunder, make such payment or perform such act. All sums so paid or incurred by Landlord, together with interest thereon, from the date such sums were paid or incurred, at the annual rate equal to 12% per annum or the highest rate permitted by law (the "**Default Rate**"), whichever is less, shall be payable to Landlord on demand as Additional Rent. Nothing herein shall be construed to create or impose a duty on Landlord to mitigate any damages resulting from Tenant's Default hereunder.

(b) **Late Payment Rent**. Late payment by Tenant to Landlord of Rent and other sums due will cause Landlord to incur costs not contemplated by this Lease, the exact amount of which will be extremely difficult and impracticable to ascertain. Such costs include, but are not limited to, processing and accounting charges and late charges which may be imposed on Landlord under any Mortgage covering the Premises. Therefore, if any installment of Rent due from Tenant is not received by Landlord within 5 days after the date such payment is due, Tenant shall pay to Landlord an additional sum equal to 6% of the overdue Rent as a late charge. Notwithstanding the foregoing, before assessing a late charge the first time in any calendar year, Landlord shall provide Tenant written notice of the delinquency and will waive the right if Tenant pays such delinquency within 5 days thereafter. The parties agree that this late charge represents a fair and reasonable estimate of the costs Landlord will incur by reason of late payment by Tenant. In addition to the

late charge, Rent not paid when due shall bear interest at the Default Rate from the 5th day after the date due until paid.

(c) **Remedies**. Upon the occurrence of a Default, Landlord, at its option, without further notice or demand to Tenant, shall have in addition to all other rights and remedies provided in this Lease, at law or in equity, the option to pursue any one or more of the following remedies, each and all of which shall be cumulative and nonexclusive, without any notice or demand whatsoever.

(i) Terminate this Lease, or at Landlord's option, Tenant's right to possession only, in which event Tenant shall immediately surrender the Premises to Landlord, and if Tenant fails to do so, Landlord may, without prejudice to any other remedy which it may have for possession or arrearages in rent, enter upon and take possession of the Premises and expel or remove Tenant and any other person who may be occupying the Premises or any part thereof, without being liable for prosecution or any claim or damages therefor;

(ii) Upon any termination of this Lease, whether pursuant to the foregoing Section 21(c)(i) or otherwise, Landlord may recover from Tenant the following:

(A) The worth at the time of award of any unpaid rent which has been earned at the time of such termination; plus

(B) The worth at the time of award of the amount by which the unpaid rent which would have been earned after termination until the time of award exceeds the amount of such rental loss that Tenant proves could have been reasonably avoided; plus

(C) The worth at the time of award of the amount by which the unpaid rent for the balance of the Term after the time of award exceeds the amount of such rental loss that Tenant proves could have been reasonably avoided; plus

(D) Any other amount necessary to compensate Landlord for all the detriment proximately caused by Tenant's failure to perform its obligations under this Lease or which in the ordinary course of things would be likely to result therefrom, specifically including, but not limited to, brokerage commissions and advertising expenses incurred, expenses of remodeling the Premises or any portion thereof for a new tenant, whether for the same or a different use, and any special concessions made to obtain a new tenant; and

(E) At Landlord's election, such other amounts in addition to or in lieu of the foregoing as may be permitted from time to time by applicable law.

The term "**rent**" as used in this Section 21 shall be deemed to be and to mean all sums of every nature required to be paid by Tenant pursuant to the terms of this Lease, whether to Landlord or to others. As used in Sections 21(c)(ii)(A) and (B), above, the "**worth at the time of award**" shall be computed by allowing interest at the Default Rate. As used in Section 21(c)(ii)(C) above, the "**worth at the time of award**" shall be computed by discounting such amount at the discount rate of the Federal Reserve Bank of San Francisco at the time of award plus 1%.

(iii) Landlord may continue this Lease in effect after Tenant's Default and recover rent as it becomes due (Landlord and Tenant hereby agreeing that Tenant has the right to sublet or assign hereunder, subject only to reasonable limitations). Accordingly, if Landlord does not elect to terminate this Lease following a Default by Tenant, Landlord may, from time to time, without terminating this Lease, enforce all of its rights and remedies hereunder, including the right to recover all Rent as it becomes due.

(iv) Whether or not Landlord elects to terminate this Lease following a Default by Tenant, Landlord shall have the right to terminate any and all subleases, licenses, concessions or other consensual arrangements for possession entered into by Tenant and affecting the Premises or may, in Landlord's sole discretion, succeed to Tenant's interest in such subleases, licenses, concessions or arrangements. Upon Landlord's election to succeed to Tenant's interest in any such subleases, licenses, concessions or arrangements, Tenant shall, as of the date of notice by Landlord of such election, have no further right to or interest in the rent or other consideration receivable thereunder.

(v) Independent of the exercise of any other remedy of Landlord hereunder or under applicable law, Landlord may conduct an environmental test of the Premises as generally described in Section 30(d) hereof, at Tenant's expense.

(d) **Effect of Exercise**. Exercise by Landlord of any remedies hereunder or otherwise available shall not be deemed to be an acceptance of surrender of the Premises and/or a termination of this Lease by Landlord, it being understood that such surrender and/or termination can be effected only by the express written agreement of Landlord and Tenant. Any law, usage, or custom to the contrary notwithstanding, Landlord shall have the right at all times to enforce the provisions of this Lease in strict accordance with the terms hereof; and the failure of Landlord at any time to enforce its rights under this Lease strictly in accordance with same shall not be construed as having created a custom in any way or manner contrary to the specific terms, provisions, and covenants of this Lease or as having modified the same and shall not be deemed a waiver of Landlord's right to enforce one or more of its rights in connection with any subsequent default. A receipt by Landlord of Rent or other payment with knowledge of the breach of any covenant hereof shall not be deemed a waiver of such breach, and no waiver by Landlord of any provision of this Lease shall be deemed to have been made unless expressed in writing and signed by Landlord. To the greatest extent permitted by law, Tenant waives the service of notice of Landlord's intention to re-enter, re-take or otherwise obtain possession of the Premises as provided in any statute, or to institute legal proceedings to that end, and also waives all right of redemption in case Tenant shall be dispossessed by a judgment or by warrant of any court or judge. Any reletting of the Premises or any portion thereof shall be on such terms and conditions as Landlord in its sole discretion may determine. Landlord shall not be liable for, nor shall Tenant's obligations hereunder be diminished because of, Landlord's failure to relet the Premises or collect rent due in respect of such reletting or otherwise to mitigate any damages arising by reason of Tenant's Default.

22. **Assignment and Subletting.**

(a) **General Prohibition**. Without Landlord's prior written consent subject to and on the conditions described in this Section 22, Tenant shall not, directly or indirectly, voluntarily or by operation of law, assign this Lease or sublease the Premises or any part thereof or mortgage,

pledge, or hypothecate its leasehold interest or grant any concession or license within the Premises, and any attempt to do any of the foregoing shall be void and of no effect. If Tenant is a corporation, partnership or limited liability company, the shares or other ownership interests thereof which are not actively traded upon a stock exchange or in the over-the-counter market, a transfer or series of transfers whereby 50.1% or more of the issued and outstanding shares or other ownership interests of such corporation are, or voting control is, transferred (but excepting transfers upon deaths of individual owners) from a person or persons or entity or entities which were owners thereof at time of execution of this Lease to persons or entities who were not owners of shares or other ownership interests of the corporation, partnership or limited liability company at time of execution of this Lease, shall be deemed an assignment of this Lease requiring the consent of Landlord as provided in this Section 22. Notwithstanding the foregoing, Tenant shall have the right to obtain financing from institutional investors (including venture capital funding and corporate partners) which regularly invest in private biotechnology companies or undergo a public offering which results in a change in control of Tenant without such change of control constituting an assignment under this Section 22 requiring Landlord consent, provided that (i) Tenant notifies Landlord in writing of the financing at least 5 business days prior to the closing of the financing ((x) unless Tenant is prohibited from providing such notice by applicable Legal Requirements in which case Tenant shall notify Landlord promptly thereafter, and (y) if the transaction is subject to confidentiality requirements, Tenant's advance notification shall be subject to Landlord's execution of a non-disclosure agreement reasonably acceptable to Landlord and Tenant), and (ii) provided that in no event shall such financing result in a change in use of the Premises from the use contemplated by Tenant at the commencement of the Term.

(b) **Permitted Transfers**. If Tenant desires to assign, sublease, hypothecate or otherwise transfer this Lease or sublet the Premises, then at least 15 business days, but not more than 45 business days, before the date Tenant desires the assignment or sublease to be effective (the "**Assignment Date**"), Tenant shall give Landlord a notice (the "**Assignment Notice**") containing such information about the proposed assignee or sublessee, including the proposed use of the Premises and any Hazardous Materials proposed to be used, stored handled, treated, generated in or released or disposed of from the Premises, the Assignment Date, any relationship between Tenant and the proposed assignee or sublessee, and all material terms and conditions of the proposed assignment or sublease, including a copy of any proposed assignment or sublease in its final form, and such other information as Landlord may deem reasonably necessary or appropriate to its consideration whether to grant its consent. Landlord may, by giving written notice to Tenant within 15 business days after receipt of the Assignment Notice: (i) grant such consent, (ii) refuse such consent, in its sole and absolute discretion, or (iii) terminate this Lease with respect to the space described in the Assignment Notice as of the Assignment Date (an "**Assignment Termination**"). If Landlord delivers notice of its election to exercise an Assignment Termination, Tenant shall have the right to withdraw such Assignment Notice by written notice to Landlord of such election within 10 business days after Landlord's notice electing to exercise the Assignment Termination. If Tenant withdraws such Assignment Notice, this Lease shall continue in full force and effect. If Tenant does not withdraw such Assignment Notice, this Lease, and the term and estate herein granted, shall terminate as of the Assignment Date with respect to the space described in such Assignment Notice and Base Rent shall be proportionately adjusted. No failure of Landlord to exercise any such option to terminate this Lease, or to deliver a timely notice in response to the Assignment Notice, shall be deemed to be Landlord's consent to the proposed assignment, sublease or other transfer. Tenant shall pay to Landlord a fee equal to Two Thousand

Five Hundred Dollars ($2,500) in connection with its consideration of any Assignment Notice and/or its preparation or review of any consent documents. Notwithstanding anything contained in this Section 22(b) to the contrary, Tenant shall have the right to assign this Lease, upon 10 days prior written notice to Landlord ((x) unless Tenant is prohibited from providing such notice by applicable Legal Requirements in which case Tenant shall notify Landlord promptly thereafter, and (y) if the transaction is subject to confidentiality requirements, Tenant's advance notification shall be subject to Landlord's execution of a non-disclosure agreement reasonably acceptable to Landlord and Tenant) but without obtaining Landlord's prior written consent, to a corporation or other entity which is a successor-in-interest to Tenant, by way of merger, consolidation or corporate reorganization, or by the purchase of all or substantially all of the assets or the ownership interests of Tenant provided that (i) such merger or consolidation, or such acquisition or assumption, as the case may be, is for a good business purpose and not principally for the purpose of transferring the Lease, and (ii) the net worth (as determined in accordance with generally accepted accounting principles ("**GAAP**")) of the assignee is not less than the greater of the net worth (as determined in accordance with GAAP) of Tenant as of (A) the Commencement Date, or (B) as of the date of Tenant's most current quarterly or annual financial statements, and (iii) such assignee shall agree in writing to assume all of the terms, covenants and conditions of this Lease and the License Agreement (a "**Permitted Assignment**").

(c) **Additional Conditions**. As a condition to any such assignment or subletting, whether or not Landlord's consent is required, Landlord may require:

(i) that any assignee or subtenant agree, in writing at the time of such assignment or subletting, that if Landlord gives such party notice that Tenant is in default under this Lease, such party shall thereafter make all payments otherwise due Tenant directly to Landlord, which payments will be received by Landlord without any liability except to credit such payment against those due under the Lease, and any such third party shall agree to attorn to Landlord or its successors and assigns should this Lease be terminated for any reason; provided, however, in no event shall Landlord or its successors or assigns be obligated to accept such attornment; and

(ii) A list of Hazardous Materials, certified by the proposed assignee or sublessee to be true and correct, which the proposed assignee or sublessee intends to use, store, handle, treat, generate in or release or dispose of from the Premises, together with copies of all documents relating to such use, storage, handling, treatment, generation, release or disposal of Hazardous Materials by the proposed assignee or subtenant in the Premises or on the Project, prior to the proposed assignment or subletting, including, without limitation: permits; approvals; reports and correspondence; storage and management plans; plans relating to the installation of any storage tanks to be installed in or under the Project (provided, said installation of tanks shall only be permitted after Landlord has given its written consent to do so, which consent may be withheld in Landlord's sole and absolute discretion); and all closure plans or any other documents required by any and all federal, state and local Governmental Authorities for any storage tanks installed in, on or under the Project for the closure of any such tanks. Neither Tenant nor any such proposed assignee or subtenant is required, however, to provide Landlord with any portion(s) of the such documents containing information of a proprietary nature which, in and of themselves, do not contain a reference to any Hazardous Materials or hazardous activities.

(d) **No Release of Tenant, Sharing of Excess Rents**. Notwithstanding any assignment or subletting, Tenant and any guarantor or surety of Tenant's obligations under this Lease shall at all times remain fully and primarily responsible and liable for the payment of Rent and for compliance with all of Tenant's other obligations under this Lease. Other than in connection with a Permitted Assignment, Tenant shall be bound and obligated to pay Landlord as Additional Rent hereunder 50% of any base rent or other consideration paid by any sublessee or assignee under any such sublease or assignment within 30 days following receipt thereof by Tenant. If Tenant shall sublet the Premises or any part thereof, Tenant hereby immediately and irrevocably assigns to Landlord, as security for Tenant's obligations under this Lease, all rent from any such subletting, and Landlord as assignee and as attorney-in-fact for Tenant, or a receiver for Tenant appointed on Landlord's application, may collect such rent and apply it

(e) **No Waiver**. The consent by Landlord to an assignment or subletting shall not relieve Tenant or any assignees of this Lease or any sublessees of the Premises from obtaining the consent of Landlord to any further assignment or subletting nor shall it release Tenant or any assignee or sublessee of Tenant from full and primary liability under the Lease. The acceptance of Rent hereunder, or the acceptance of performance of any other term, covenant, or condition thereof, from any other person or entity shall not be deemed to be a waiver of any of the provisions of this Lease or a consent to any subletting, assignment or other transfer of the Premises.

(f) **Prior Conduct of Proposed Transferee**. Notwithstanding any other provision of this Section 22, if (i) the proposed assignee or sublessee of Tenant has been required by any prior landlord, lender or Governmental Authority to take remedial action in connection with Hazardous Materials contaminating a property, where the contamination resulted from such party's action or use of the property in question, (ii) the proposed assignee or sublessee is subject to an enforcement order issued by any Governmental Authority in connection with the use, storage, handling, treatment, generation, release or disposal of Hazardous Materials (including, without limitation, any order related to the failure to make a required reporting to any Governmental Authority), or (iii) because of the existence of a pre-existing environmental condition in the vicinity of or underlying the Project, the risk that Landlord would be targeted as a responsible party in connection with the remediation of such pre-existing environmental condition would be materially increased or exacerbated by the proposed use of Hazardous Materials by such proposed assignee or sublessee, Landlord shall have the absolute right to refuse to consent to any assignment or subletting to any such party.

23. **Estoppel Certificate.** Tenant shall, within 10 business days of written notice from Landlord, execute, acknowledge and deliver a statement in writing in any form reasonably requested by a proposed lender or purchaser, (i) certifying that this Lease is unmodified and in full force and effect (or, if modified, stating the nature of such modification and certifying that this Lease as so modified is in full force and effect) and the dates to which the rental and other charges are paid in advance, if any, (ii) acknowledging that there are not any uncured defaults on the part of Landlord hereunder, or specifying such defaults if any are claimed, and (iii) setting forth such further information with respect to the status of this Lease or the Premises as may be requested thereon. Any such statement may be relied upon by any prospective purchaser or encumbrancer of all or any portion of the real property of which the Premises are a part. Tenant's failure to deliver such statement within 5 days after the delivery to Tenant of a second written request for such certificate shall, at the option of Landlord, constitute a Default under this Lease, and, in any event,

shall be conclusive upon Tenant that the Lease is in full force and effect and without modification except as may be represented by Landlord in any certificate prepared by Landlord and delivered to Tenant for execution.

24. **Quiet Enjoyment.** So long as Tenant is not in Default under this Lease, Tenant shall, subject to the terms of this Lease, at all times during the Term, have peaceful and quiet enjoyment of the Premises against any person claiming by, through or under Landlord.

25. **Prorations.** All prorations required or permitted to be made hereunder shall be made on the basis of a 360 day year and 30 day months.

26. **Rules and Regulations.** Tenant shall, at all times during the Term and any extension thereof, comply with all reasonable rules and regulations at any time or from time to time established by Landlord covering use of the Premises and the Project. The current rules and regulations are attached hereto as Exhibit E. If there is any conflict between said rules and regulations and other provisions of this Lease, the terms and provisions of this Lease shall control. Landlord shall not have any liability or obligation for the breach of any rules or regulations by other tenants in the Project and shall not enforce such rules and regulations in a discriminatory manner.

27. **Subordination.** This Lease and Tenant's interest and rights hereunder are hereby made and shall be subject and subordinate at all times to the lien of any Mortgage now existing or hereafter created on or against the Project or the Premises, and all amendments, restatements, renewals, modifications, consolidations, refinancing, assignments and extensions thereof, without the necessity of any further instrument or act on the part of Tenant; provided, however that so long as there is no Default hereunder, Tenant's right to possession of the Premises shall not be disturbed by the Holder of any such Mortgage. Tenant agrees, at the election of the Holder of any such Mortgage, to attorn to any such Holder. Tenant agrees upon demand to execute, acknowledge and deliver such instruments, confirming such subordination, and such instruments of attornment as shall be requested by any such Holder, provided any such instruments contain appropriate non-disturbance provisions assuring Tenant's quiet enjoyment of the Premises as set forth in Section 24 hereof. Notwithstanding the foregoing, any such Holder may at any time subordinate its Mortgage to this Lease, without Tenant's consent, by notice in writing to Tenant, and thereupon this Lease shall be deemed prior to such Mortgage without regard to their respective dates of execution, delivery or recording and in that event such Holder shall have the same rights with respect to this Lease as though this Lease had been executed prior to the execution, delivery and recording of such Mortgage and had been assigned to such Holder. The term "**Mortgage**" whenever used in this Lease shall be deemed to include deeds of trust, security assignments and any other encumbrances, and any reference to the "**Holder**" of a Mortgage shall be deemed to include the beneficiary under a deed of trust.

28. **Surrender.** Upon the expiration of the Term or earlier termination of Tenant's right of possession, Tenant shall surrender the Premises to Landlord in the same condition as received, subject to any Alterations or Installations permitted by Landlord to remain in the Premises, free of Hazardous Materials brought upon, kept, used, stored, handled, treated, generated in, or released or disposed of from, the Premises by any person other than a Landlord Party during the Term or any holding over (collectively, "**Tenant HazMat Operations**") and released of all Hazardous

Materials Clearances, broom clean, ordinary wear and tear and casualty loss and condemnation covered by Sections 18 and 19 excepted. At least 3 months prior to the surrender of the Premises, Tenant shall deliver to Landlord a narrative description of the actions proposed (or required by any Governmental Authority) to be taken by Tenant in order to surrender the Premises (including any Installations permitted by Landlord to remain in the Premises) at the expiration or earlier termination of the Term, free from any residual impact from the Tenant HazMat Operations and otherwise released for unrestricted use and occupancy (the "**Surrender Plan**"). Such Surrender Plan shall be accompanied by a current listing of (i) all Hazardous Materials licenses and permits held by or on behalf of any Tenant Party with respect to the Premises, and (ii) all Hazardous Materials used, stored, handled, treated, generated, released or disposed of from the Premises, and shall be subject to the reasonable review and approval of Landlord's environmental consultant. In connection with the review and approval of the Surrender Plan, upon the request of Landlord, Tenant shall deliver to Landlord or its consultant such additional non-proprietary information concerning Tenant HazMat Operations as Landlord shall request. On or before such surrender, Tenant shall deliver to Landlord evidence that the approved Surrender Plan shall have been satisfactorily completed and Landlord shall have the right, subject to reimbursement at Tenant's expense as set forth below, to cause Landlord's environmental consultant to inspect the Premises and perform such additional procedures as may be deemed reasonably necessary to confirm that the Premises are, as of the effective date of such surrender or early termination of the Lease, free from any residual impact from Tenant HazMat Operations. Tenant shall reimburse Landlord, as Additional Rent, for the actual out-of-pocket expense incurred by Landlord for Landlord's environmental consultant to review and approve the Surrender Plan and to visit the Premises and verify satisfactory completion of the same, which cost shall not exceed $5,000. Landlord shall have the unrestricted right to deliver such Surrender Plan and any report by Landlord's environmental consultant with respect to the surrender of the Premises to third parties.

If Tenant shall fail to prepare or submit a Surrender Plan approved by Landlord, or if Tenant shall fail to complete the approved Surrender Plan, or if such Surrender Plan, whether or not approved by Landlord, shall fail to adequately address any residual effect of Tenant HazMat Operations in, on or about the Premises, Landlord shall have the right to take such actions as Landlord may deem reasonable or appropriate to assure that the Premises and the Project are surrendered free from any residual impact from Tenant HazMat Operations, the cost of which actions shall be reimbursed by Tenant as Additional Rent, without regard to the limitation set forth in the first paragraph of this Section 28.

Tenant shall immediately return to Landlord all keys and/or access cards to parking, the Project, restrooms or all or any portion of the Premises furnished to or otherwise procured by Tenant. If any such access card or key is lost, Tenant shall pay to Landlord, at Landlord's election, either the cost of replacing such lost access card or key or the cost of reprogramming the access security system in which such access card was used or changing the lock or locks opened by such lost key. Any Tenant's Property, Alterations and property not so removed by Tenant as permitted or required herein shall be deemed abandoned and may be stored, removed, and disposed of by Landlord at Tenant's expense, and Tenant waives all claims against Landlord for any damages resulting from Landlord's retention and/or disposition of such property. All obligations of Tenant hereunder not fully performed as of the termination of the Term, including the obligations of Tenant under Section 30 hereof, shall survive the expiration or earlier termination of the Term,

including, without limitation, indemnity obligations, payment obligations with respect to Rent and obligations concerning the condition and repair of the Premises.

29. **Waiver of Jury Trial.** TO THE EXTENT PERMITTED BY LAW, TENANT AND LANDLORD WAIVE ANY RIGHT TO TRIAL BY JURY OR TO HAVE A JURY PARTICIPATE IN RESOLVING ANY DISPUTE, WHETHER SOUNDING IN CONTRACT, TORT, OR OTHERWISE, BETWEEN LANDLORD AND TENANT ARISING OUT OF THIS LEASE OR ANY OTHER INSTRUMENT, DOCUMENT, OR AGREEMENT EXECUTED OR DELIVERED IN CONNECTION HEREWITH OR THE TRANSACTIONS RELATED HERETO.

30. **Environmental Requirements.**

(a) **Prohibition/Compliance/Indemnity**. Tenant shall not cause or permit any Hazardous Materials (as hereinafter defined) to be brought upon, kept, used, stored, handled, treated, generated in or about, or released or disposed of from, the Premises or the Project in violation of applicable Environmental Requirements (as hereinafter defined) by Tenant or any Tenant Party. If Tenant breaches the obligation stated in the preceding sentence, or if the presence of Hazardous Materials in the Premises during the Term or any holding over results in contamination of the Premises, the Project or any adjacent property or if contamination of the Premises, the Project or any adjacent property by Hazardous Materials brought into, kept, used, stored, handled, treated, generated in or about, or released or disposed of from, the Premises by anyone other than Landlord and Landlord's employees, agents and contractors otherwise occurs during the Term or any holding over, Tenant hereby indemnifies and shall defend and hold Landlord, its officers, directors, employees, agents and contractors harmless from any and all actions (including, without limitation, remedial or enforcement actions of any kind, administrative or judicial proceedings, and orders or judgments arising out of or resulting therefrom), costs, claims, damages (including, without limitation, punitive damages and damages based upon diminution in value of the Premises or the Project, or the loss of, or restriction on, use of the Premises or any portion of the Project), expenses (including, without limitation, attorneys', consultants' and experts' fees, court costs and amounts paid in settlement of any claims or actions), fines, forfeitures or other civil, administrative or criminal penalties, injunctive or other relief (whether or not based upon personal injury, property damage, or contamination of, or adverse effects upon, the environment, water tables or natural resources), liabilities or losses (collectively, "**Environmental Claims**") which arise during or after the Term as a result of such contamination. This indemnification of Landlord by Tenant includes, without limitation, costs incurred in connection with any investigation of site conditions or any cleanup, treatment, remedial, removal, or restoration work required by any federal, state or local Governmental Authority because of Hazardous Materials present in the air, soil or ground water above, on, or under the Premises. Without limiting the foregoing, if the presence of any Hazardous Materials on the Premises, the Building, the Project or any adjacent property caused or permitted by Tenant or any Tenant Party results in any contamination of the Premises, the Building, the Project or any adjacent property, Tenant shall promptly take all actions at its sole expense and in accordance with applicable Environmental Requirements as are necessary to return the Premises, the Building, the Project or any adjacent property to the condition existing prior to the time of such contamination, provided that Landlord's approval of such action shall first be obtained, which approval shall not unreasonably be withheld so long as such actions would not potentially have any material adverse

long-term or short-term effect on the Premises, the Building or the Project. Notwithstanding anything to the contrary contained in Section 28 or this Section 30, Tenant shall not be responsible for, and the indemnification and hold harmless obligation set forth in this paragraph shall not apply to (i) contamination in the Premises or the Project which Tenant can prove to Landlord's reasonable satisfaction existed in the Premises or the Project immediately prior to the Commencement Date, or (ii) the presence of any Hazardous Materials in the Premises or the Project which Tenant can prove to Landlord's reasonable satisfaction migrated from outside of the Premises into the Premises or outside the Project into the Project, unless in either case, the presence of such Hazardous Materials (x) is the result of a breach by Tenant of any of its obligations under this Lease, or (y) was caused, contributed to or exacerbated by Tenant or any Tenant Party.

(b) **Business**. Landlord acknowledges that it is not the intent of this Section 30 to prohibit Tenant from using the Premises for the Permitted Use. Tenant may operate its business according to prudent industry practices so long as the use or presence of Hazardous Materials is strictly and properly monitored according to all then applicable Environmental Requirements. As a material inducement to Landlord to allow Tenant to use Hazardous Materials in connection with its business, Tenant agrees to deliver to Landlord prior to the Commencement Date a list identifying each type of Hazardous Materials to be brought upon, kept, used, stored, handled, treated, generated on, or released or disposed of from, the Premises and setting forth any and all governmental approvals or permits required in connection with the presence, use, storage, handling, treatment, generation, release or disposal of such Hazardous Materials on or from the Premises ("**Hazardous Materials List**"). Upon Landlord's request, or any time that Tenant is required to deliver a Hazardous Materials List to any Governmental Authority (e.g., the fire department) in connection with Tenant's use or occupancy of the Premises, Tenant shall deliver to Landlord a copy of such Hazardous Materials List. Tenant shall deliver to Landlord true and correct copies of the following documents (the "**Haz Mat Documents**") relating to the use, storage, handling, treatment, generation, release or disposal of Hazardous Materials prior to the Commencement Date, or if unavailable at that time, concurrent with the receipt from or submission to a Governmental Authority: permits; approvals; reports and correspondence; storage and management plans, notice of violations of any Legal Requirements; plans relating to the installation of any storage tanks to be installed in or under the Project (provided, said installation of tanks shall only be permitted after Landlord has given Tenant its written consent to do so, which consent may be withheld in Landlord's sole and absolute discretion); all closure plans or any other documents required by any and all federal, state and local Governmental Authorities for any storage tanks installed in, on or under the Project for the closure of any such tanks; and a Surrender Plan (to the extent surrender in accordance with Section 28 cannot be accomplished in 3 months). Tenant is not required, however, to provide Landlord with any portion(s) of the Haz Mat Documents containing information of a proprietary nature which, in and of themselves, do not contain a reference to any Hazardous Materials or hazardous activities. It is not the intent of this Section to provide Landlord with information which could be detrimental to Tenant's business should such information become possessed by Tenant's competitors.

(c) **Tenant Representation and Warranty**. Tenant hereby represents and warrants to Landlord that (i) neither Tenant nor any of its legal predecessors has been required by any prior landlord, lender or Governmental Authority at any time to take remedial action in connection with Hazardous Materials contaminating a property which contamination was permitted by Tenant of such predecessor or resulted from Tenant's or such predecessor's action or use of the property in

question, and (ii) Tenant is not subject to any enforcement order issued by any Governmental Authority in connection with the use, storage, handling, treatment, generation, release or disposal of Hazardous Materials (including, without limitation, any order related to the failure to make a required reporting to any Governmental Authority). If Landlord determines that this representation and warranty was not true as of the date of this lease, Landlord shall have the right to terminate this Lease in Landlord's sole and absolute discretion.

(d) **Testing**. Landlord shall have the right to conduct annual tests of the Premises to determine whether any contamination of the Premises or the Project has occurred as a result of Tenant's use. Tenant shall be required to pay the cost of such annual test of the Premises if there is violation of this Section 30 or if contamination for which Tenant is responsible under this Section 30 is identified;. provided, however, that if Tenant conducts its own tests of the Premises using third party contractors and test procedures acceptable to Landlord which tests are certified to Landlord, Landlord shall accept such tests in lieu of the annual tests to be paid for by Tenant. In addition, at any time, and from time to time, prior to the expiration or earlier termination of the Term, Landlord shall have the right to conduct appropriate tests of the Premises and the Project to determine if contamination has occurred as a result of Tenant's use of the Premises. In connection with such testing, upon the request of Landlord, Tenant shall deliver to Landlord or its consultant such non-proprietary information concerning the use of Hazardous Materials in or about the Premises by Tenant or any Tenant Party. If contamination has occurred for which Tenant is liable under this Section 30, Tenant shall pay all costs to conduct such tests. If no such contamination is found, Landlord shall pay the costs of such tests. Landlord shall provide Tenant with a copy of all third party, non-confidential reports and tests of the Premises made by or on behalf of Landlord during the Term without representation or warranty and subject to a confidentiality agreement. Tenant shall, at its sole cost and expense, promptly and satisfactorily remediate any environmental conditions identified by such testing in accordance with all Environmental Requirements. Landlord's receipt of or satisfaction with any environmental assessment in no way waives any rights which Landlord may have against Tenant.

(e) **Control Areas**. Tenant shall be allowed to utilize up to its pro rata share of the Hazardous Materials inventory within any control area or zone (located within the Premises), as designated by the applicable building code, for chemical use or storage. As used in the preceding sentence, Tenant's pro rata share of any control areas or zones located within the Premises shall be determined based on the rentable square footage that Tenant leases within the applicable control area or zone. For purposes of example only, if a control area or zone contains 10,000 rentable square feet and 2,000 rentable square feet of a tenant's premises are located within such control area or zone (while such premises as a whole contains 5,000 rentable square feet), the applicable tenant's pro rata share of such control area would be 20%.

(f) **Underground Tanks**. Tenant shall have no right to use or install any underground or other storage tanks at the Project.

(g) **Tenant's Obligations**. Tenant's obligations under this Section 30 shall survive the expiration or earlier termination of the Lease. During any period of time after the expiration or earlier termination of this Lease required by Tenant or Landlord to complete the removal from the Premises of any Hazardous Materials (including, without limitation, the release and termination of any licenses or permits restricting the use of the Premises and the completion of the approved

Surrender Plan), Tenant shall continue to pay the full Rent in accordance with this Lease for any portion of the Premises not relet by Landlord in Landlord's sole discretion, which Rent shall be prorated daily.

(h) **Definitions**. As used herein, the term "**Environmental Requirements**" means all applicable present and future statutes, regulations, ordinances, rules, codes, judgments, orders or other similar enactments of any Governmental Authority regulating or relating to health, safety, or environmental conditions on, under, or about the Premises or the Project, or the environment, including without limitation, the following: the Comprehensive Environmental Response, Compensation and Liability Act; the Resource Conservation and Recovery Act; and all state and local counterparts thereto, and any regulations or policies promulgated or issued thereunder. As used herein, the term "**Hazardous Materials**" means and includes any substance, material, waste, pollutant, or contaminant listed or defined as hazardous or toxic, or regulated by reason of its impact or potential impact on humans, animals and/or the environment under any Environmental Requirements, asbestos and petroleum, including crude oil or any fraction thereof, natural gas liquids, liquefied natural gas, or synthetic gas usable for fuel (or mixtures of natural gas and such synthetic gas). As defined in Environmental Requirements, Tenant is and shall be deemed to be the "**operator**" of Tenant's "**facility**" and the "**owner**" of all Hazardous Materials brought on the Premises by Tenant or any Tenant Party, and the wastes, by-products, or residues generated, resulting, or produced therefrom.

31. **Tenant's Remedies/Limitation of Liability.** Landlord shall not be in default hereunder unless Landlord fails to perform any of its obligations hereunder within 30 days after written notice from Tenant specifying such failure (unless such performance will, due to the nature of the obligation, require a period of time in excess of 30 days, then after such period of time as is reasonably necessary). Upon any default by Landlord, Tenant shall give notice by registered or certified mail to any Holder of a Mortgage covering the Premises and to any landlord of any lease of property in or on which the Premises are located and Tenant shall offer such Holder and/or landlord a reasonable opportunity to cure the default, including time to obtain possession of the Project by power of sale or a judicial action if such should prove necessary to effect a cure; provided Landlord shall have furnished to Tenant in writing the names and addresses of all such persons who are to receive such notices. All obligations of Landlord hereunder shall be construed as covenants, not conditions; and, except as may be otherwise expressly provided in this Lease, Tenant may not terminate this Lease for breach of Landlord's obligations hereunder.

All obligations of Landlord under this Lease will be binding upon Landlord only during the period of its ownership of the Premises and not thereafter. The term "**Landlord**" in this Lease shall mean only the owner for the time being of the Premises. Upon the transfer by such owner of its interest in the Premises, such owner shall thereupon be released and discharged from all obligations of Landlord thereafter accruing, but such obligations shall be binding during the Term upon each new owner for the duration of such owner's ownership.

32. **Inspection and Access.** Landlord and its agents, representatives, and contractors may enter the Premises at any reasonable time to inspect the Premises and to make such repairs as may be required or permitted pursuant to this Lease and for any other business purpose. Landlord and Landlord's representatives may enter the Premises during business hours on not less than 48 hours advance written notice (except in the case of emergencies in which case no such notice shall

be required and such entry may be at any time) for the purpose of effecting any such repairs, inspecting the Premises, showing the Premises to prospective purchasers and, during the last 18 months of the Term, to prospective tenants or for any other business purpose. Landlord may erect a suitable sign on the Premises stating the Premises are available to let or that the Project is available for sale. Landlord may grant easements, make public dedications, designate Common Areas and create restrictions on or about the Premises, provided that no such easement, dedication, designation or restriction materially, adversely affects Tenant's use or occupancy of the Premises for the Permitted Use. At Landlord's request, Tenant shall execute such instruments as may be necessary for such easements, dedications or restrictions. Tenant shall at all times, except in the case of emergencies, have the right to escort Landlord or its agents, representatives, contractors or guests while the same are in the Premises, provided such escort does not materially and adversely affect Landlord's access rights hereunder.

33. **Security.** Tenant acknowledges and agrees that security devices and services, if any, while intended to deter crime may not in given instances prevent theft or other criminal acts and that Landlord is not providing any security services with respect to the Premises. Tenant agrees that Landlord shall not be liable to Tenant for, and Tenant waives any claim against Landlord with respect to, any loss by theft or any other damage suffered or incurred by Tenant in connection with any unauthorized entry into the Premises or any other breach of security with respect to the Premises. Tenant shall be solely responsible for the personal safety of Tenant's officers, employees, agents, contractors, guests and invitees while any such person is in, on or about the Premises and/or the Project. Tenant shall at Tenant's cost obtain insurance coverage to the extent Tenant desires protection against such criminal acts.

34. **Force Majeure.** Except for the payment of Rent, neither Landlord nor Tenant shall be held responsible or liable for delays in the performance of its obligations hereunder when caused by, related to, or arising out of acts of God, sinkholes or subsidence, strikes, lockouts, or other labor disputes, embargoes, quarantines, weather, national, regional, or local disasters, calamities, or catastrophes, inability to obtain labor or materials (or reasonable substitutes therefor) at reasonable costs or failure of, or inability to obtain, utilities necessary for performance, governmental restrictions, orders, limitations, regulations, or controls, national emergencies, delay in issuance or revocation of permits, enemy or hostile governmental action, terrorism, insurrection, riots, civil disturbance or commotion, fire or other casualty, and other causes or events beyond their reasonable control ("**Force Majeure**").

35. **Brokers.** Landlord and Tenant each represents and warrants that it has not dealt with any broker, agent or other person (collectively, "**Broker**") in connection with this transaction and that no Broker brought about this transaction, other than Hughes Marino and Cushman & Wakefield. Landlord and Tenant each hereby agree to indemnify and hold the other harmless from and against any claims by any Broker, other than the broker, if any named in this Section 35, claiming a commission or other form of compensation by virtue of having dealt with Tenant or Landlord, as applicable, with regard to this leasing transaction.

36. **Limitation on Landlord's Liability.** NOTWITHSTANDING ANYTHING SET FORTH HEREIN OR IN ANY OTHER AGREEMENT BETWEEN LANDLORD AND TENANT TO THE CONTRARY: (A) LANDLORD SHALL NOT BE LIABLE TO TENANT OR ANY OTHER PERSON FOR (AND TENANT AND EACH SUCH OTHER PERSON

ASSUME ALL RISK OF) LOSS, DAMAGE OR INJURY, WHETHER ACTUAL OR CONSEQUENTIAL TO: TENANT'S PERSONAL PROPERTY OF EVERY KIND AND DESCRIPTION, INCLUDING, WITHOUT LIMITATION TRADE FIXTURES, EQUIPMENT, INVENTORY, SCIENTIFIC RESEARCH, SCIENTIFIC EXPERIMENTS, LABORATORY ANIMALS, PRODUCT, SPECIMENS, SAMPLES, AND/OR SCIENTIFIC, BUSINESS, ACCOUNTING AND OTHER RECORDS OF EVERY KIND AND DESCRIPTION KEPT AT THE PREMISES AND ANY AND ALL INCOME DERIVED OR DERIVABLE THEREFROM; (B) THERE SHALL BE NO PERSONAL RECOURSE TO LANDLORD FOR ANY ACT OR OCCURRENCE IN, ON OR ABOUT THE PREMISES OR ARISING IN ANY WAY UNDER THIS LEASE OR ANY OTHER AGREEMENT BETWEEN LANDLORD AND TENANT WITH RESPECT TO THE SUBJECT MATTER HEREOF AND ANY LIABILITY OF LANDLORD HEREUNDER SHALL BE STRICTLY LIMITED SOLELY TO LANDLORD'S INTEREST IN THE PROJECT OR ANY PROCEEDS FROM SALE OR CONDEMNATION THEREOF AND ANY INSURANCE PROCEEDS PAYABLE IN RESPECT OF LANDLORD'S INTEREST IN THE PROJECT OR IN CONNECTION WITH ANY SUCH LOSS; AND (C) IN NO EVENT SHALL ANY PERSONAL LIABILITY BE ASSERTED AGAINST LANDLORD IN CONNECTION WITH THIS LEASE NOR SHALL ANY RECOURSE BE HAD TO ANY OTHER PROPERTY OR ASSETS OF LANDLORD OR ANY OF LANDLORD'S OFFICERS, DIRECTORS, EMPLOYEES, AGENTS OR CONTRACTORS. UNDER NO CIRCUMSTANCES SHALL LANDLORD OR ANY OF LANDLORD'S OFFICERS, DIRECTORS, EMPLOYEES, AGENTS OR CONTRACTORS BE LIABLE FOR INJURY TO TENANT'S BUSINESS OR FOR ANY LOSS OF INCOME OR PROFIT THEREFROM.

37. **Severability.** If any clause or provision of this Lease is illegal, invalid or unenforceable under present or future laws, then and in that event, it is the intention of the parties hereto that the remainder of this Lease shall not be affected thereby. It is also the intention of the parties to this Lease that in lieu of each clause or provision of this Lease that is illegal, invalid or unenforceable, there be added, as a part of this Lease, a clause or provision as similar in effect to such illegal, invalid or unenforceable clause or provision as shall be legal, valid and enforceable.

38. **Signs; Exterior Appearance.** Tenant shall not, without the prior written consent of Landlord, which may be granted or withheld in Landlord's sole discretion: (i) attach any awnings, exterior lights, decorations, balloons, flags, pennants, banners, painting or other projection to any outside wall of the Project, (ii) use any curtains, blinds, shades or screens other than Landlord's standard window coverings, (iii) coat or otherwise sunscreen the interior or exterior of any windows, (iv) place any bottles, parcels, or other articles on the window sills, (v) place any equipment, furniture or other items of personal property on any exterior balcony, or (vi) paint, affix or exhibit on any part of the Premises or the Project any signs, notices, window or door lettering, placards, decorations, or advertising media of any type which can be viewed from the exterior of the Premises. Interior signs on doors and the Building directory shall be inscribed, painted or affixed for Tenant by Landlord at the sole cost and expense of Tenant, and shall be of a size, color and type acceptable to Landlord. Nothing may be placed on the exterior of corridor walls or corridor doors other than Landlord's standard lettering. The directory tablet shall be provided exclusively for the display of the name and location of tenants.

Tenant shall have non-exclusive right to signage bearing Tenant's name and logo on a location on the Building reasonably acceptable to Landlord (the "**Building Sign**").

Notwithstanding the foregoing, Tenant acknowledges and agrees that the Building Sign including, without limitation, the size, color and type, shall be subject to Landlord's prior written approval, which shall not be unreasonably withheld and shall be consistent with Landlord's signage program at the Project and applicable Legal Requirements. Tenant shall be responsible, at Tenant's sole cost and expense, for the installation if the Building Sign, maintenance of the Building Sign, for the removal of the Building Sign at the expiration or earlier termination of this Lease and for the repair of all damage resulting from such removal.

39. **Must-Take Premises.**

(a) **Initial Must-Take Premises**. Concurrently with the execution and delivery of this Lease by the parties, Landlord, as "**Licensor,**" and Tenant, as "**Licensee,**" have entered into a license agreement (the "**License Agreement**") pursuant to which Tenant will license from Landlord certain space, initially consisting of approximately 15,833 rentable square feet in the Building (the "**Licensed Premises**"). Tenant acknowledges that the Premises is not separately demised from the Licensed Premises. Commencing on the first annual anniversary of the Commencement Date, the (i) then-existing Premises shall be expanded to include a portion of the Licensed Premises equal to approximately 724 rentable square feet, (ii) rentable square footage of the Premises shall be increased to 5,111 rentable square feet, and (iii) rentable square footage of the Licensed Premises under the License Agreement shall be reduced to approximately 15,109 rentable square feet.

(b) **Second Must-Take Premises**. Commencing on the second annual anniversary of the Commencement Date, the (i) then-existing Premises shall be expanded to include a portion of the Licensed Premises equal to approximately 679 rentable square feet, (ii) rentable square footage of the Premises shall be increased to 5,790 rentable square feet, and (iii) rentable square footage of the Licensed Premises under the License Agreement shall be reduced to approximately 14,430 rentable square feet.

(c) **Third Must-Take Premises**. Commencing on the third annual anniversary of the Commencement Date, the (i) then-existing Premises shall be expanded to include a portion of the Licensed Premises equal to approximately 634 rentable square feet, (ii) rentable square footage of the Premises shall be increased to 6,424 rentable square feet, and (iii) rentable square footage of the Licensed Premises under the License Agreement shall be reduced to approximately 13,796 rentable square feet.

40. **The Alexandria Amenities.**

(a) **Generally**. ARE-SD Region No. 17, LLC, a Delaware limited liability company ("**The Alexandria Landlord**") has constructed certain amenities at the property owned by The Alexandria Landlord located at 10996 Torreyana Road, San Diego, California ("**The Alexandria**"), which, as of the date of this Lease, include, without limitation, shared conference facilities ("**Shared Conference Facilities**"), a fitness center and restaurant (collectively, the "**Amenities**") for non-exclusive use by (a) Tenant, (b) other tenants of the Project, (c) Landlord, (d) the tenants of The Alexandria Landlord, (e) The Alexandria Landlord, (e) other affiliates of Landlord, The Alexandria Landlord and Alexandria Real Estate Equities, Inc. ("**ARE**"), (f) the tenants of such other affiliates of Landlord, The Alexandria Landlord and ARE, and (g) any other

parties permitted by The Alexandria Landlord (collectively, "**Users**"). Landlord, The Alexandria Landlord, ARE, and all affiliates of Landlord, Alexandria Landlord and ARE may be referred to collectively herein as the "**ARE Parties.**" Notwithstanding anything to the contrary contained herein, Tenant acknowledges and agrees that The Alexandria Landlord shall have the right, at the sole discretion of The Alexandria Landlord, to not make the Amenities available for use by some or all currently contemplated Users (including Tenant). The Alexandria Landlord shall have the sole right to determine all matters related to the Amenities including, without limitation, relating to the reconfiguration, relocation, modification or removal of any of the Amenities at The Alexandria and/or to revise, expand or discontinue any of the services (if any) provided in connection with the Amenities. Tenant acknowledges and agrees that Landlord has not made any representations or warranties regarding the availability of the Amenities and that Tenant is not entering into this Lease relying on the continued availability of the Amenities to Tenant.

(b) **License**. Commencing on the Commencement Date, and so long as The Alexandria and the Project continue to be owned by affiliates of ARE, Tenant shall have the non-exclusive right to the use of the available Amenities in common with other Users pursuant to the terms of this Section 40. Tenant shall be entitled to 40 passes to the fitness center located at The Alexandria for use by employees of Tenant employed at the Premises. If any employee of Tenant to whom a fitness center pass has been issued ceases to be an employee of Tenant at the Premises or any employee to whom an access card (which does not include a fitness center pass) has been issued ceases to be an employee of Tenant at the Premises, Tenant shall immediately upon such employee's change in status collect such employee's pass or access card, as applicable, and deliver it to Landlord along with written notice of such employee's change in status.

Commencing on the Commencement Date, Tenant shall pay to Landlord a fixed fee during Term in the amount of $2,000.00 per month ("**Amenities Fee**"), which Amenities Fee shall by payable on the first day of each month during the Term whether or not Tenant elects to use any or all of the Amenities.

(c) **Shared Conference Facilities**. Use by Tenant of the Shared Conference Facilities and restaurant at The Alexandria shall be in common with other Users with scheduling procedures reasonably determined by The Alexandria Landlord or The Alexandria Landlord's then designated event operator ("**Event Operator**"). Tenant's use of the Shared Conference Facilities shall be subject to the payment by Tenant to The Alexandria Landlord of a fee equal to The Alexandria Landlord's quoted rates for the usage of the Shared Conference Facilities in effect at the time of Tenant's scheduling discounted by 30%. Tenant's use of the conference rooms in the Shared Conference Area shall be subject to availability and The Alexandria Landlord (or, if applicable, Event Operator) reserves the right to exercise its reasonable discretion in the event of conflicting scheduling requests among Users. Tenant hereby acknowledges that (i) Biocom/San Diego, a California non-profit corporation ("**Biocom**") has the right to reserve the Shared Conference Facilities and any reservable dining area(s) included within the Amenities for up to 50% of the time that such Shared Conference Facilities and reservable dining area(s) are available for use by Users each calendar month, and (ii) Illumina, Inc., a Delaware corporation, has the exclusive use of the main conference room within the Shared Conference Facilities for up to 4 days per calendar month.

Tenant shall be required to use the food service operator designated by The Alexandria Landlord at The Alexandria (the "**Designated Food and Beverage Operator**") for any food and/or beverage service or catered events held by Tenant in the Shared Conference Facilities. As of the date of this Lease, the Designated Food and Beverage Operator is The Farmer and the Seahorse. The Alexandria Landlord has the right, in its sole and absolute discretion, to change the Designated Food and Beverage Operator at any time. Tenant may not use any vendors other than the Designated Food and Beverage Operator nor may Tenant supply its own food and/or beverages in connection with any food and/or beverage service or catered events held by Tenant in the Shared Conference Facilities.

Tenant shall, at Tenant's sole cost and expense, (i) be responsible for the set-up of the Shared Conference Facilities in connection with Tenant's use (including, without limitation ensuring that Tenant has a sufficient number of chairs and tables and the appropriate equipment), and (ii) surrender the Shared Conference Facilities after each time that Tenant uses the Shared Conference Facilities free of Tenant's personal property, in substantially the same set up and same condition as received, and free of any debris and trash. If Tenant fails to restore and surrender the Shared Conference Facilities as required by sub-section (ii) of the immediately preceding sentence, such failure shall constitute a "**Shared Facilities Default.**" Each time that Landlord reasonably determines that Tenant has committed a Shared Facilities Default, Tenant shall be required to pay Landlord a penalty within 5 days after notice from Landlord of such Shared Facilities Default. The penalty payable by Tenant in connection with the first Shared Facilities Default shall be $200. The penalty payable shall increase by $50 for each subsequent Shared Facilities Default (for the avoidance of doubt, the penalty shall be $250 for the second Shared Facilities Default, shall be $300 for the third Shared Facilities Default, etc.). In addition to the foregoing, Tenant shall be responsible for reimbursing The Alexandria Landlord or Landlord, as applicable, for all costs expended by The Alexandria Landlord or Landlord, as applicable, in repairing any damage to the Shared Conference Facilities, the Amenities, or The Alexandria caused by Tenant or any Tenant Related Party. The provisions of this Section 40(c) shall survive the expiration or earlier termination of this Lease.

(d) **Restaurant**. Tenant's employees that have been issued an access card to The Alexandria shall have the right, along with other Users, to access and use the restaurant located at The Alexandria. The operator of the restaurant has agreed to provide Tenant's employees possessing an access card with a 20% discount on certain food items (not including alcohol) purchased at the restaurant (on an individual basis and not with respect to entire tables or checks), which discount shall not be transferrable.

(e) **Rules and Regulations**. Tenant shall be solely responsible for paying for any and all ancillary services (e.g., audio visual equipment) provided to Tenant, all food services operators and any other third party vendors providing services to Tenant at The Alexandria. Tenant shall use the Amenities (including, without limitation, the Shared Conference Facilities) in compliance with all applicable Legal Requirements and any rules and regulations imposed by The Alexandria Landlord or Landlord from time to time and in a manner that will not interfere with the rights of other Users. The use of Amenities other than the Shared Conference Facilities by employees of Tenant shall be in accordance with the terms and conditions of the standard licenses, indemnification and waiver agreement required by The Alexandria Landlord or the operator of the Amenities to be executed by all persons wishing to use such Amenities. Neither The Alexandria

Landlord nor Landlord (nor, if applicable, any other affiliate of Landlord) shall have any liability or obligation for the breach of any rules or regulations by other Users with respect to the Amenities. Tenant shall not make any alterations, additions, or improvements of any kind to the Shared Conference Facilities, the Amenities or The Alexandria.

Tenant acknowledges and agrees that The Alexandria Landlord shall have the right at any time and from time to time to reconfigure, relocate, modify or remove any of the Amenities at The Alexandria and/or to revise, expand or discontinue any of the services (if any) provided in connection with the Amenities.

(f) **Waiver of Liability and Indemnification**. Tenant warrants that it will use reasonable care to prevent damage to property and injury to persons while on The Alexandria. Tenant waives any claims it or any Tenant Parties may have against any ARE Parties relating to, arising out of or in connection with the Amenities and any entry by Tenant and/or any Tenant Parties onto The Alexandria, and Tenant releases and exculpates all ARE Parties from any liability relating to, arising out of or in connection with the Amenities and any entry by Tenant and/or any Tenant Parties onto The Alexandria. Tenant hereby agrees to indemnify, defend, and hold harmless the ARE Parties from any claim of damage to property or injury to person relating to, arising out of or in connection with (i) the use of the Amenities by Tenant or any Tenant Parties, and (ii) any entry by Tenant and/or any Tenant Parties onto The Alexandria, except to the extent caused by the willful misconduct or negligence of any ARE Party. The provisions of this Section 40 shall survive the expiration or earlier termination of this Lease.

(g) **Insurance**. As of the Amenities Commencement Date, Tenant shall cause The Alexandria Landlord to be named as an additional insured under the commercial general liability policy of insurance that Tenant is required to maintain pursuant to Section 17 of this Lease.

41. **Intentionally Omitted.**

42. **Miscellaneous.**

(a) **Notices**. All notices or other communications between the parties shall be in writing and shall be deemed duly given upon delivery or refusal to accept delivery by the addressee thereof if delivered in person, or upon actual receipt if delivered by reputable overnight guaranty courier, addressed and sent to the parties at their addresses set forth above. Landlord and Tenant may from time to time by written notice to the other designate another address for receipt of future notices.

(b) **Joint and Several Liability**. If and when included within the term "**Tenant,**" as used in this instrument, there is more than one person or entity, each shall be jointly and severally liable for the obligations of Tenant.

(c) **Financial Information**. Upon request from Landlord, Tenant shall furnish Landlord with true and complete copies of (i) Tenant's most recent audited annual financial statements within 90 days of the end of each of Tenant's fiscal years during the Term, (ii) Tenant's most recent unaudited quarterly financial statements within 45 days of the end of each of Tenant's first three fiscal quarters of each of Tenant's fiscal years during the Term, (iii) not more than once in any calendar year, updated business plans, including cash flow projections and/or pro forma balance sheets and income statements, all of which shall be treated by Landlord as confidential

information belonging to Tenant, (iv) not more than once in any calendar year, corporate brochures and/or profiles prepared by Tenant for prospective investors, and (v) not more than once in any calendar year, any other financial information or summaries that Tenant typically provides to its lenders or shareholders. Landlord shall treat Tenant's financial information as confidential information belonging to Tenant and will not disclose the same to third parties other than on a need-to-know basis to Landlord's affiliates, legal, financial or tax advisors, consultants, potential lenders and potential purchasers and as required by Legal Requirements.

(d) **Recordation**. Neither this Lease nor a memorandum of lease shall be filed by or on behalf of Tenant in any public record. Landlord may prepare and file, and upon request by Landlord Tenant will execute, a memorandum of lease.

(e) **Interpretation**. The normal rule of construction to the effect that any ambiguities are to be resolved against the drafting party shall not be employed in the interpretation of this Lease or any exhibits or amendments hereto. Words of any gender used in this Lease shall be held and construed to include any other gender, and words in the singular number shall be held to include the plural, unless the context otherwise requires. The captions inserted in this Lease are for convenience only and in no way define, limit or otherwise describe the scope or intent of this Lease, or any provision hereof, or in any way affect the interpretation of this Lease.

(f) **Not Binding Until Executed**. The submission by Landlord to Tenant of this Lease shall have no binding force or effect, shall not constitute an option for the leasing of the Premises, nor confer any right or impose any obligations upon either party until execution of this Lease by both parties.

(g) **Limitations on Interest**. It is expressly the intent of Landlord and Tenant at all times to comply with applicable law governing the maximum rate or amount of any interest payable on or in connection with this Lease. If applicable law is ever judicially interpreted so as to render usurious any interest called for under this Lease, or contracted for, charged, taken, reserved, or received with respect to this Lease, then it is Landlord's and Tenant's express intent that all excess amounts theretofore collected by Landlord be credited on the applicable obligation (or, if the obligation has been or would thereby be paid in full, refunded to Tenant), and the provisions of this Lease immediately shall be deemed reformed and the amounts thereafter collectible hereunder reduced, without the necessity of the execution of any new document, so as to comply with the applicable law, but so as to permit the recovery of the fullest amount otherwise called for hereunder.

(h) **Choice of Law**. Construction and interpretation of this Lease shall be governed by the internal laws of the state in which the Premises are located, excluding any principles of conflicts of laws.

(i) **Time**. Time is of the essence as to the performance of Tenant's obligations under this Lease.

(j) **OFAC**. Tenant and all beneficial owners of Tenant are currently (a) in compliance with and shall at all times during the Term of this Lease remain in compliance with the regulations of the Office of Foreign Assets Control ("**OFAC**") of the U.S. Department of Treasury and any

statute, executive order, or regulation relating thereto (collectively, the "**OFAC Rules**"), (b) not listed on, and shall not during the term of this Lease be listed on, the Specially Designated Nationals and Blocked Persons List, Foreign Sanctions Evaders List, or the Sectoral Sanctions Identification List, which are all maintained by OFAC and/or on any other similar list maintained by OFAC or other governmental authority pursuant to any authorizing statute, executive order, or regulation, and (c) not a person or entity with whom a U.S. person is prohibited from conducting business under the OFAC Rules.

(k) **Incorporation by Reference**. All exhibits and addenda attached hereto are hereby incorporated into this Lease and made a part hereof. If there is any conflict between such exhibits or addenda and the terms of this Lease, such exhibits or addenda shall control.

(l) **Entire Agreement**. This Lease, including the exhibits attached hereto, constitutes the entire agreement between Landlord and Tenant pertaining to the subject matter hereof and supersedes all prior and contemporaneous agreements, understandings, letters of intent, negotiations and discussions, whether oral or written, of the parties, and there are no warranties, representations or other agreements, express or implied, made to either party by the other party in connection with the subject matter hereof except as specifically set forth herein.

(m) **No Accord and Satisfaction**. No payment by Tenant or receipt by Landlord of a lesser amount than the monthly installment of Base Rent or any Additional Rent will be other than on account of the earliest stipulated Base Rent and Additional Rent, nor will any endorsement or statement on any check or letter accompanying a check for payment of any Base Rent or Additional Rent be an accord and satisfaction. Landlord may accept such check or payment without prejudice to Landlord's right to recover the balance of such Rent or to pursue any other remedy provided in this Lease.

(n) **Hazardous Activities**. Notwithstanding any other provision of this Lease, Landlord, for itself and its employees, agents and contractors, reserves the right to refuse to perform any repairs or services in any portion of the Premises which, pursuant to Tenant's routine safety guidelines, practices or custom or prudent industry practices, require any form of protective clothing or equipment other than safety glasses. In any such case, Tenant shall contract with parties who are acceptable to Landlord, in Landlord's reasonable discretion, for all such repairs and services.

(o) **Redevelopment of Project**. Tenant acknowledges that Landlord, in its sole discretion, may from time to time, subject to the third sentence of Section 1, expand, renovate and/or reconfigure the Project as the same may exist from time to time and, in connection therewith or in addition thereto, as the case may be, from time to time without limitation: (a) change the shape, size, location, number and/or extent of any improvements, buildings, structures, lobbies, hallways, entrances, exits, parking and/or parking areas relative to any portion of the Project; (b) modify, eliminate and/or add any buildings, improvements, and parking structure(s) either above or below grade, to the Project, the Common Areas and/or any other portion of the Project and/or make any other changes thereto affecting the same; and (c) make any other changes, additions and/or deletions in any way affecting the Project and/or any portion thereof as Landlord may elect from time to time, including without limitation, additions to and/or deletions from the land comprising the Project, the Common Areas and/or any other portion of the Project.

Notwithstanding anything to the contrary contained in this Lease, Tenant shall have no right to seek damages (including abatement of Rent) or to cancel or terminate this Lease because of any proposed changes, expansion, renovation or reconfiguration of the Project nor shall Tenant have the right to restrict, inhibit or prohibit any such changes, expansion, renovation or reconfiguration; provided, however, Landlord shall not change the size, dimensions, location or Tenant's Permitted Use of the Premises.

(p) **Discontinued Use**. Subject to the terms of Section 18, if, at any time following the Rent Commencement Date, Tenant does not continuously operate its business in the Premises for a period of 180 consecutive days, Landlord may, but is not obligated to, elect to terminate this Lease upon 30 days' written notice to Tenant, whereupon this Lease shall terminate 30 days' after Landlord's delivery of such written notice ("**Termination Date**"), and Tenant shall vacate the Premises and deliver possession thereof to Landlord in the condition required by the terms of this Lease on or before the Termination Date and Tenant shall have no further obligations under this Lease except for those accruing prior to the Termination Date and those which, pursuant to the terms of the Lease, survive the expiration or early termination of the Lease.

(q) **EV Charging Stations**. Landlord shall not unreasonably withhold its consent to Tenant's written request to install 1 or more electric vehicle car charging stations ("**EV Stations**") in the parking area serving the Project; provided, however, that Tenant complies with all reasonable requirements, standards, rules and regulations which may be imposed by Landlord, at the time Landlord's consent is granted, in connection with Tenant's installation, maintenance, repair and operation of such EV Stations, which may include, without limitation, the charge to Tenant of a reasonable monthly rental amount for the parking spaces used by Tenant for such EV Stations, Landlord's designation of the location of Tenant's EV Stations, and Tenant's payment of all costs whether incurred by Landlord or Tenant in connection with the installation, maintenance, repair and operation of each Tenant's EV Station(s). Nothing contained in this paragraph is intended to increase the number of parking spaces which Tenant is otherwise entitled to use at the Project under Section 10 of this Lease nor impose any additional obligations on Landlord with respect to Tenant's parking rights at the Project.

(r) **California Accessibility Disclosure**. For purposes of Section 1938(a) of the California Civil Code, Landlord hereby discloses to Tenant, and Tenant hereby acknowledges, that the Project has not undergone inspection by a Certified Access Specialist (CASp). In addition, the following notice is hereby provided pursuant to Section 1938(e) of the California Civil Code: "**A** Certified Access Specialist (CASp) can inspect the subject premises and determine whether the subject premises comply with all of the applicable construction-related accessibility standards under state law. Although state law does not require a CASp inspection of the subject premises, the commercial property owner or lessor may not prohibit the lessee or tenant from obtaining a CASp inspection of the subject premises for the occupancy or potential occupancy of the lessee or tenant, if requested by the lessee or tenant. The parties shall mutually agree on the arrangements for the time and manner of the CASp inspection, the payment of the fee for the CASp inspection, and the cost of making any repairs necessary to correct violations of construction-related accessibility standards within the premises." In furtherance of and in connection with such notice: (i) Tenant, having read such notice and understanding Tenant's right to request and obtain a CASp inspection, hereby elects not to obtain such CASp inspection and forever waives its rights to obtain a CASp inspection with respect to the Premises, Building and/or Project to the extent permitted by

Legal Requirements; and (ii) if the waiver set forth in clause (i) hereinabove is not enforceable pursuant to Legal Requirements, then Landlord and Tenant hereby agree as follows (which constitutes the mutual agreement of the parties as to the matters described in the last sentence of the foregoing notice): (A) Tenant shall have the one-time right to request for and obtain a CASp inspection, which request must be made, if at all, in a written notice delivered by Tenant to Landlord; (B) any CASp inspection timely requested by Tenant shall be conducted (1) at a time mutually agreed to by Landlord and Tenant, (2) in a professional manner by a CASp designated by Landlord and without any testing that would damage the Premises, Building or Project in any way, and (3) at Tenant's sole cost and expense, including, without limitation, Tenant's payment of the fee for such CASp inspection, the fee for any reports prepared by the CASp in connection with such CASp inspection (collectively, the "**CASp Reports**") and all other costs and expenses in connection therewith; (C) the CASp Reports shall be delivered by the CASp simultaneously to Landlord and Tenant; (D) Tenant, at its sole cost and expense, shall be responsible for making any improvements, alterations, modifications and/or repairs to or within the Premises to correct violations of construction-related accessibility standards including, without limitation, any violations disclosed by such CASp inspection; and (E) if such CASp inspection identifies any improvements, alterations, modifications and/or repairs necessary to correct violations of construction-related accessibility standards relating to those items of the Building and Project located outside the Premises that are Landlord's obligation to repair as set forth in this Lease, then Landlord shall perform such improvements, alterations, modifications and/or repairs as and to the extent required by Legal Requirements to correct such violations, and Tenant shall reimburse Landlord for the cost of such improvements, alterations, modifications and/or repairs within 30 days after Tenant's receipt of an invoice therefor from Landlord.

[Signatures on next page]

IN WITNESS WHEREOF, Landlord and Tenant have executed this Lease as of the day and year first above written.

TENANT:

SINGULAR GENOMICS SYSTEMS, INC.,
a Delaware corporation

By: /s/ Andrew Spaventa
Its: Chief Executive Officer

LANDLORD:

ARE-10933 NORTH TORREY PINES, LLC,
a Delaware limited liability company

By: ALEXANDRIA REAL ESTATE EQUITIES, INC., a Maryland corporation, managing member,

By: /s/ Gary Dean
Its: Senior Vice President RE Legal Affairs

EXHIBIT A TO LEASE

DESCRIPTION OF PREMISES

[Omitted]

EXHIBIT B TO LEASE

DESCRIPTION OF PROJECT

Lot 1 as shown on Map No. 15437, filed with the County Recorder of San Diego County, California on September 19, 2006, as File No. 2006-0666754.

EXHIBIT C TO LEASE

LANDLORD'S WORK

[Omitted]

EXHIBIT D TO LEASE

ACKNOWLEDGMENT OF COMMENCEMENT DATE

[Omitted]

EXHIBIT E TO LEASE

Rules and Regulations

[Omitted]

FIRST AMENDMENT TO LEASE

THIS FIRST AMENDMENT TO LEASE (this "**First Amendment**") is made as of December 11, 2017 by and between ARE-10933 **NORTH TORREY PINES, LLC**, a Delaware limited liability company ("**Landlord**"), and **SINGULAR GENOMICS SYSTEMS, INC.**, a Delaware corporation ("**Tenant**").

RECITALS

A. Landlord and Tenant are parties to that certain Lease Agreement dated as of November 1, 2017 (the "**Lease**"). Pursuant to the Lease, Tenant leases certain premises at 10931 North Torrey Pines Road, La Jolla, California ("**Premises**"). The Premises are more particularly described in the Lease. Capitalized terms used herein without definition shall have the meanings defined for such terms in the Lease.

B. Landlord and Tenant desire, subject to the terms and conditions set forth below, to update the building address and Tenant's notice address.

NOW, THEREFORE, in consideration of the foregoing Recitals, which are incorporated herein by this reference, the mutual promises and conditions contained herein, and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, Landlord and Tenant hereby agree as follows:

1. **Amendment to Definition of Building**. The defined term "**Building**" on page 1 of the Lease shall be deleted in its entirety and replaced with the following:

"**Building:** That certain building located at 10931 N. Torrey Pines, La Jolla, California 92037."

2. **Amendment to Tenant's Notice Address**. Tenant's notice address set forth on page 1 of the Lease shall be deleted in its entirety and replaced with the following:

"Tenant's Notice Address:
[Address]"

3. **Miscellaneous**.

a. This First Amendment is the entire agreement between the parties with respect to the subject matter hereof and supersedes all prior and contemporaneous oral and written agreements and discussions. This First Amendment may be amended only by an agreement in writing, signed by the parties hereto.

b. This First Amendment is binding upon and shall inure to the benefit of the parties hereto, their respective agents, employees, representatives, officers, directors, divisions, subsidiaries, affiliates, assigns, heirs, successors in interest and shareholders.

c. This First Amendment may be executed in any number of counterparts, each of which shall be deemed an original, but all of which when taken together shall constitute one and the same instrument. The signature page of any counterpart may be detached therefrom without impairing the legal effect of the signature(s) thereon provided such signature page is attached to any other counterpart identical thereto except having additional signature pages executed by other parties to this First Amendment attached thereto.

d. Except as amended and/or modified by this First Amendment, the Lease is hereby ratified and confirmed and all other terms of the Lease shall remain in full force and effect, unaltered and unchanged by this First Amendment. In the event of any conflict between the provisions of this First Amendment and the provisions of the Lease, the provisions of this First Amendment shall prevail. Whether or not specifically amended by this First Amendment, all of the terms and provisions of the Lease are hereby amended to the extent necessary to give effect to the purpose and intent of this First Amendment.

[Signature Page Immediately Follows]

IN WITNESS WHEREOF**,** the parties hereto have executed this First Amendment as of the day and year first above written.

LANDLORD:

ARE-10933 NORTH TORREY PINES, LLC,
a Delaware limited liability company.

By: ALEXANDRIA REAL ESTATE EQUITIES, INC., a Maryland corporation n, managing member

By: /s/ Gary Dean
Its: Senior Vice President Real Estate Legal Affairs

TENANT:

SINGULAR GENOMICS SYSTEMS, INC.,
a Delaware corporation

By: /s/ Andrew Spaventa
Its: Andrew Spaventa
Title: Chief Executive Officer

SECOND AMENDMENT TO LEASE

THIS SECOND AMENDMENT TO LEASE (this "**Second Amendment**") is made as of June 26, 2020, by and between ARE-10933 NORTH TORREY PINES, LLC, a Delaware limited liability company ("**Landlord**"), and SINGULAR GENOMICS SYSTEMS, INC., a Delaware corporation ("**Tenant**").

RECITALS

A. Landlord and Tenant entered into that certain Lease Agreement dated as of November 1, 2017, as amended by that certain First Amendment to Lease dated December 11, 2017 (as amended, the "**Lease**"). Pursuant to the Lease, Tenant leases certain premises ("**Premises**") in a building located at 10931 North Torrey Pines, La Jolla, California. The Premises are more particularly described in the Lease. Capitalized terms used herein without definition shall have the meanings defined for such terms in the Lease.

B. Concurrently with the execution by Landlord and Tenant of this Second Amendment, Tenant is entering into a lease agreement with ARE-SD Region No. 27, LLC, a Delaware limited liability company, pursuant to which Tenant shall lease approximately 76,778 rentable square feet of space at a building located at 3010 Science Park Road, San Diego, California ("**New Lease**").

C. The Base Term of the Lease is scheduled to expire on January 31, 2021 (the "**Expiration Date**").

D. Subject to the terms of this Second Amendment, Landlord and Tenant have agreed to adjust the Expiration Date of the Lease to coincide with the Commencement Date (as defined in the New Lease) of the New Lease.

NOW, THEREFORE, in consideration of the foregoing Recitals, which are incorporated herein by this reference, the mutual promises and conditions contained herein, and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, Landlord and Tenant hereby agree as follows:

1. **Termination Date**. Landlord and Tenant hereby agree that, notwithstanding anything to the contrary contained in the Lease, the expiration of the Term of the Lease shall occur on the date that is the 7 days after the Commencement Date (as defined in the New Lease) of the New Lease ("**Termination Date**"); provided, however, that if the New Lease is terminated before the Commencement Date (as defined in the New Lease) occurs, the Termination Date shall be the later of (i) the Expiration Date, or (ii) the date that is 30 days after the termination of the New Lease. If Tenant retains possession of the Premises following the Termination Date, such possession shall be a holding over under the Lease and the terms of Section 8 of the Lease shall apply.

2. **Base Rent and Operating Expenses**. If the Termination Date occurs on a date following the Expiration Date, then (a) Tenant shall continue paying Base Rent at the same monthly rate of Base Rent payable by Tenant for the month of December 2021, through the

Termination Date, and (b) Tenant shall continue to pay Operating Expenses as required under the Lease through the Termination Date. In addition, Tenant shall continue to be responsible for all of its other obligations under the Lease.

3. **Termination and Surrender**. Tenant shall voluntarily surrender the Premises to Landlord on or before the Termination Date in the condition in which Tenant is required to surrender the Premises as of the expiration of the Lease. Tenant agrees to cooperate with Landlord in all matters, as applicable, relating to surrendering the Premises as required under the Lease. From and after the Termination Date, Tenant shall have no further rights of any kind with respect to the Premises. Landlord and Tenant each agree that the other is excused as of the Termination Date from any further obligations with respect to the Lease, excepting only such obligations under the Lease which are, by their terms, intended to survive the termination of the Lease, and as otherwise provided herein. Nothing herein shall excuse Tenant from its obligations under the Lease prior to the Termination Date.

4. **OFAC**. Tenant and Landlord are currently (a) in compliance with and shall at all times during the Term of the Lease remain in compliance with the regulations of the Office of Foreign Assets Control ("**OFAC**") of the U.S. Department of Treasury and any statute, executive order, or regulation relating thereto (collectively, the "**OFAC Rules**"), (b) not listed on, and shall not during the Term of the Lease be listed on, the Specially Designated Nationals and Blocked Persons List maintained by OFAC and/or on any other similar list maintained by OFAC or other governmental authority pursuant to any authorizing statute, executive order, or regulation, and (c) not a person or entity with whom a U.S. person is prohibited from conducting business under the OFAC Rules.

5. **California Accessibility Disclosure**. For purposes of Section 1938(a) of the California Civil Code, Landlord hereby discloses to Tenant, and Tenant hereby acknowledges, that the Project has not undergone inspection by a Certified Access Specialist (CASp). In addition, the following notice is hereby provided pursuant to Section 1938(e) of the California Civil Code: "A Certified Access Specialist (CASp) can inspect the subject premises and determine whether the subject premises comply with all of the applicable construction-related accessibility standards under state law. Although state law does not require a CASp inspection of the subject premises, the commercial property owner or lessor may not prohibit the lessee or tenant from obtaining a CASp inspection of the subject premises for the occupancy or potential occupancy of the lessee or tenant, if requested by the lessee or tenant. The parties shall mutually agree on the arrangements for the time and manner of the CASp inspection, the payment of the fee for the CASp inspection, and the cost of making any repairs necessary to correct violations of construction-related accessibility standards within the premises." In furtherance of and in connection with such notice: (i) Tenant, having read such notice and understanding Tenant's right to request and obtain a CASp inspection, hereby elects not to obtain such CASp inspection and forever waives its rights to obtain a CASp inspection with respect to the Premises, Building and/or Project to the extent permitted by Legal Requirements; and (ii) if the waiver set forth in clause (i) hereinabove is not enforceable pursuant to Legal Requirements, then Landlord and Tenant hereby agree as follows (which constitute the mutual agreement of the parties as to the matters described in the last sentence of the foregoing notice): (A) Tenant shall have the onetime right to request for and obtain a CASp inspection, which request must be

made, if at all, in a written notice delivered by Tenant to Landlord; (B) any CASp inspection timely requested by Tenant shall be conducted (1) at a time mutually agreed to by Landlord and Tenant, (2) in a professional manner by a CASp designated by Landlord and without any testing that would damage the Premises, Building or Project in any way, and (3) at Tenant's sole cost and expense, including, without limitation, Tenant's payment of the fee for such CASp inspection, the fee for any reports prepared by the CASp in connection with such CASp inspection (collectively, the "**CASp Reports**") and all other costs and expenses in connection therewith; (C) the CASp Reports shall be delivered by the CASp simultaneously to Landlord and Tenant; (D) Tenant, at its sole cost and expense, shall be responsible for making any improvements, alterations, modifications and/or repairs to or within the Premises to correct violations of construction-related accessibility standards including, without limitation, any violations disclosed by such CASp inspection; and (E) if such CASp inspection identifies any improvements, alterations, modifications and/or repairs necessary to correct violations of construction-related accessibility standards relating to those items of the Building and Project located outside the Premises that are Landlord's obligation to repair as set forth in the Lease, then Landlord shall perform such improvements, alterations, modifications and/or repairs as and to the extent required by Legal Requirements to correct such violations, and Tenant shall reimburse Landlord for the cost of such improvements, alterations, modifications and/or repairs within 10 business days after Tenant's receipt of an invoice therefor from Landlord.

6. **Brokers.** Landlord and Tenant each represents and warrants that it has not dealt with any broker, agent or other person (collectively, "**Broker**") in connection with the transaction reflected in this Fourth Amendment and that no Broker brought about this transaction, other than Hughes Marino, Inc., Cushman & Wakefield of San Diego, Inc. and CBRE, Inc. Landlord and Tenant each hereby agree to indemnify and hold the other harmless from and against any claims by any Broker, other than Hughes Marino, Inc., Cushman & Wakefield of San Diego, Inc. and CBRE, Inc. claiming a commission or other form of compensation by virtue of having dealt with Tenant or Landlord, as applicable, with regard to this leasing transaction.

7. **Miscellaneous**.

a. This Second Amendment is the entire agreement between the parties with respect to the subject matter hereof and supersedes all prior and contemporaneous oral and written agreements and discussions. This Second Amendment may be amended only by an agreement in writing, signed by the parties hereto.

b. This Second Amendment is binding upon and shall inure to the benefit of the parties hereto, their respective agents, employees, representatives, officers, directors, divisions, subsidiaries, affiliates, assigns, heirs, successors in interest and shareholders.

c. This Fourth Amendment may be executed in 2 or more counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument. Counterparts may be delivered via facsimile, electronic mail (including pdf or any electronic signature process complying with the U.S. federal

ESIGN Act of 2000) or other transmission method and any counterpart so delivered shall be deemed to have been duly and validly delivered and be valid and effective for all purposes. Electronic signatures shall be deemed original signatures for purposes of this Fourth Amendment and all matters related thereto, with such electronic signatures having the same legal effect as original signatures.

d. Except as amended and/or modified by this Second Amendment, the Lease is hereby ratified and confirmed and all other terms of the Lease shall remain in full force and effect, unaltered and unchanged by this Second Amendment. In the event of any conflict between the provisions of this Second Amendment and the provisions of the Lease, the provisions of this Second Amendment shall prevail. Whether or not specifically amended by this Second Amendment, all of the terms and provisions of the Lease are hereby amended to the extent necessary to give effect to the purpose and intent of this Second Amendment.

[Signatures are on the next page]

IN WITNESS WHEREOF, the parties hereto have executed this Second Amendment as to the day and year first above written.

LANDLORD:

ARE-10933 NORTH TORREY PINES, LLC,
a Delaware limited liability company

By: ALEXANDRIA REAL ESTATE EQUITIES, INC., a Maryland corporation, managing member

By: /s/ Gary Dean
Its: Senior Vice President Real Estate Legal Affairs

[X]I hereby certify that the signature, name, and title above are my signature, name and title

TENANT:

SINGULAR GENOMICS SYSTEMS, INC.,
a Delaware corporation

By: /s/ Andrew Spaventa
Its: Andrew Spaventa
Title: Chief Executive Officer

[X]I hereby certify that the signature, name, and title above are my signature, name and title

Exhibit 10.6

LEASE AGREEMENT

THIS LEASE AGREEMENT (this "**Lease**") is made this 26th day of June, 2020, between **ARE-SD REGION NO. 27, LLC**, a Delaware limited liability company ("**Landlord**"), and **SINGULAR GENOMICS SYSTEMS, INC.**, a Delaware corporation ("**Tenant**").

Building:	3010 Science Park Road, San Diego, California
Premises:	The entire Building, containing approximately 76,778 rentable square feet, as determined by Landlord, as shown on **Exhibit A**, located on the parcel of land legally described on **Exhibit B-1**, together with all improvements thereon and appurtenances thereto. Notwithstanding the Project description below, until such time(s) as Landlord notifies Tenant that the Project Improvements (as defined in Section 41) have been substantially completed (which may be in phase(s)) by one or more affiliates of Landlord as provided for in Section 41), the Project shall mean the land and improvements located on the parcel legally described on **Exhibit B-1**.
Project:	The Building and the land on which the Building shall be located, as well as those certain buildings known as 10931 North Torrey Pines Road, 10933 North Torrey Pines Road, 10975 North Torrey Pines Road and 10996 Torreyana Road, San Diego, California, and the land on which they are all located, together with all existing and future improvements thereon including, without limitation, parking structure(s), parking areas, and amenities building(s) and all appurtenances thereto, the current configuration of which is as shown on **Exhibit B-2**. The Project is contemplated to be known as One Alexandria Square and the currently contemplated Project Improvements are depicted on **Exhibit I** (which Project Improvements together with the Premises are contemplated to contain approximately 420,000 rentable square feet); provided, however, that the name and all aspects of the Project Improvements all remain subject to change(s) by Landlord.
Base Rent:	$61.80 per rentable square foot of the Premises per year, subject to adjustment pursuant to Section 4 hereof.
Rentable Area of Premises:	76,778 sq. ft.
Rentable Area of Project:	76,778 sq. ft., until such time(s) as Landlord notifies Tenant of the substantial completion of the Project Improvements (or phases thereof) at which time(s) the Rentable Area of Project shall be automatically increased, upon written notice from Landlord to Tenant, to reflect the rentable square footage of the Project, as reasonably determined by Landlord.
Tenant's Share of Operating Expenses of Building:	100%
Building's Share of Operating Expenses of Project:	The percentage which is calculated the first time that Landlord notifies Tenant of the substantial completion of any portion of the Project Improvements by dividing the Rentable Area of the Premises (as the numerator) by the then Rentable Area of the Project (as the denominator) and multiplying the result by 100; provided, however, that the percentage shall be subject to adjustment each time that Landlord notifies Tenant of the substantial completion of the Project Improvements (or phases thereof) at which time(s) the Building's Share of Operating Expenses of Project shall be automatically reduced, upon written notice from Landlord to Tenant, to reflect the percentage which is calculated by dividing the Rentable Area of the Premises (as the numerator) by the then Rentable Area of the Project (as the denominator) and multiplying the result by 100. Notwithstanding

	anything to the contrary contained in this Lease, during the Term of this Lease, in no event shall the Building's Share of Operating Expenses of the Project exceed 19% even if, based on the rentable square footage of the Project Improvements, the Building's actual share exceeds such amount.
Security Deposit:	$395,406.70
Target Commencement Date:	April 15, 2022
Rent Adjustment Percentage:	3%
Base Term:	Beginning on the Commencement Date and ending 120 months from the first day of the first full month following the Commencement Date. For clarity, if the Commencement Date occurs on the first day of a month, the Base Term shall be measured from that date. If the Commencement Date occurs on a day other than the first day of a month, the Base Term shall be measured from the first day of the following month.
Permitted Use:	Research and development laboratory, pilot plant for development, manufacturing of Tenant's DNA sequencing systems, reagents and consumables, related office and other related uses consistent with the character of the Project and otherwise in compliance with the provisions of Section 7 hereof.
Address for Rent Payment: [Address]	**Landlord's Notice Address:** [Address]
Tenant's Notice Address: [Address]	

The following Exhibits and Addenda are attached hereto and incorporated herein by this reference:

[X] **EXHIBIT A** - PREMISES DESCRIPTION	[X] **EXHIBIT B** - DESCRIPTION OF PROJECT
[X] **EXHIBIT C** - WORK LETTER	[X] **EXHIBIT D** - COMMENCEMENT DATE
[X] **EXHIBIT E** - RULES AND REGULATIONS	[X] **EXHIBIT F** - TENANT'S PERSONAL PROPERTY
[X] **EXHIBIT G** - MAINTENANCE OBLIGATIONS	[X] **EXHIBIT H** - SIGNAGE
[X] **EXHIBIT I** - PROJECT IMPROVEMENTS RENDERINGS	[X] **EXHIBIT J** - PARKING

1. **Lease of Premises**. Upon and subject to all of the terms and conditions hereof, Landlord hereby leases the Premises to Tenant and Tenant hereby leases the Premises from Landlord. The portions of the Project exterior to the Building which are for the non-exclusive use of tenants of the Project, are collectively referred to herein as the "**Common Areas**". Tenant shall have non-exclusive right during the Term to use the Common Areas along with others having the right to use the Common Areas. Landlord reserves the right to modify Common Areas, provided that such modifications do not materially adversely affect Tenant's use of the Premises for the Permitted Use. From and after the Commencement Date through the expiration of the Term, Tenant shall have access to the Building and the Premises 24 hours a day, 7 days a week, except in the case of emergencies, as the result of Legal Requirements, the performance by Landlord of any installation, maintenance or repairs, or any other temporary interruptions, and otherwise subject to the terms of this Lease.

2. **Delivery; Acceptance of Premises; Commencement Date**. Landlord shall use reasonable efforts to deliver the Premises to Tenant on or before the Target Commencement Date, with Landlord's Work Substantially Completed ("**Delivery**" or "**Deliver**"). If Landlord fails to timely Deliver the Premises, Landlord shall not be liable to Tenant for any loss or damage resulting therefrom, and this Lease shall not be void or voidable except as provided herein. If Landlord does not Deliver the Premises within 120 days of the Target Commencement Date for any reason other than Force Majeure delays and Tenant Delays, this Lease may be terminated by Tenant by written notice to Landlord, and if so terminated by Tenant: (a) the Security Deposit, or any balance thereof (i.e., after deducting therefrom all amounts to which Landlord is entitled under the provisions of this Lease) and any unutilized amount deposited by Tenant with Landlord pursuant to the Work Letter attached hereto as **Exhibit C**, shall be returned to Tenant, and (b) neither Landlord nor Tenant shall have any further rights, duties or obligations under this Lease, except with respect to provisions which expressly survive termination of this Lease. As used herein, the terms "**Landlord's Work**," "**Tenant Delays**" and "**Substantially Completed**" shall have the meanings set forth for such terms in the Work Letter. If Tenant does not elect to void this Lease within 5 business days of the lapse of such 120 day period, such right to void this Lease shall be waived and this Lease shall remain in full force and effect.

The "**Commencement Date**" shall be the earlier of: (i) the date Landlord Delivers the Premises to Tenant with Landlord's Work Substantially Completed; and (ii) the date Landlord could have Delivered the Premises but for Tenant Delays. Upon request of Landlord, Tenant shall execute and deliver a written acknowledgment of the Commencement Date and the expiration date of the Term when such are established in the form of the "Acknowledgement of Commencement Date" attached to this Lease as **Exhibit D**; provided, however, Tenant's failure to execute and deliver such acknowledgment shall not affect Landlord's rights hereunder. The "**Term**" of this Lease shall be the Base Term, as defined above on the first page of this Lease and the Extension Term which Tenant may elect pursuant to Section 39 hereof.

Except as set forth in the Work Letter or as otherwise expressly set forth in this Lease: (i) Tenant shall accept the Premises in their condition as of the Substantial Completion of Landlord's Work; (ii) Landlord shall have no obligation for any defects in the Premises; and (iii) Tenant's taking possession of the Premises shall be conclusive evidence that Tenant accepts the Premises and that the Premises were in good condition at the time possession was taken. Any occupancy of the Premises by Tenant before the Commencement Date shall be subject to all of the terms and conditions of this Lease, excluding the obligation to pay Base Rent.

For the period of 365 consecutive days after the Commencement Date, Landlord shall, at its sole cost and expense (which shall not constitute an Operating Expense), be responsible for any repairs that are required to be made to the Building or Building Systems (as defined in Section 13), unless Tenant or any Tenant Party was responsible for the cause of such repair, in which case Tenant shall pay the cost.

Tenant agrees and acknowledges that, except as otherwise expressly set forth in this Lease, including the Work Letter, neither Landlord nor any agent of Landlord has made any representation or warranty with respect to the condition of all or any portion of the Premises or the Project, and/or the suitability of the Premises or the Project for the conduct of Tenant's business, and Tenant waives any implied warranty that the Premises or the Project are suitable for the Permitted Use. This Lease (along with all of its exhibits) constitutes the complete agreement of Landlord and Tenant with respect to the subject matter hereof and supersedes any and all prior representations, inducements, promises, agreements, understandings and negotiations which are not contained herein. Landlord in executing this Lease does so in reliance upon Tenant's representations, warranties, acknowledgments and agreements contained herein.

3. **Rent**.

(a) **Base Rent**. Base Rent for the month in which the Commencement Date occurs and the Security Deposit shall be due and payable on delivery of an executed copy of this Lease to Landlord. Tenant shall pay to Landlord in advance, without demand, abatement (except for any abatement as may be expressly provided for in this Lease), deduction or set-off, monthly installments of Base Rent on or before the first day of each calendar month during the Term hereof, in lawful money of the United States of America, at the office of Landlord for payment of Rent set forth above, or to such other person or at such other place as Landlord may from time to time designate in writing. Payments of Base Rent for any fractional calendar month shall be prorated. The obligation of Tenant to pay Base Rent and other sums to Landlord and the obligations of Landlord under this Lease are independent obligations. Tenant shall have no right at any time to abate, reduce, or set-off any Rent (as defined in Section 5) due hereunder except for any abatement as may be expressly provided for in this Lease.

Notwithstanding anything to the contrary contained in this Lease, so long as Tenant is not in Default under this Lease, for the period commencing on the Commencement Date (or, if the Commencement Date does not occur on the first day of a calendar month, then as of the first day of the first full calendar month immediately following the Commencement Date) through the last day of the 14th full calendar month following the Commencement Date (the "**Partial Base Rent Abatement Period**"), Tenant shall only be required to pay Base Rent with respect to only 50% of the Premises. Tenant shall commence paying Base Rent with respect to the entire Premises on the first day of the 15th full calendar month following the Commencement Date.

(b) **Additional Rent**. In addition to Base Rent, Tenant agrees to pay to Landlord as additional rent ("**Additional Rent**"): (i) commencing on the Commencement Date, Tenant's Share of "Operating Expenses" (as defined in Section 5), and (ii) any and all other amounts Tenant assumes or agrees to pay under the provisions of this Lease, including, without limitation, any and all other sums that may become due by reason of any default of Tenant or failure to comply with the agreements, terms, covenants and conditions of this Lease to be performed by Tenant, after any applicable notice and cure period.

Tenant acknowledges and agrees that the contemplated Project Improvements includes certain Project Amenities (as defined in Section 5 below). If Landlord, in its sole and absolute discretion, elects to construct Project Amenities, Landlord and Tenant acknowledge and agree that, commencing on the date(s) that all or any portions of the Project Amenities are made available for use by Tenant and any other tenants of the Project (each, a "**Project Amenities Availability Date**"), Landlord shall have right to increase the Rentable Area of the Premises (which shall in turn result in an increase in the Base Rent payable by Tenant under the Lease) by 0.1% for each 1,000 square feet of Project Amenities constructed at the Project up to a maximum of a 5% increase in the Rentable Area of Premises if 50,000 square feet of Project Amenities is constructed. During those periods of the Term where Landlord elects to increase the Rentable Area of the Premises pursuant to the immediately preceding sentence, Tenant shall not be required to pay the Amenities Fee provided for in Section 40. For example, if 40,000 square feet of Project Amenities is constructed, then the Rentable Area of the Premises (including, without limitation, for the purposes of the calculation of the payment of Base Rent) shall be 79,848.

4. **Base Rent Adjustments**.

(a) **Base Rent**. Base Rent shall be increased on each annual anniversary of the Commencement Date (or, if the Commencement Date occurs on a day other than the first day of a calendar month, then on each anniversary of the first day of the first full calendar month immediately following the Commencement Date) (each an "**Adjustment Date**") by multiplying the Base Rent payable immediately before such Adjustment Date by the Rent Adjustment Percentage and adding the resulting amount to the Base Rent payable immediately before such Adjustment Date. Base Rent, as so adjusted, shall thereafter be due as provided herein. Base Rent adjustments for any fractional calendar month shall be prorated.

(b) **TI Allowance**. Landlord shall, subject to the terms of the Work Letter, make available to Tenant the Tenant Improvement Allowance (as defined in the Work Letter). Commencing on the Commencement Date, and continuing thereafter on the first day of each month during the Base Term, Tenant shall pay the amount necessary to fully amortize the portion of the Tenant Improvement Allowance actually funded by Landlord, if any, in equal monthly payments with interest at a rate of 8% per annum over the Base Term, which interest shall begin to accrue on the date that Landlord first disburses such Tenant Improvement Allowance or any portion(s) thereof. Tenant acknowledges that because the Tenant Improvement Allowance may be disbursed to Tenant in multiple disbursements following the Commencement Date, the Additional Rent payable by Tenant pursuant to this Section 4(b) may be adjusted following each such disbursement. Notwithstanding anything to the contrary contained herein, Tenant may, at Tenant's sole election, accelerate or pre-pay all or any portion of the outstanding and unamortized portion of the Tenant Improvement Allowance that was actually funded by Landlord in full at any time without penalty, in which event the amortizing payments shall be appropriately adjusted. Any of the Tenant Improvement Allowance and applicable interest remaining unpaid as of the expiration or earlier termination of this Lease shall be paid to Landlord in a lump sum at the expiration or earlier termination of this Lease. The Tenant Improvement Allowance shall be available for use by Tenant until the date that is twelve (12) months after the Commencement Date. Any portion of the Additional Tenant Improvement Allowance which has not been properly requested by Tenant from Landlord on or before the date that is twelve (12) months after the Commencement Date, shall be forfeited and shall not be available for use by Tenant.

5. **Operating Expense Payments**. Landlord shall deliver to Tenant a written estimate of Operating Expenses for each calendar year during the Term (the "**Annual Estimate**"), which may be revised by Landlord from time to time during such calendar year. Commencing on the Commencement Date and continuing thereafter on the first day of each month during the Term, Tenant shall pay Landlord an amount equal to 1/12th of Tenant's Share of the Annual Estimate. Payments for any fractional calendar month shall be prorated.

The term "**Operating Expenses**" means all costs and expenses of any kind or description whatsoever actually incurred or accrued each calendar year by Landlord with respect to (i) the Building and any legal parcel on which the Building is located (and for the avoidance of doubt, Tenant is responsible during the Term for 100% of the costs and expenses for the Building and any legal parcel on which the Building is located), (ii) the Parking Area and Parking Structure (as such terms are defined in Section 10) (and for the avoidance of doubt, Tenant is responsible during the Term for the percentage which is Tenant's pro rata share (as described in Section 10) of the costs and expenses for the Parking Area and Parking Structure) but not any of the costs of designing and constructing the Parking Structure, and (iii) the Project Amenities (as defined below) and the Project but with respect to the Project only to the extent that each building is being allocated its equitable share of such costs and expenses (and for the avoidance of doubt, Tenant is responsible during Term for the percentage that is the Building's Share of Operating Expenses of Project of the costs and expenses for matters described in this clause (iii), but which shall not exceed 19%). Operating Expenses shall include, including, without duplication, Taxes (as defined in Section 9), capital repairs and improvements amortized over the useful life of such capital items as reasonably determined by Landlord taking into account all relevant factors, the cost (including, without limitation, any subsidies which Landlord may provide in connection with the Project Amenities) of the common area amenities (the "**Project Amenities**") now or hereafter located at the Project, the cost of upgrades to the Project or enhanced services provided at the Project which are intended to encourage social distancing, promote and protect health and physical well-being and/or intended to limit the spread of communicable diseases and/or viruses of any kind or nature (collectively, "**Infectious Conditions**"), and the costs of Landlord's third party property manager or, if there is no third party property manager, administration rent in the amount of 3% of Base Rent (provided that during the Partial Base Rent Abatement Period, Tenant shall nonetheless be required to pay administration rent each month equal to the amount of the administration rent that Tenant would have been required to pay in the absence of there being a Partial Base Rent Abatement Period)). Operating Expenses shall exclude only:

(a) the design and construction costs of the Landlord's Work and the Project Improvements prior to the substantial completion of the Project Improvements and costs of correcting defects in such design and construction; provided that the foregoing shall not exclude the costs of maintenance and repairs to the exterior improvements of the Building following the Commencement Date;

(b) capital expenditures for expansion of the Project (including, without limitation, any capitalized fees or expenses of entitlements and permits required for the Project Improvements, any costs for designing and constructing the Parking Structure and any costs to relocate Tenant's central plant);

(c) interest, principal payments of Mortgage (as defined in Section 27) debts of Landlord, financing costs and amortization of funds borrowed by Landlord, whether secured or unsecured;

(d) depreciation of the Project (except for capital improvements, the cost of which are includable in Operating Expenses);

(e) advertising, legal and space planning expenses and leasing commissions and other costs and expenses incurred in procuring and leasing space to tenants for the Project, including any leasing office maintained in the Project, free rent and construction or tenant improvement allowances for tenants;

(f) legal and other expenses incurred in the design, permitting or construction of the Project Improvements, or in the negotiation or enforcement of leases;

(g) completing, fixturing, improving, renovating, painting, redecorating or other work, which Landlord pays for or performs for other tenants within their premises, and costs of correcting defects in such work;

(h) costs to be reimbursed by other tenants of the Project or Taxes to be paid directly by Tenant or other tenants of the Project, whether or not actually paid;

(i) salaries, wages, benefits and other compensation paid to (i) personnel of Landlord or its agents or contractors above the position of the person, regardless of title, who has day-to-day management responsibility for the Project or (ii) officers and employees of Landlord or its affiliates who are not assigned in whole or in part to the operation, management, maintenance or repair of the Project; provided, however, that with respect to any such person who does not devote substantially all of his or her employed time to the Project, the salaries, wages, benefits and other compensation of such person shall be prorated to reflect time spent on matters related to operating, managing, maintaining or repairing the Project in comparison to the time spent on matters unrelated to operating, managing, maintaining or repairing the Project;

(j) general organizational, administrative and overhead costs relating to maintaining Landlord's existence, either as a corporation, partnership, or other entity, including general corporate, legal and accounting expenses;

(k) costs (including attorneys' fees and costs of settlement, judgments and payments in lieu thereof) incurred in connection with disputes with tenants, other occupants, or prospective tenants, and costs and expenses, including legal fees, incurred in connection with negotiations or disputes with employees, consultants, management agents, leasing agents, purchasers or mortgagees of the Building;

(l) costs incurred by Landlord due to the violation by Landlord, its employees, agents or contractors or any tenant of the terms and conditions of any lease of space in the Project or any Legal Requirement (as defined in Section 7);

(m) penalties, fines, late fees or interest incurred as a result of Landlord's inability or failure to make payment of Taxes and/or to file any tax or informational returns when due, or from Landlord's failure to make any payment of Taxes required to be made by Landlord hereunder before delinquency;

(n) overhead and profit increment paid to Landlord or to subsidiaries or affiliates of Landlord for goods and/or services in or to the Project to the extent the same exceeds the costs of such goods and/or services rendered by unaffiliated third parties on a competitive basis;

(o) costs of Landlord's charitable or political contributions, or of fine art maintained at the Project;

(p) costs incurred in the sale or refinancing of any portion of the Project;

(q) net income taxes of Landlord or the owner of any interest in the Project, franchise, capital stock, gift, estate or inheritance taxes or any federal, state or local documentary taxes imposed against the Project or any portion thereof or interest therein;

(r) costs arising from the gross negligence or intentional misconduct of Landlord or Landlord's officers, directors, employees, managers or agents;

(s) any costs incurred to remove, study, test or remediate, or otherwise related to the presence of Hazardous Materials in or about the Building or the Project for which Tenant is not responsible under this Lease;

(t) the cost of capital repairs and replacements of Structural Items (as defined in Section 13), unless Tenant or any Tenant Party is responsible for the cause of the repairs or replacements;

(u) reserves for future capital replacements;

(v) costs occasioned by condemnation;

(w) insurance maintained by Landlord or any affiliate of Landlord, or any contractor engaged by any of them, insuring against construction period risks associated solely with the construction work of the Project Improvements, and any insurance deductibles in excess of deductibles that Tenant can demonstrate are in excess of customary deductible amounts carried by institutional owners of comparable projects in the Torrey Pines area of San Diego;

(x) costs in connection with the Amenities (as defined in Section 40) other than the Amenities Fee (as defined in Section 40) and other costs payable by Tenant pursuant to Section 40; and

(y) any expenses otherwise includable within Operating Expenses to the extent actually reimbursed by persons other than tenants of the Project under leases for space in the Project.

For the avoidance of doubt, capital costs incurred by Landlord prior to the Commencement Date may not be included as Operating Expenses.

Notwithstanding anything to the contrary contained herein, any earthquake deductible payable by Tenant under this Lease shall be fully amortized with interest in equal monthly installments over the remaining Term.

Notwithstanding anything to the contrary contained herein, in no event shall Landlord be entitled to make any profit from Landlord's collection of Operating Expenses.

In addition, notwithstanding anything to the contrary contained in this Lease, Operating Expenses incurred or accrued by Landlord after the Commencement Date with respect to any capital improvements made by Landlord to the Building, the Parking Structure or, after substantial completion of the Project Improvements, for any other portion of the Project which are reasonably expected by Landlord to reduce overall Operating Expenses (for example, without limitation, by reducing energy usage at the Project) (the "**Energy Savings Costs**") shall be amortized over a period of years equal to the least of (A) 10 years, (B) the useful life of such capital items, or (C) the quotient of (i) the Energy Savings Costs, divided by (ii) the annual amount of Operating Expenses reasonably expected by Landlord to be saved as a result of such capital improvements.

Within 90 days after the end of each calendar year (or such longer period as may be reasonably required), Landlord shall furnish to Tenant a statement (an "**Annual Statement**") showing in reasonable detail: (a) the total and Tenant's Share of actual Operating Expenses for the previous calendar year, and (b) the total of Tenant's payments in respect of Operating Expenses for such year; provided that for the calendar year in which substantial completion of the Project Improvements occurs, (i) the Annual Statement for Operating Expenses of the Project (as limited to the Building and the Parking Area and Parking Structure) shall be limited to that portion of such calendar year expiring on the last day of the calendar month in which the Project Improvements are substantially completed (with such Annual Statement to be delivered within 90 days thereafter), and (ii) the Annual Statement for the Project (as expanded to include the entire One Alexandria Square) shall be limited to that portion of such calendar year commencing on the first day of the calendar month immediately following the calendar month in which substantial completion of the Project Improvements occurs. If Tenant's Share of actual Operating Expenses for such year exceeds Tenant's payments of Operating Expenses for such year, the excess shall be due and payable by Tenant as Rent within 30 days after delivery of such Annual Statement to Tenant. If Tenant's payments of Operating Expenses for such year exceed Tenant's Share of actual Operating Expenses for such year Landlord shall pay the excess to Tenant within 30 days after delivery of such Annual Statement, except that after the expiration, or earlier termination of the Term or if Tenant is delinquent in its obligation to pay Rent, Landlord shall pay the excess to Tenant after deducting all other amounts due Landlord. Landlord's and Tenant's obligations to pay any overpayments or deficiencies due pursuant to this paragraph shall survive the expiration or earlier termination of this Lease.

The Annual Statement shall be final and binding upon Tenant unless Tenant, within 120 days after Tenant's receipt thereof, shall contest any item therein by giving written notice to Landlord, specifying each item contested and the reason therefor. If, during such 120 day period, Tenant reasonably and in good faith questions or contests the accuracy of Landlord's statement of Tenant's Share of Operating Expenses, Landlord will provide Tenant with access to Landlord's books and records relating to the operation of the Project and such information as Landlord reasonably determines to be responsive to Tenant's questions (the "**Expense Information**"). If after Tenant's review of such Expense Information, Landlord and Tenant cannot agree upon the amount of Tenant's Share of Operating Expenses, then Tenant shall have the right to have a regionally or nationally recognized independent public accounting firm selected by Tenant and approved by Landlord (which approval shall not be unreasonably withheld or delayed), working pursuant to a fee arrangement other than a contingent fee (at Tenant's sole cost and expense), audit and/or review the Expense Information for the year in question (the "**Independent Review**"). The results of any such Independent Review shall be binding on Landlord and Tenant. If the Independent Review shows that the payments actually made by Tenant with respect to Operating Expenses for the calendar year in question exceeded Tenant's Share of Operating Expenses for such calendar year, Landlord shall at Landlord's option either (i) credit the excess amount to the next succeeding installments of estimated Operating Expenses or (ii) pay the excess to Tenant within 30 days after delivery of such statement, except that after the expiration or earlier termination of this Lease or if Tenant is delinquent in its obligation to pay Rent, Landlord shall pay the excess to Tenant after deducting all other amounts due Landlord. If the Independent Review shows that Tenant's payments with respect to Operating Expenses for such calendar year were less than Tenant's Share of Operating Expenses for the calendar year, Tenant shall pay the deficiency to Landlord within 30 days after delivery of such statement. If the Independent Review shows that Tenant has overpaid with respect to Operating Expenses by more than 5% then Landlord shall reimburse Tenant for all costs incurred by Tenant for the Independent Review. Operating Expenses for the calendar years in which Tenant's obligation to share therein begins and ends shall be prorated.

"**Tenant's Share**" shall be the percentage set forth on the first page of this Lease as Tenant's Share of Operating Expenses of Building and the Building's Share of Operating Expenses of Project. Upon the first day of the calendar month immediately following the calendar month in which substantial completion of the Project Improvements (or any phase thereof) occurs (if and when such substantial completion occurs during the Term), Tenant shall commence paying the Building's Share of Operating Expenses of Project subject to the limitations provided for in this Lease. Landlord shall use reasonable efforts to, at least 30 days prior to the commencement of such obligation, deliver written notice of the adjusted amount of the estimated monthly amount of the Building's Share of Operating Expenses of Project, along with the information required under Section 41 in support of Landlord's determination of the rentable area of the Project Improvements and the Building's Share of Operating Expenses of Project calculated on such determination, with Tenant's monthly Rent obligation for the Building's Share of Operating Expenses limited to the amount payable by Tenant for the month in which substantial completion of the Project Improvements (or any phase thereof) occurs until Landlord delivers such written notice in accordance with this paragraph. Landlord may equitably increase Tenant's Share for any item of expense or cost reimbursable by Tenant that relates to a repair, replacement, or service that benefits only the Premises or only a portion of the Project that includes the Premises or that varies with occupancy or use (provided that Landlord shall use reasonable efforts, if practical under the circumstances, to deliver advance written notice of such increase to Tenant, to the extent that Tenant is reasonably capable of mitigating such increase). Base Rent, Tenant's Share of Operating Expenses of Building and the Building's Share of Operating Expenses of Project and all other amounts payable by Tenant to Landlord hereunder are collectively referred to herein as "**Rent**."

6. **Security Deposit**. Tenant shall deposit with Landlord, upon delivery of an executed copy of this Lease to Landlord, a security deposit (the "**Security Deposit**") for the performance of all of Tenant's obligations hereunder in the amount set forth on page 1 of this Lease, as such amount may be increased pursuant to Section 2(b) of the Work Letter, which Security Deposit shall be in the form of an unconditional and irrevocable letter of credit (the "**Letter of Credit**"): (i) in form and substance reasonably satisfactory to Landlord, (ii) naming Landlord as beneficiary, (iii) expressly allowing Landlord to draw upon it at any time from time to time by delivering to the issuer notice that Landlord is entitled to draw thereunder, (iv) issued by an FDIC-insured financial institution reasonably satisfactory to Landlord, and (v) redeemable by presentation of a sight draft in the state of Landlord's choice. If Tenant does not provide Landlord with a substitute Letter of Credit complying with all of the requirements hereof at least 10 days before the stated expiration date of any then current Letter of Credit, Landlord shall have the right to draw the full amount of the current Letter of Credit and hold the funds drawn in cash without obligation for interest thereon as the Security Deposit. The Security Deposit shall be held by Landlord as security for the performance of Tenant's obligations under this Lease. The Security Deposit is not an advance rental deposit or a measure of Landlord's damages in case of Tenant's default. Upon each occurrence of a Default (as defined in Section 20), Landlord may use all or any part of the Security Deposit to pay delinquent payments due under this Lease, future rent damages under California Civil Code Section 1951.2, and the cost of any damage, injury, expense or liability caused by such Default, without prejudice to any other remedy provided herein or provided by law. Landlord's right to use the Security Deposit under this Section 6 includes the right to use the Security Deposit to pay future rent damages following the termination of this Lease pursuant to Section 21(c) below. Upon any use of all or any portion of the Security Deposit, Tenant shall pay Landlord, within 10 days after Landlord's delivery to Tenant of written demand therefor, the amount that will restore the Security Deposit to the amount set forth on Page 1 of this Lease (as such amount may be increased pursuant to Section 2(b) of the Work Letter). Tenant hereby waives the provisions of any law, now or hereafter in force, including, without limitation, California Civil Code Section 1950.7, which provide that Landlord may claim from a security deposit only those sums reasonably necessary to remedy defaults in the payment of Rent, to repair damage caused by Tenant or to clean the Premises, it being agreed that Landlord may, in addition, claim those sums reasonably necessary to compensate Landlord for any other loss or damage, foreseeable or unforeseeable, caused by the act or omission of Tenant or any officer, employee, agent or invitee of Tenant. Upon bankruptcy or other debtor-creditor proceedings against Tenant, the Security Deposit shall be deemed to be applied first to the payment of Rent and other charges due Landlord for periods prior to the filing of such proceedings. If Tenant shall fully perform every provision of this Lease to be performed by Tenant, the Security Deposit, or any balance thereof (i.e., after deducting therefrom all amounts to which Landlord is entitled under the provisions of this Lease), shall be returned to Tenant (or, at Landlord's option, to the last assignee of Tenant's interest hereunder) within 60 days after the expiration or earlier termination of this Lease.

If Landlord transfers its interest in the Project or this Lease, Landlord shall either (a) transfer any Security Deposit then held by Landlord to a person or entity assuming Landlord's obligations under this Section 6, or (b) return to Tenant any Security Deposit then held by Landlord and remaining after the deductions permitted herein. Upon such transfer to such transferee or the return of the Security Deposit to Tenant, Landlord shall have no further obligation with respect to the Security Deposit, and Tenant's right to the return of the Security Deposit shall apply solely against Landlord's transferee. The Security Deposit is not an advance rental deposit or a measure of Landlord's damages in case of Tenant's default. Landlord's obligation respecting the Security Deposit is that of a debtor, not a trustee, and no interest shall accrue thereon.

7. **Use**. The Premises shall be used solely for the Permitted Use set forth in the basic lease provisions on page 1 of this Lease, and in compliance with all laws, orders, judgments, ordinances, regulations, codes, directives, permits, licenses, covenants and restrictions now or hereafter applicable to the Premises, and to the use and occupancy thereof, including, without limitation, the Americans With Disabilities Act, 42 U.S.C. § 12101, et seq. (together with the regulations promulgated pursuant thereto, "**ADA**") (collectively, "**Legal Requirements**" and each, a "**Legal Requirement**"). Tenant shall, upon 10 days' written notice from Landlord, discontinue any use of the Premises which is declared by any Governmental Authority (as defined in Section 9) having jurisdiction to be a violation of a Legal Requirement; provided, however, that if the applicable Governmental Authority grants to Tenant time in addition to such 10 day period to discontinue its use of the Premises, Tenant may continue to operate in the Premises for such additional period granted by the applicable Governmental Authority. Tenant will not use or permit the Premises to be used for any purpose or in any manner that would void Tenant's or Landlord's insurance, increase the insurance risk, or cause the disallowance of any sprinkler or other credits. Tenant shall not permit any part of the Premises to be used as a "place of public accommodation", as defined in the ADA or any similar legal requirement. Tenant shall reimburse Landlord promptly upon demand for any additional premium charged for any such insurance policy by reason of Tenant's failure to comply with the provisions of this Section or otherwise caused by Tenant's particular use of the Premises. Tenant will use the Premises in a careful, safe and proper manner and will not commit or permit waste, overload the floor or structure of the Premises, subject the Premises to use that would damage the Premises or obstruct or interfere with the rights of Landlord or other tenants or occupants of the Project, including conducting or giving notice of any auction, liquidation, or going out of business sale on the Premises, or using or allowing the Premises to be used for any unlawful purpose. Tenant shall cause any equipment or machinery to be installed in the Premises so as to reasonably prevent sounds or vibrations from the Premises from extending into Common Areas, or other space in the Project. Tenant shall not place any machinery or equipment that would overload the floor in or upon the Premises or transport or move such items through the Common Areas of the Project or in the Project elevators without the prior written consent of Landlord, which consent shall not be unreasonably withheld, conditioned or delayed. Except as may be provided under the Work Letter, Tenant shall not, without the prior written consent of Landlord, use the Premises in any manner which will require ventilation, air exchange, heating, gas, steam, electricity or water beyond the existing capacity of the Project.

Landlord shall be responsible, at Landlord's cost and expense and not as part of Operating Expenses, for the compliance of the Premises and the Common Areas of the Project with Legal Requirements (including the ADA) as of the Commencement Date. Following the Commencement Date, Landlord shall, as an Operating Expense (to the extent such Legal Requirement is generally applicable to similar buildings in the area in which the Project is located) and at Tenant's expense (to the extent such Legal Requirement is triggered by reason of Tenant's, as compared to other tenants of the Project, specific use of the Premises or Tenant's Alterations) make any alterations or modifications to the Common Areas or the exterior of the Building that are required by Legal Requirements. Except as provided in the 2 immediately preceding sentences, Tenant, at its sole expense, shall make any alterations or modifications to the interior of the Premises that are required by Legal Requirements (including, without limitation, compliance of the Premises with the ADA) related to Tenant's particular use or occupancy of the Premises. Notwithstanding any other provision herein to the contrary, Tenant shall be responsible for any and all demands, claims, liabilities, losses, costs, expenses, actions, causes of action, damages or judgments, and all reasonable expenses incurred in investigating or resisting the same (including, without limitation, reasonable attorneys' fees, charges and disbursements and costs of suit) (collectively, "**Claims**") arising out of or in connection with Legal Requirements related to Tenant's particular use of the Premises, and Tenant shall indemnify, defend, hold and save Landlord harmless from and against any and all Claims arising out of or in connection with any failure of the Premises to comply with any Legal Requirement related to Tenant's particular use of the Premises.

Tenant acknowledges that Landlord may, but shall not be obligated to, seek to obtain Leadership in Energy and Environmental Design (LEED), WELL Building Standard, or other similar "green" certification with respect to the Project and/or the Premises, and Tenant agrees to reasonably cooperate with Landlord, and to provide such information and/or documentation as Landlord may reasonably request, in connection therewith.

8. **Holding Over**. If, with Landlord's express written consent, Tenant retains possession of the Premises after the termination of the Term, (i) unless otherwise agreed in such written consent, such possession shall be subject to immediate termination by Landlord at any time, (ii) all of the other terms and provisions of this Lease (including, without limitation, the adjustment of Base Rent pursuant to Section 4 hereof) shall remain in full force and effect (excluding any expansion or renewal option or other similar right or option) during such holdover period, (iii) Tenant shall continue to pay Base Rent in the amount payable upon the date of the expiration or earlier termination of this Lease or such other amount as to which Landlord and Tenant mutually agree in such written consent, and (iv) all other payments shall continue under the terms of this Lease. If Tenant remains in possession of the Premises after the expiration or earlier termination of the Term without the express written consent of Landlord, (A) Tenant shall become a tenant at sufferance upon the terms of this Lease except that the monthly rental shall be equal to 150% of Rent in effect during the last 30 days of the Term, and (B) Tenant shall be responsible for all damages suffered by Landlord resulting from or occasioned by Tenant's holding over, including consequential damages; provided, however, that if Tenant delivers a written inquiry to Landlord within 30 days prior to the expiration or earlier termination of the Term, Landlord will notify Tenant whether the potential exists for consequential damages. No holding over by Tenant, whether with or without consent of Landlord, shall operate to extend this Lease except as otherwise expressly provided, and this Section 8 shall not be construed as consent for Tenant to retain possession of the Premises. Acceptance by Landlord of Rent after the expiration of the Term or earlier termination of this Lease shall not result in a renewal or reinstatement of this Lease.

9. **Taxes**. Subject to the terms of Section 5 hereof, Landlord shall pay, as part of Operating Expenses, all taxes, levies, fees, assessments and governmental charges of any kind, existing as of the Commencement Date or thereafter enacted (collectively referred to as "**Taxes**"), imposed by any federal, state, regional, municipal, local or other governmental authority or agency, including, without limitation, quasi-public agencies (collectively, "**Governmental Authority**") during the Term, including, without limitation, all Taxes: (i) imposed on or measured by or based, in whole or in part, on rent payable to (or gross receipts received by) Landlord under this Lease and/or from the rental by Landlord of the Project or any portion thereof, or (ii) based on the square footage, assessed value or other measure or evaluation of any kind of the Premises or the Project, or (iii) assessed or imposed by or on the operation or maintenance of any portion of the Premises or the Project, including parking, or (iv) assessed or imposed by, or at the direction of, or resulting from Legal Requirements, or interpretations thereof, promulgated by any Governmental Authority, or (v) imposed as a license or other fee, charge, tax, or assessment on Landlord's business or occupation of leasing space in the Project. Landlord may contest by appropriate legal proceedings the amount, validity, or application of any Taxes or liens securing Taxes. Notwithstanding anything to the contrary contained herein, Landlord shall only charge Tenant for assessments as if those assessments were paid by Landlord over the longest possible term which Landlord is permitted to pay for the applicable assessments without additional charge other than interest, if any, provided under the terms of the underlying assessments. Taxes shall not include (a) any net income taxes imposed on Landlord except to the extent such net income taxes are in substitution for any Taxes payable hereunder, (b) excess profit taxes, franchise taxes, transfer taxes, capital stock taxes, gift taxes or estate, inheritance or succession taxes imposed on or payable by Landlord, (c) any tax, assessment or charge levied on Landlord's rental income (other than gross receipts taxes or similar taxes), unless such taxes or assessments are in substitution for any Taxes payable hereunder, (d) any taxes or assessments in excess of the amount which would be payable if such tax or assessment were paid in installments over the longest possible term, or (e) any tax, assessment or charge imposed on land or improvements other than the Project. If any such Tax is levied or assessed directly against Tenant, then Tenant shall be responsible for and shall pay the same at such times and in such manner as the taxing authority shall require. Tenant shall pay, prior to delinquency, any and all Taxes levied or assessed against any personal property or trade fixtures placed by Tenant in the Premises, whether levied or assessed against Landlord or Tenant. If any Taxes on Tenant's personal property or trade fixtures are levied against Landlord or Landlord's property, or if the assessed valuation of the Project is increased by a value attributable to improvements in or alterations to the Premises, whether owned by Landlord or Tenant and whether or not affixed to the real property so as to become a part thereof, higher than the base valuation on which Landlord from time-to-time allocates Taxes to all tenants in the Project, Landlord shall have the right, but not the obligation, to pay such Taxes. Landlord's reasonable determination of any excess assessed valuation shall be binding and conclusive, absent manifest error. The amount of any such payment by Landlord shall constitute Additional Rent due from Tenant to Landlord immediately upon demand.

10. **Parking**. Subject to all applicable Legal Requirements, Force Majeure, a Taking (as defined in Section 19 below) and the exercise by Landlord of its rights hereunder, Tenant shall have the right, in common with other parties having the right to use the parking areas serving the Project, to use 2.5 parking spaces per 1,000 rentable square feet of the Premises, which shall be located in those areas designated for non-reserved parking, subject in each case to Landlord's rules and regulations. Except for the cost and expenses provided for in this Lease, Tenant shall not, during the Base Term, be required to pay a separate fee to Landlord for the parking spaces provided to Tenant under this Lease. Landlord may allocate parking spaces among Tenant and other tenants in the Project pro rata as described above if Landlord determines that such parking facilities are becoming crowded. Approximately 60 of the parking spaces which Tenant is entitled to use pursuant to the first sentence of this Section 10, shall be located in the subterranean parking garage located beneath the Building, which subterranean parking garage shall be available for Tenant's exclusive use (the "**Subterranean Parking Spaces**"). Notwithstanding anything to the contrary contained herein, if any improvements are constructed in the subterranean parking garage located beneath the Building which reduces the number of Subterranean Parking Spaces available for parking below 60 parking spaces, then each Subterranean Parking Space not available for parking below 60 Subterranean Parking Spaces shall be considered a "**Lost Space**" but shall nonetheless count against the 2.5 parking spaces per 1,000 rentable square feet of the Premises for use by Tenant as provided for in the first sentence of this Section 10. Landlord shall not be responsible for enforcing Tenant's parking rights against any third parties.

Landlord is contemplating that, prior to the construction of the Parking Structure, that the balance of the parking spaces allocated to Tenant under this Lease (over and above the sum of the Subterranean Parking Spaces plus, if applicable, any Lost Spaces), shall be in the location designated as Phase 1 Surface Parking Area on **Exhibit J** attached hereto. Notwithstanding anything to the contrary contained in this Lease, from and after the first day following the Commencement Date until the date, if any, that Tenant is permitted to use the Parking Structure, Tenant shall be responsible for paying for Tenant's pro rata share of all Operating Expenses incurred by Landlord in connection with the Parking Area (including, without limitation, repairs and maintenance, insurance and Taxes attributable to the Parking Area and the land on which the Parking Area is located) as though the Parking Area were located on the legal parcel on which the Building is located; provided, however, that Tenant's pro rata share of such costs and expenses with respect to the Parking Area shall be the percentage of parking spaces allocated to Tenant (over and above the sum of the Subterranean Parking Spaces plus, if applicable, any Lost Spaces) relative to the total number of parking spaces available for use in the Parking Area by all tenants at One Alexandria Square. Tenant acknowledges that Landlord shall have right in its sole and absolute discretion to relocate the Parking Area at One Alexandria Square

Landlord is contemplating constructing, at Landlord's sole cost and expense, a parking structure at One Alexandria Square designated as P1 on **Exhibit I** attached hereto (the "**Parking Structure**") for use by Tenant and others granted the right by Landlord to use such Parking Structure. If Landlord constructs such Parking Structure, Landlord may require that that some or all of the parking spaces allocated to Tenant under this Lease (over and above the sum of the Subterranean Parking Spaces plus, if applicable any Lost Spaces) be utilized in the Parking Structure. Notwithstanding anything to the contrary contained in this Lease, from and after the first day following the Commencement Date that Tenant is permitted to use the Parking Structure, Tenant shall be responsible for paying for Tenant's pro rata share of all Operating Expenses incurred by Landlord in connection with the Parking Structure (including, without limitation, repairs and maintenance, insurance and Taxes attributable to the Parking Structure and the land on which the Parking Structure is located) as though the Parking Structure were located on the legal parcel on which the Building is located; provided, however, that Tenant's pro rata share of such costs and expenses with respect to the Parking Structure shall be the percentage of parking spaces allocated to Tenant (over and above the sum of the Subterranean Parking Spaces plus, if applicable, any Lost Spaces) relative to the total number of parking spaces available in the Parking Structure for use by all tenants at One Alexandria Square. Tenant acknowledges that Landlord shall have right in its sole and absolute discretion to either not construct the Parking Structure or to construct it in a different size and location at One Alexandria Square.

11. **Utilities, Services**. Landlord shall provide, subject to the terms of this Section 11, water, electricity, HVAC, light, power, sewer, and other utilities (including gas and fire sprinklers to the extent the Project is plumbed for such services), with respect to the Common Areas, refuse and trash collection and janitorial services (collectively, "**Utilities**"). Landlord shall pay, as Operating Expenses or subject to Tenant's reimbursement obligation, for all Utilities used on the Premises, all maintenance charges for Utilities, and any storm sewer charges or other similar charges for Utilities imposed by any Governmental Authority or Utility provider, and any taxes, penalties, surcharges or similar charges thereon. Landlord may cause, at Tenant's reasonable expense, any Utilities to be separately metered or charged directly to Tenant by the provider. Tenant shall pay directly to the Utility provider, prior to delinquency, any separately metered Utilities and services which may be furnished to Tenant or the Premises during the Term. Tenant shall pay, as part of Operating Expenses, its share of all charges for jointly metered Utilities based upon consumption, as reasonably determined by Landlord. No interruption or failure of Utilities, from any cause whatsoever other than Landlord's willful misconduct, shall result in eviction or constructive eviction of Tenant, termination of this Lease or the abatement of Rent. Tenant agrees to limit use of water and sewer with respect to Common Areas to normal restroom use. Tenant shall be responsible for obtaining and paying for its own janitorial services for the Premises. Utilities shall be available to the Premises 24 hours per day, 7 days per week, except in the case of emergencies, as the result of Legal Requirements, the failure of any Utility provider to provide such Utilities, the performance by Landlord or any Utility provider of any installation, maintenance or repairs, or any other temporary interruptions.

Notwithstanding anything to the contrary set forth herein, if (i) a stoppage of an Essential Service (as defined below) to the Premises shall occur and such stoppage is due solely to the gross negligence or willful misconduct of Landlord and not due in any part to any act or omission on the part of Tenant or any Tenant Party or any matter beyond Landlord's reasonable control (any such stoppage of an Essential Service being hereinafter referred to as a "**Service Interruption**"), and (ii) such Service Interruption continues for more than 3 consecutive days after Landlord shall have received written notice thereof from Tenant, and (iii) as a result of such Service Interruption, the conduct of Tenant's normal operations in the Premises are materially and adversely affected, then there shall be an abatement of one day's Base Rent for each day during which such Service Interruption continues after such 3 day period; provided, however, that if any part of the Premises is reasonably useable for Tenant's normal business operations or if Tenant conducts all or any part of its operations in any portion of the Premises notwithstanding such Service Interruption, then the amount of each daily abatement of Base Rent shall only be proportionate to the nature and extent of the interruption of Tenant's normal operations or ability to use the Premises. The rights granted to Tenant under this paragraph shall be Tenant's sole and exclusive remedy resulting from a failure of Landlord to provide services, and Landlord shall not otherwise be liable for any loss or damage suffered or sustained by Tenant resulting from any failure or cessation of services. For purposes hereof, the term "**Essential Services**" shall mean the following services: HVAC service, water, sewer and electricity, but in each case only to the extent that Landlord has an obligation to provide same to Tenant under this Lease.

Landlord's sole obligation for either providing emergency generator or providing emergency back- up power to Tenant shall be: (i) to provide emergency generators with not less than the capacity of the emergency generator located in the Building as of the Commencement Date (which is designed to have a capacity of 300Kw), and (ii) to contract with a third party to maintain the emergency generators as per the manufacturer's standard maintenance guidelines. Except as otherwise provided in the immediately preceding sentence, Landlord shall have no obligation to provide Tenant with operational emergency generators or back-up power or to supervise, oversee or confirm that the third party maintaining the emergency generators is maintaining the generators as per the manufacturer's standard guidelines or otherwise. During any period of replacement, repair or maintenance of the emergency generators when the emergency generators are not operational, including any delays thereto due to the inability to obtain parts or replacement equipment, Landlord shall have no obligation to provide Tenant with an alternative back-up generator or generators or alternative sources of back-up power. Tenant expressly acknowledges and agrees that Landlord does not guaranty that such emergency generators will be operational at all times or that emergency power will be available to the Premises when needed.

Tenant agrees to provide Landlord with access to Tenant's water and/or energy usage data on a monthly basis, either by providing Tenant's applicable utility login credentials to Landlord's Measurabl online portal, or by another delivery method reasonably agreed to by Landlord and Tenant. The costs and expenses incurred by Landlord in connection with receiving and analyzing such water and/or energy usage data (including, without limitation, as may be required pursuant to applicable Legal Requirements) shall be included as part of Operating Expenses.

12. **Alterations and Tenant's Property**. Any alterations, additions, or improvements made to the Premises by or on behalf of Tenant (other than Landlord's Work), including additional locks or bolts of any kind or nature upon any doors or windows in the Premises, but excluding installation, removal or realignment of furniture systems (other than removal of furniture systems owned or paid for by Landlord) not involving any modifications to the structure or connections (other than by ordinary plugs or jacks) to Building Systems (as defined in Section 13) ("**Alterations**") shall be subject to Landlord's prior written consent, which may be given or withheld in Landlord's sole discretion if any such Alteration affects the structure or Building Systems and shall not be otherwise unreasonably withheld. Tenant may construct nonstructural Alterations in the Premises without Landlord's prior approval if the aggregate cost of all such work in any 12 month period does not exceed $150,000.00 (a "**Notice-Only Alteration**"), provided Tenant notifies Landlord in writing of such intended Notice-Only Alteration, and such notice shall be accompanied by plans, specifications, work contracts and such other information concerning the nature and cost of the Notice-Only Alteration as may be reasonably requested by Landlord, which notice and accompanying materials shall be delivered to Landlord not less than 15 business days in advance of any proposed construction. If Landlord approves any Alterations, Landlord may impose such conditions on Tenant in connection with the commencement, performance and completion of such Alterations as Landlord may deem appropriate in Landlord's reasonable discretion. Any request for approval shall be in writing, delivered not less than 15 business days in advance of any proposed construction, and accompanied by plans, specifications, bid proposals, work contracts and such other information concerning the nature and cost of the alterations as may be reasonably requested by Landlord, including the identities and mailing addresses of all persons performing work or supplying materials. Landlord's right to review plans and specifications and to monitor construction shall be solely for its own benefit, and Landlord shall have no duty to ensure that such plans and specifications or construction comply with applicable Legal Requirements. Tenant shall cause, at its sole cost and expense, all Alterations to comply with insurance requirements and with Legal Requirements and shall implement at its sole cost and expense any alteration or modification required by Legal Requirements as a result of any Alterations. Other than in connection with a Notice-Only Alteration (with respect to which no fee shall be payable), Tenant shall pay to Landlord, as Additional Rent, on demand an amount equal to 3% of all charges incurred by Tenant or its contractors or agents in connection with any Alteration to cover Landlord's overhead and expenses for plan review, coordination, scheduling and supervision. Before Tenant begins any Alteration, Landlord may post on and about the Premises notices of non-responsibility pursuant to applicable law. Tenant shall reimburse Landlord for, and indemnify and hold Landlord harmless from, any expense incurred by Landlord by reason of faulty work done by Tenant or its contractors, delays caused by such work, or inadequate cleanup.

Tenant shall furnish security or make other arrangements reasonably satisfactory to Landlord to assure payment for the completion of all Alterations work free and clear of liens, and shall provide (and cause each contractor or subcontractor to provide) certificates of insurance for workers' compensation and other coverage in amounts and from an insurance company reasonably satisfactory to Landlord protecting Landlord against liability for personal injury or property damage during construction. Upon completion of any Alterations, Tenant shall deliver to Landlord: (i) sworn statements setting forth the names of all contractors and subcontractors who did the work and final lien waivers from all such contractors and subcontractors; and (ii) "as built" plans for any such Alteration.

Except for Removable Installations (as hereinafter defined), all Installations (as hereinafter defined) shall be and shall remain the property of Landlord during the Term and following the expiration or earlier termination of the Term, shall not be removed by Tenant at any time during the Term, and shall remain upon and be surrendered with the Premises as a part thereof. Notwithstanding the foregoing, Landlord may, at the time its approval of any such Installation is requested, or at the time it receives notice of a Notice-Only Alteration, notify Tenant that Landlord requires that Tenant remove such Installation upon the expiration or earlier termination of the Term, in which event Tenant shall remove such Installation in accordance with the immediately succeeding sentence. Upon the expiration or earlier termination of the Term, Tenant shall remove (i) all wires, cables or similar equipment which Tenant has installed in the Premises or in the risers or plenums of the Building, (ii) any Installations for which Landlord has given Tenant notice of removal in accordance with the immediately preceding sentence, and (iii) all of Tenant's Property (as hereinafter defined), and Tenant shall restore and repair any damage caused by or occasioned as a result of such removal, including, without limitation, capping off all such connections behind the walls of the Premises and repairing any holes. During any restoration period beyond the expiration or earlier termination of the Term, Tenant shall pay Rent to Landlord as provided herein as if said space were otherwise occupied by Tenant. If Landlord is requested by Tenant or any lender, lessor or other person or entity claiming an interest in any of Tenant's Property to waive any lien Landlord may have against any of Tenant's Property, and Landlord consents to such waiver, then Landlord shall be entitled to be paid as administrative rent a fee of $1,000 per occurrence for its time and effort in preparing and negotiating such a waiver of lien.

For purposes of this Lease, (x) "**Removable Installations**" means any items listed on **Exhibit F** attached hereto and any items agreed by Landlord in writing to be included on **Exhibit F** in the future, (y) "**Tenant's Property**" means Removable Installations and, other than Installations, any personal property or equipment of Tenant that may be removed without material damage to the Premises, and (z) "**Installations**" means all property of any kind paid for with the TI Fund, all Alterations, all fixtures, and all partitions, hardware, built-in machinery, built-in casework and cabinets and other similar additions, equipment, property and improvements built into the Premises so as to become an integral part of the Premises, including, without limitation, fume hoods which penetrate the roof or plenum area, built-in cold rooms, built-in warm rooms, walk-in cold rooms, walk-in warm rooms, deionized water systems, glass washing equipment, autoclaves, chillers, built-in plumbing, electrical and mechanical equipment and systems, and any power generator and transfer switch.

13. **Landlord's Repairs**. Landlord shall, at Landlord's sole expense (and not as an Operating Expense), be responsible for capital repairs and replacements of the roof (not including the roof membrane), exterior walls, structural walls, concrete flooring and foundation of the Building ("**Structural Items**") unless the need for such repairs or replacements is caused by Tenant or any Tenant Parties (reasonable wear and tear excluded), in which case Tenant shall, subject to Section 17, bear the full cost to repair or replace such Structural Items. Landlord shall, as an Operating Expense (except to the extent the cost thereof is expressly excluded from Operating Expenses pursuant to Section 5 hereof), be responsible for the routine maintenance and repairs of such Structural Items. In addition, Landlord, as an Operating Expense (except to the extent the cost thereof is expressly excluded from Operating Expenses pursuant to Section 5 hereof), shall maintain (which maintenance may include, in Landlord's reasonable discretion, repairs and/or replacements) the roof membrane and all of the exterior, parking and other Common Areas of the Project, including HVAC, plumbing, fire sprinklers, elevators and all other building systems serving the Premises and other portions of the Project ("**Building Systems**"), in good repair, reasonable wear and tear and uninsured losses and damages caused by Tenant, or by any of Tenant, or by any of Tenant's assignees, sublessees, licensees, agents, servants, employees, invitees and contractors (or any of Tenant's assignees, sublessees and/or licensees respective agents, servants, employees, invitees and contractors) (collectively, "**Tenant Parties**") excluded. Losses and damages caused by Tenant or any Tenant Party shall be repaired by Landlord, to the extent not covered by insurance, at Tenant's sole cost and expense. Landlord reserves the right to stop Building Systems services when reasonably necessary (i) by reason of accident or emergency, or (ii) for planned repairs, alterations or improvements, which are, in the reasonable judgment of Landlord, desirable or necessary to be made, until said repairs, alterations or improvements shall have been completed. Landlord shall have no responsibility or liability for failure to supply Building Systems services during any such period of interruption; provided, however, that Landlord shall, except in case of emergency, make a commercially reasonable effort to give Tenant 24 hours advance notice of any planned stoppage of Building Systems services for routine maintenance, repairs, alterations or improvements. Tenant shall promptly give Landlord written notice of any repair required by Landlord pursuant to this Section, after which Landlord shall make a commercially reasonable effort to effect such repair. Landlord shall use reasonable efforts to minimize interference with Tenant's operations in the Premises during the performance of Landlord's repair and maintenance obligations under this Lease. Landlord shall not be liable for any failure to make any repairs or to perform any maintenance unless such failure shall persist for an unreasonable time after Tenant's written notice of the need for such repairs or maintenance. Tenant waives its rights under any state or local law to terminate this Lease or to make such repairs at Landlord's expense and agrees that the parties' respective rights with respect to such matters shall be solely as set forth herein. Repairs required as the result of fire, earthquake, flood, vandalism, war, or similar cause of damage or destruction shall be controlled by Section 18.

14. **Tenant's Repairs**. Subject to Section 13 hereof, Tenant, at its expense, shall repair, replace and maintain in good condition (subject to normal wear and tear, casualty and condemnation) all portions of the Premises, including, without limitation, entries, doors, ceilings, interior windows, interior walls, and the interior side of demising walls. Should Tenant fail to make any such repair or replacement or fail to maintain the Premises, Landlord shall give Tenant notice of such failure. If Tenant fails to commence cure of such failure within 30 days of Landlord's notice, and thereafter diligently prosecute such cure to completion, Landlord may perform such work and shall be reimbursed by Tenant for the actual costs incurred by Landlord with respect thereto within 30 days after Tenant's receipt of a reasonably detailed invoice; provided, however, that if such failure by Tenant creates or could create an emergency, Landlord may immediately commence cure of such failure and shall thereafter be entitled to recover the actual costs of such cure from Tenant within 30 days after written demand therefor. Subject to Sections 17 and 18, Tenant shall bear the full uninsured cost of any repair or replacement to any part of the Project that results from damage caused by Tenant or any Tenant Party and any repair that benefits only the Premises. Landlord shall use reasonable efforts to minimize interference with Tenant's operations in the Premises during the performance of repair and maintenance of the Premises pursuant to this Section 14. Notwithstanding anything to the contrary contained herein, Tenant shall not be required to perform or construct any capital repairs or replacements, but Tenant shall be required to pay for capital repairs and replacements performed or constructed by Landlord in accordance with the other provisions of this Lease.

Notwithstanding anything to the contrary contained in this Lease, as of the Commencement Date, the maintenance and repair obligations for the Premises shall be allocated between Landlord and Tenant as set forth on **Exhibit G** attached hereto. The maintenance obligations allocated to Tenant pursuant to **Exhibit G** (the "**Tenant Maintenance Obligations**") shall be performed by Tenant at Tenant's sole cost and expense. The Tenant Maintenance Obligations shall include the procurement and maintenance of contracts, in form and substance reasonably satisfactory to Landlord, with copies to Landlord upon Landlord's written request, for and with contractors reasonably acceptable to Landlord specializing and experienced in the respective Tenant Maintenance Obligations. Notwithstanding anything to the contrary contained herein, the scope of work of any such contracts entered into by Tenant pursuant to this paragraph shall, at a minimum, comply with manufacturer's recommended maintenance procedures for the optimal performance of the applicable equipment. Landlord shall, notwithstanding anything to the contrary contained in this Lease, have no obligation to perform any Tenant Maintenance Obligations. The Tenant Maintenance Obligations shall not include the right or obligation on the part of Tenant to make any structural and/or capital repairs or improvements to the Project, and Landlord shall, during any period that Tenant is responsible for the Tenant Maintenance Obligations, continue, as part of Operating Expenses, to be responsible, as provided in the immediately preceding paragraph, for capital repairs and replacements required to be made to the Project. If Tenant fails to maintain any portion of the Premises for which Tenant is responsible as part of the Tenant Maintenance Obligations in a manner reasonably acceptable to Landlord within the requirements of this Lease, Landlord shall have the right, but not the obligation, to provide Tenant with written notice thereof and to assume the Tenant Maintenance Obligations if Tenant does not cure Tenant's failure within 10 days after receipt of such notice.

15. **Mechanic's Liens**. Tenant shall discharge, by bond or otherwise, any mechanic's lien filed against the Premises or against the Project for work claimed to have been done for, or materials claimed to have been furnished to, Tenant within 10 days after Tenant receives notice of the filing thereof, at Tenant's sole cost and shall otherwise keep the Premises and the Project free from any liens arising out of work performed, materials furnished or obligations incurred by Tenant. Should Tenant fail to discharge any lien described herein, Landlord shall have the right, but not the obligation, to pay such claim or post a bond or otherwise provide security to eliminate the lien as a claim against title to the Project and the cost thereof shall be due from Tenant as Additional Rent within 10 days after Tenant's receipt of written demand therefor. If Tenant shall lease or finance the acquisition of office equipment, furnishings, or other personal property of a removable nature utilized by Tenant in the operation of Tenant's business, Tenant warrants that any Uniform Commercial Code Financing Statement filed as a matter of public record by any lessor or creditor of Tenant will upon its face or by exhibit thereto indicate that such Financing Statement is applicable only to removable personal property of Tenant located within the Premises. In no event shall the address of the Project be furnished on the statement without qualifying language as to applicability of the lien only to removable personal property, located in an identified suite held by Tenant.

16. **Indemnification**. Tenant hereby indemnifies and agrees to defend, save and hold Landlord, its officers, directors, employees, managers, agents, sub-agents, constituent entities and lease signators (collectively, "**Landlord Indemnified Parties**") harmless from and against any and all Claims for injury or death to persons or damage to property occurring within or about the Premises or the Project arising directly or indirectly out of use or occupancy of the Premises or the Project by Tenant or any Tenant Parties (including, without limitation, any act, omission or neglect by Tenant or any Tenant's Parties in or about the Premises or at the Project) or a breach or default by Tenant in the performance of any of its obligations hereunder, except to the extent caused by the willful misconduct or gross negligence of Landlord Indemnified Parties or a material default by Landlord under this Lease. Landlord shall not be liable to Tenant for, and Tenant assumes all risk of damage to, personal property (including, without limitation, loss of records kept within the Premises). Tenant further waives any and all Claims for injury to Tenant's business or loss of income relating to any such damage or destruction of personal property (including, without limitation, any loss of records). Landlord Indemnified Parties shall not be liable for any damages arising from any act, omission or neglect of any tenant in the Project or of any other third party or Tenant Parties.

17. **Insurance**. Landlord shall maintain all risk property and, if applicable, sprinkler damage insurance covering the full replacement cost of the Project. Landlord shall further procure and maintain commercial general liability insurance with a single loss limit of not less than $2,000,000 for bodily injury and property damage with respect to the Project. Landlord may, but is not obligated to, maintain such other insurance and additional coverages as it may reasonably deem necessary, including, but not limited to, flood, environmental hazard and earthquake, loss or failure of building equipment, errors and omissions, rental loss during the period of repair or rebuilding, workers' compensation insurance and fidelity bonds for employees employed to perform services and insurance for any improvements installed by Tenant or which are in addition to the standard improvements customarily furnished by Landlord without regard to whether or not such are made a part of the Project. All such insurance shall be included as part of the Operating Expenses (except to the extent the cost thereof is expressly excluded from Operating Expenses pursuant to Section 5 hereof). The Project may be included in a blanket policy (in which case the cost of such insurance allocable to the Project will be reasonably determined by Landlord based upon the insurer's cost calculations). Tenant shall also reimburse Landlord for any actual increased premiums or additional insurance which Landlord reasonably deems necessary as a result of Tenant's particular use of the Premises.

Tenant, at its sole cost and expense, shall maintain during the Term: all risk property insurance with business interruption and extra expense coverage, covering the full replacement cost of all property and improvements installed or placed in the Premises by Tenant at Tenant's expense; workers' compensation insurance with no less than the minimum limits required by law; employer's liability insurance with employers liability limits of $1,000,000 bodily injury by accident – each accident, $1,000,000 bodily injury by disease – policy limit, and $1,000,000 bodily injury by disease – each employee; and commercial general liability insurance, with a minimum limit of not less than $5,000,000 per occurrence for bodily injury and property damage with respect to the Premises. The commercial general liability insurance maintained by Tenant shall name Alexandria Real Estate Equities, Inc., and Landlord, its officers, directors, employees, managers, agents, sub-agents, constituent entities and lease signators (collectively, "**Landlord Insured Parties**"), as additional insureds; insure on an occurrence and not a claims-made basis; be issued by insurance companies which have a rating of not less than policyholder rating of A and financial category rating of at least Class X in "Best's Insurance Guide"; shall not be cancelable for nonpayment of premium unless 30 days prior written notice shall have been given to Landlord from the insurer; not contain a hostile fire exclusion; contain a contractual liability endorsement; and provide primary coverage to Landlord Insured Parties (any policy issued to Landlord Insured Parties providing duplicate or similar coverage shall be deemed excess over Tenant's policies, regardless of limits). Copies of such policies (if requested by Landlord), or certificates of insurance showing the limits of coverage required hereunder and showing Landlord as an additional insured, along with reasonable evidence of the payment of premiums for the applicable period, shall be delivered to Landlord by Tenant prior to (i) the earlier to occur of (x) the Commencement Date, or (y) the date that Tenant accesses the Premises under this Lease, and (ii) each renewal of said insurance. Tenant's policy may be a "blanket policy" with an aggregate per location endorsement which specifically provides that the amount of insurance shall not be prejudiced by other losses covered by the policy. Tenant shall, at least 5 days prior to the expiration of such policies, furnish Landlord with renewal certificates.

In each instance where insurance is to name Landlord as an additional insured, Tenant shall upon written request of Landlord also designate and furnish certificates so evidencing Landlord as additional insured to: (i) any lender of Landlord holding a security interest in the Project or any portion thereof, (ii) the landlord under any lease wherein Landlord is tenant of the real property on which the Project is located, if the interest of Landlord is or shall become that of a tenant under a ground or other underlying lease rather than that of a fee owner, and/or (iii) any management company retained by Landlord to manage the Project.

The property insurance obtained by Landlord and Tenant shall include a waiver of subrogation by the insurers and all rights based upon an assignment from its insured, against Landlord or Tenant, and their respective officers, directors, employees, managers, agents, invitees and contractors ("**Related Parties**"), in connection with any loss or damage thereby insured against. Neither party nor its respective Related Parties shall be liable to the other for loss or damage caused by any risk insured against under property insurance required to be maintained hereunder, and each party waives any claims against the other party, and its respective Related Parties, for such loss or damage. The failure of a party to insure its property shall not void this waiver. Landlord and its respective Related Parties shall not be liable for, and Tenant hereby waives all claims against such parties for, business interruption and losses occasioned thereby sustained by Tenant or any person claiming through Tenant resulting from any accident or occurrence in or upon the Premises or the Project from any cause whatsoever. If the foregoing waivers shall contravene any law with respect to exculpatory agreements, the liability of Landlord or Tenant shall be deemed not released but shall be secondary to the other's insurer.

Landlord may require insurance policy limits to be raised to conform with requirements of Landlord's lender and/or to bring coverage limits to levels then being generally required of new tenants within the Project; provided, however, that the increased amount of coverage is consistent with coverage amounts then being required by institutional owners of similar projects with tenants occupying similar size premises in the geographical area in which the Project is located.

18. **Restoration**. If, at any time during the Term, the Project or the Premises are damaged or destroyed by a fire or other insured casualty, Landlord shall notify Tenant within 60 days after discovery of such damage as to the amount of time Landlord reasonably estimates it will take to restore the Project or the Premises, as applicable (the "**Restoration Period**"). If the Restoration Period is estimated to exceed 12 months (the "**Maximum Restoration Period**"), Landlord may, in such notice, elect to terminate this Lease as of the date that is 75 days after the date of discovery of such damage or destruction; provided, however, that notwithstanding Landlord's election to restore, Tenant may elect to terminate this Lease by written notice to Landlord delivered within 10 business days of receipt of a notice from Landlord estimating a Restoration Period for the Premises longer than the Maximum Restoration Period. Unless either Landlord or Tenant so elects to terminate this Lease, Landlord shall, subject to receipt of sufficient insurance proceeds (with any deductible to be treated as a current Operating Expense), promptly restore the Premises (excluding the improvements installed by Tenant or by Landlord and paid for by Tenant), subject to delays arising from the collection of insurance proceeds, from Force Majeure events or as needed to obtain any license, clearance or other authorization of any kind required to enter into and restore the Premises issued by any Governmental Authority having jurisdiction over the use, storage, handling, treatment, generation, release, disposal, removal or remediation of Hazardous Materials (as defined in Section 30) in, on or about the Premises (collectively referred to herein as "**Hazardous Materials Clearances**"); provided, however, that if repair or restoration of the Premises is not substantially complete as of the end of the Maximum Restoration Period or, if longer, the Restoration Period, Landlord may, in its sole and absolute discretion, elect not to proceed with such repair and restoration, or Tenant may by written notice to Landlord delivered within 5 business days of the expiration of the Maximum Restoration Period or, if longer, the Restoration Period, elect to terminate this Lease, in which event Landlord shall be relieved of its obligation to make such repairs or restoration and this Lease shall terminate as of the date that is 75 days after the later of: (i) discovery of such damage or destruction, or (ii) the date all required Hazardous Materials Clearances are obtained, but Landlord shall retain any Rent paid and the right to any Rent payable by Tenant prior to such election by Landlord or Tenant.

Tenant, at its expense, shall promptly perform, subject to delays arising from the collection of insurance proceeds, from Force Majeure (as defined in Section 34) events or to obtain Hazardous Material Clearances, all repairs or restoration not required to be done by Landlord and shall promptly re-enter the Premises and commence doing business in accordance with this Lease. Notwithstanding the foregoing, either Landlord or Tenant may terminate this Lease upon written notice to the other if the Premises are damaged during the last year of the Term and Landlord reasonably estimates that it will take more than 2 months to repair such damage; provided, however, that such notice is delivered within 10 business days after the date that Landlord provides Tenant with written notice of the estimated Restoration Period. Notwithstanding anything to the contrary contained herein, Landlord shall also have the right to terminate this Lease if insurance proceeds are not available for such restoration. Rent shall be abated from the date all required Hazardous Material Clearances are obtained until the Premises are repaired and restored, in the proportion which the area of the Premises, if any, which is not usable by Tenant bears to the total area of the Premises, unless Landlord provides Tenant with other space during the period of repair that is suitable for the temporary conduct of Tenant's business. In the event that no Hazardous Material Clearances are required to be obtained by Tenant with respect to the Premises, rent abatement shall commence on the date of discovery of the damage or destruction. Such abatement shall be the sole remedy of Tenant, and except as provided in this Section 18, Tenant waives any right to terminate the Lease by reason of damage or casualty loss.

The provisions of this Lease, including this Section 18, constitute an express agreement between Landlord and Tenant with respect to any and all damage to, or destruction of, all or any part of the Premises, or any other portion of the Project, and any statute or regulation which is now or may hereafter be in effect shall have no application to this Lease or any damage or destruction to all or any part of the Premises or any other portion of the Project, the parties hereto expressly agreeing that this Section 18 sets forth their entire understanding and agreement with respect to such matters.

19. **Condemnation**. If the whole or any material part of the Premises or the Project is taken for any public or quasi-public use under governmental law, ordinance, or regulation, or by right of eminent domain, or by private purchase in lieu thereof (a "**Taking**" or "**Taken**"), and the Taking would in Landlord's reasonable judgment, either prevent or materially interfere with Tenant's use of the Premises or materially interfere with or impair Landlord's ownership or operation of the Project, then upon written notice by Landlord this Lease shall terminate and Rent shall be apportioned as of said date. If part of the Premises shall be Taken, and this Lease is not terminated as provided above, Landlord shall promptly restore the Premises and the Project as nearly as is commercially reasonable under the circumstances to their condition prior to such partial Taking and the rentable square footage of the Building, the rentable square footage of the Premises, Tenant's Share of Operating Expenses and the Rent payable hereunder during the unexpired Term shall be reduced to such extent as may be fair and reasonable under the circumstances. Upon any such Taking, Landlord shall be entitled to receive the entire price or award from any such Taking without any payment to Tenant, and Tenant hereby assigns to Landlord Tenant's interest, if any, in such award. Tenant shall have the right, to the extent that same shall not diminish Landlord's award, to make a separate claim against the condemning authority (but not Landlord) for such compensation as may be separately awarded or recoverable by Tenant for moving expenses and damage to Tenant's trade fixtures, if a separate award for such items is made to Tenant. Tenant hereby waives any and all rights it might otherwise have pursuant to any provision of state law to terminate this Lease upon a partial Taking of the Premises or the Project.

20. **Events of Default**. Each of the following events shall be a default ("**Default**") by Tenant under this Lease:

(a) **Payment Defaults**. Tenant shall fail to pay any installment of Rent or any other payment hereunder when due; provided, however, that Landlord will give Tenant notice and an opportunity to cure any failure to pay Rent within 5 days of Tenant's receipt of any such notice not more than once in any 12 month period and Tenant agrees that such notice shall be in lieu of and not in addition to, or shall be deemed to be, any notice required by law.

(b) **Insurance**. Any insurance required to be maintained by Tenant pursuant to this Lease shall be canceled or terminated or shall expire or shall be reduced or materially changed, or Landlord shall receive a notice of nonrenewal of any such insurance and Tenant shall fail to obtain replacement insurance at least 20 days before the expiration of the current coverage.

(c) **Abandonment**. Tenant shall abandon the Premises. Tenant shall not be deemed to have abandoned the Premises if Tenant provides Landlord with reasonable advance notice prior to vacating and, at the time of vacating the Premises, (i) Tenant completes Tenant's obligations under the Decommissioning and HazMat Closure Plan in compliance with Section 28, (ii) Tenant has obtained the release of the Premises of all Hazardous Materials Clearances and the Premises are free from any residual impact from the Tenant HazMat Operations and provides reasonably detailed documentation to Landlord confirming such matters, (iii) Tenant has made reasonable arrangements with Landlord for the security of the Premises for the balance of the Term, and (iv) Tenant continues during the balance of the Term to satisfy and perform all of Tenant's obligations under this Lease as they come due. Tenant vacating the Premises to allow for the occupancy of the Premises by a third party pursuant to an assignment or sublease pursuant to Section 22 of this Lease shall not constitute abandonment of the Premises by Tenant.

(d) **Improper Transfer**. Tenant shall assign, sublease or otherwise transfer or attempt to transfer all or any portion of Tenant's interest in this Lease or the Premises except as expressly permitted herein, or Tenant's interest in this Lease shall be attached, executed upon, or otherwise judicially seized and such action is not released within 90 days of the action.

(e) **Liens**. Tenant shall fail to discharge or otherwise obtain the release of any lien placed upon the Premises in violation of this Lease within 10 days after Tenant receives notice that any such lien is filed against the Premises.

(f) **Insolvency Events**. Tenant or any guarantor or surety of Tenant's obligations hereunder shall: (A) make a general assignment for the benefit of creditors; (B) commence any case, proceeding or other action seeking to have an order for relief entered on its behalf as a debtor or to adjudicate it a bankrupt or insolvent, or seeking reorganization, arrangement, adjustment, liquidation, dissolution or composition of it or its debts or seeking appointment of a receiver, trustee, custodian or other similar official for it or for all or of any substantial part of its property (collectively a "**Proceeding for Relief**"); (C) become the subject of any Proceeding for Relief which is not dismissed within 90 days of its filing or entry; or (D) die or suffer a legal disability (if Tenant, guarantor, or surety is an individual) or be dissolved or otherwise fail to maintain its legal existence (if Tenant, guarantor or surety is a corporation, partnership or other entity, except as a result of a merger, consolidation or corporate reorganization, or the purchase of all or substantially all of the assets or ownership interests of Tenant in connection with a Permitted Assignment (as defined in Section 22).

(g) **Estoppel Certificate or Subordination Agreement**. Tenant fails to execute any document required from Tenant under Sections 23 or 27 within 5 business days after a second notice requesting such document.

(h) **Other Defaults**. Tenant shall fail to comply with any provision of this Lease other than those specifically referred to in this Section 20, and, except as otherwise expressly provided herein, such failure shall continue for a period of 30 days after written notice thereof from Landlord to Tenant.

Any notice given under Section 20(h) hereof shall: (i) specify the alleged default, (ii) demand that Tenant cure such default, (iii) be in lieu of, and not in addition to, or shall be deemed to be, any notice required under any provision of applicable law, and (iv) not be deemed a forfeiture or a termination of this Lease unless Landlord elects otherwise in such notice; provided that if the nature of Tenant's default pursuant to Section 20(h) is such that it cannot be cured by the payment of money and reasonably requires more than 30 days to cure, then Tenant shall not be deemed to be in default if Tenant commences such cure within said 30 day period and thereafter diligently prosecutes the same to completion; provided, however, that such cure shall be completed no later than 90 days from the date of Landlord's notice.

21. **Landlord's Remedies**.

(a) **Payment By Landlord; Interest**. Upon a Default by Tenant hereunder, Landlord may, without waiving or releasing any obligation of Tenant hereunder, make such payment or perform such act. All sums so paid or incurred by Landlord, together with interest thereon, from the date such sums were paid or incurred, at the annual rate equal to 12% per annum or the highest rate permitted by law (the "**Default Rate**"), whichever is less, shall be payable to Landlord on demand as Additional Rent. Nothing herein shall be construed to create or impose a duty on Landlord to mitigate any damages resulting from Tenant's Default hereunder.

(b) **Late Payment Rent**. Late payment by Tenant to Landlord of Rent and other sums due will cause Landlord to incur costs not contemplated by this Lease, the exact amount of which will be extremely difficult and impracticable to ascertain. Such costs include, but are not limited to, processing and accounting charges and late charges which may be imposed on Landlord under any Mortgage covering the Premises. Therefore, if any installment of Rent due from Tenant is not received by Landlord within 5 days after the date such payment is due, Tenant shall pay to Landlord an additional sum equal to 6% of the overdue Rent as a late charge. Notwithstanding the foregoing, before assessing a late charge the first time in any calendar year, Landlord shall provide Tenant written notice of the delinquency and will waive the right if Tenant pays such delinquency within 5 days thereafter. The parties agree that this late charge represents a fair and reasonable estimate of the costs Landlord will incur by reason of late payment by Tenant. In addition to the late charge, Rent not paid when due shall bear interest at the Default Rate from the 5th day after the date due until paid.

(c) **Remedies**. Upon the occurrence of a Default, Landlord, at its option, without further notice or demand to Tenant, shall have in addition to all other rights and remedies provided in this Lease, at law or in equity, the option to pursue any one or more of the following remedies, each and all of which shall be cumulative and nonexclusive, without any notice or demand whatsoever.

(i) Terminate this Lease, or at Landlord's option, and to the extent permitted by applicable Legal Requirements, Tenant's right to possession only upon no less than 5 days' advance written notice to Tenant, in which event Tenant shall immediately surrender the Premises to Landlord, and if Tenant fails to do so, Landlord may, without prejudice to any other remedy which it may have for possession or arrearages in rent, enter upon and take possession of the Premises and expel or remove Tenant and any other person who may be occupying the Premises or any part thereof, without being liable for prosecution or any claim for damages therefor;

(ii) Upon any termination of this Lease, whether pursuant to the foregoing Section 21(c)(i) or otherwise, Landlord may recover from Tenant the following:

(A) The worth at the time of award of any unpaid rent which has been earned at the time of such termination; plus

(B) The worth at the time of award of the amount by which the unpaid rent which would have been earned after termination until the time of award exceeds the amount of such rental loss that Tenant proves could have been reasonably avoided; plus

(C) The worth at the time of award of the amount by which the unpaid rent for the balance of the Term after the time of award exceeds the amount of such rental loss that Tenant proves could have been reasonably avoided; plus

(D) Any other amount necessary to compensate Landlord for all the detriment proximately caused by Tenant's failure to perform its obligations under this Lease or which in the ordinary course of things would be likely to result therefrom, specifically including, but not limited to, brokerage commissions attributable to the remainder of the Term of this Lease and, to the extent permitted by applicable Legal Requirements, advertising expenses incurred, expenses of remodeling the Premises or any portion thereof for a new tenant, whether for the same or a different use, and any special concessions made to obtain a new tenant; and

(E) At Landlord's election, such other amounts in addition to or in lieu of the foregoing as may be permitted from time to time by applicable law.

The term "**rent**" as used in this Section 21 shall be deemed to be and to mean all sums of every nature required to be paid by Tenant pursuant to the terms of this Lease, whether to Landlord or to others. As used in Sections 21(c)(ii)(A) and (B), above, the "**worth at the time of award**" shall be computed by allowing interest at the Default Rate. As used in Section 21(c)(ii)(C) above, the "**worth at the time of award**" shall be computed by discounting such amount at the discount rate of the Federal Reserve Bank of San Francisco at the time of award plus 1%.

(iii) Landlord may continue this Lease in effect after Tenant's Default and recover rent as it becomes due (Landlord and Tenant hereby agreeing that Tenant has the right to sublet or assign hereunder, subject only to reasonable limitations). Accordingly, if Landlord does not elect to terminate this Lease following a Default by Tenant, Landlord may, from time to time, without terminating this Lease, enforce all of its rights and remedies hereunder, including the right to recover all Rent as it becomes due.

(iv) Whether or not Landlord elects to terminate this Lease following a Default by Tenant, Landlord shall have the right to terminate any and all subleases, licenses, concessions or other consensual arrangements for possession entered into by Tenant and affecting the Premises or may, in Landlord's sole discretion, succeed to Tenant's interest in such subleases, licenses, concessions or arrangements. Upon Landlord's election to succeed to Tenant's interest in any such subleases, licenses, concessions or arrangements, Tenant shall, as of the date of notice by Landlord of such election, have no further right to or interest in the rent or other consideration receivable thereunder.

(v) Independent of the exercise of any other remedy of Landlord hereunder or under applicable law, Landlord may conduct an environmental test of the Premises as generally described in Section 30(d) hereof, at Tenant's expense.

(d) **Effect of Exercise**. Exercise by Landlord of any remedies hereunder or otherwise available shall not be deemed to be an acceptance of surrender of the Premises and/or a termination of this Lease by Landlord, it being understood that such surrender and/or termination can be effected only by the express written agreement of Landlord and Tenant. Any law, usage, or custom to the contrary notwithstanding, Landlord shall have the right at all times to enforce the provisions of this Lease in strict accordance with the terms hereof; and the failure of Landlord at any time to enforce its rights under this Lease strictly in accordance with same shall not be construed as having created a custom in any way or manner contrary to the specific terms, provisions, and covenants of this Lease or as having modified the same and shall not be deemed a waiver of Landlord's right to enforce one or more of its rights in connection with any subsequent default. A receipt by Landlord of Rent or other payment with knowledge of the breach of any covenant hereof shall not be deemed a waiver of such breach, and no waiver by Landlord of any provision of this Lease shall be deemed to have been made unless expressed in writing and signed by Landlord. To the greatest extent permitted by law, Tenant waives the service of notice of Landlord's intention to re-enter, re-take or otherwise obtain possession of the Premises as provided in any statute, or to institute legal proceedings to that end, and also waives all right of redemption in case Tenant shall be dispossessed by a judgment or by warrant of any court or judge. Any reletting of the Premises or any portion thereof shall be on such terms and conditions as Landlord in its sole discretion may determine. Landlord shall not be liable for, nor shall Tenant's obligations hereunder be diminished because of, Landlord's failure to relet the Premises or collect rent due in respect of such reletting or otherwise to mitigate any damages arising by reason of Tenant's Default. Notwithstanding any contrary provision of this Lease, Tenant shall not be liable to Landlord for any consequential damages, arising from a default by Tenant under this Lease; provided that this sentence shall not apply to Landlord's damages (x) as expressly provided for in Section 8, and/or (y) in connection with Tenant's obligations as more fully set forth in Section 30. In no event shall the foregoing limit the damages to which Landlord is entitled under this Section 21.

22. **Assignment and Subletting**.

(a) **General Prohibition**. Without Landlord's prior written consent subject to and on the conditions described in this Section 22, Tenant shall not, directly or indirectly, voluntarily or by operation of law, assign this Lease or sublease the Premises or any part thereof or mortgage, pledge, or hypothecate its leasehold interest or grant any concession or license within the Premises, and any attempt to do any of the foregoing shall be void and of no effect. Except as otherwise provided in Section 22(b) in connection with a Permitted Assignment, if Tenant is a corporation, partnership or limited liability company, the shares or other ownership interests thereof which are not actively traded upon a stock exchange or in the over-the-counter market, a transfer or series of transfers whereby 50% or more of the issued and outstanding shares or other ownership interests of such corporation are, or voting control is, transferred (but excepting transfers upon deaths of individual owners) from a person or persons or entity or entities which were owners thereof at time of execution of this Lease to persons or entities who were not owners of shares or other ownership interests of the corporation, partnership or limited liability company at time of execution of this Lease, shall be deemed an assignment of this Lease requiring the consent of Landlord as provided in this Section 22. Notwithstanding the foregoing, Tenant shall have the right to obtain financing from investors (including venture capital funding and corporate partners) or undergo a public offering which results in a change in control of Tenant without such change of control constituting an assignment under this Section 22 requiring Landlord consent, provided that (i) Tenant notifies Landlord in writing of the financing at least 5 business days prior to the closing of the financing, and (ii) provided that in no event shall such financing result in a change in use of the Premises from the use contemplated by Tenant at the commencement of the Term.

(b) **Permitted Transfers**. If Tenant desires to assign, sublease, hypothecate or otherwise transfer this Lease or sublet the Premises, other than pursuant to a Permitted Assignment (as defined below), then at least 15 business days, but not more than 60 business days, before the date Tenant desires the assignment or sublease to be effective (the "**Assignment Date**"), Tenant shall give Landlord a notice (the "**Assignment Notice**") containing such information about the proposed assignee or sublessee, including the proposed use of the Premises and any Hazardous Materials proposed to be used, stored handled, treated, generated in or released or disposed of from the Premises, the Assignment Date, any relationship between Tenant and the proposed assignee or sublessee, and all material terms and conditions of the proposed assignment or sublease, including a copy of any proposed assignment or sublease in its final form, and such other information as Landlord may deem reasonably necessary or appropriate to its consideration whether to grant its consent. Landlord may, by giving written notice to Tenant within 15 business days after receipt of the Assignment Notice: (i) grant such consent (provided that Landlord shall further have the right to review and approve or disapprove the proposed form of sublease prior to the effective date of any such subletting), or (ii) refuse such consent, in its reasonable discretion; or (iii) other than with respect to any Permitted Assignment, with respect to any assignment or with respect to any sublease that would result in more than 50% of the Premises being subleased for all or substantially all of the remainder of the Term, terminate this Lease with respect to the space described in the Assignment Notice as of the Assignment Date (an "**Assignment Termination**"). Among other reasons, it shall be reasonable for Landlord to withhold its consent in any of these instances: (1) the proposed assignee or subtenant is a governmental agency; (2) in Landlord's reasonable judgment, the use of the Premises by the proposed assignee or subtenant would entail any alterations that would lessen the value of the leasehold improvements in the Premises, or would require increased services by Landlord; (3) in Landlord's reasonable judgment, the proposed assignee or subtenant is engaged in areas of scientific research or other business concerns that are controversial such that they may (i) attract or cause negative publicity for or about the Building or the Project, (ii) negatively affect the reputation of the Building, the Project or Landlord, or (iii) attract protestors to the Building or the Project; (4) in Landlord's reasonable judgment, the proposed assignee or subtenant lacks the creditworthiness to support the financial obligations it will incur under the proposed assignment or sublease; (5) Landlord has experienced previous defaults by or is in litigation with the proposed assignee or subtenant; (6) the use of the Premises by the proposed assignee or subtenant will violate any applicable Legal Requirement; or (7) the assignment or sublease is prohibited by Landlord's lender. If Landlord delivers notice of its election to exercise an Assignment Termination, Tenant shall have the right to withdraw such Assignment Notice by written notice to Landlord of such election within 5 business days after Landlord's notice electing to exercise the Assignment Termination. If Tenant withdraws such Assignment Notice, this Lease shall continue in full force and effect. If Tenant does not withdraw such Assignment Notice, this Lease, and the term and estate herein granted, shall terminate as of the Assignment Date with respect to the space described in such Assignment Notice. No failure of Landlord to exercise any such option to terminate this Lease, or to deliver a timely notice in response to the Assignment Notice, shall be deemed to be Landlord's consent to the proposed assignment, sublease or other transfer. Tenant shall pay to Landlord a fee equal to Two Thousand Five Hundred Dollars ($2,500) in connection with its consideration of any Assignment Notice and/or its preparation or review of any consent documents. Notwithstanding the foregoing, Landlord's consent to an assignment of this Lease or a subletting of any portion of the Premises to any entity controlling, controlled by or under common control with Tenant (a "**Control Permitted Assignment**") shall not be required, provided that Landlord shall have the right to approve, in Landlord's reasonable discretion, the form of any such sublease or assignment. In addition, Tenant shall have the right to assign this Lease, upon 30 days prior written notice to Landlord ((x) unless Tenant is prohibited from providing such notice by applicable Legal Requirements in which case Tenant shall notify Landlord promptly thereafter, and (y) if the transaction is subject to confidentiality requirements, Tenant's advance notification shall be subject to Landlord's execution of a non-disclosure agreement reasonably acceptable to Landlord and Tenant) but without obtaining Landlord's prior written consent, to a corporation or other entity which is a successor-in-interest to Tenant, by way of merger, consolidation or corporate reorganization, or by the purchase of all or substantially all of the assets or the ownership interests of Tenant provided that (i) such merger or consolidation, or such acquisition or assumption, as the case may be, is for a good business purpose and not principally for the purpose of transferring the Lease, and (ii) the net worth (as determined in accordance with generally accepted accounting principles ("**GAAP**")) of the assignee (or the assignee's ultimate parent provided that such ultimate parent executes a guaranty of this Lease in favor of Landlord in form and content reasonably acceptable to Landlord in its good faith determination) immediately following such transfer shall not be less than the greater of the net worth (as determined in accordance with GAAP) of Tenant as of (A) the Commencement Date, or (B) as of the date of Tenant's most current quarterly or annual financial statements, and (iii) such assignee shall agree in writing to assume all of the terms, covenants and conditions of this Lease (a "**Corporate Permitted Assignment**"). Control Permitted Assignments and Corporate Permitted Assignments are hereinafter referred to as "**Permitted Assignments**."

Notwithstanding anything to the contrary contained in this Lease, Tenant may from time to time enter into agreements (each, a "**Shared Space Arrangement**") with Tenant's agents, contractors, consultants or affiliates pursuant to which such agents, contractors, consultants or affiliates may occupy up to 20% of the Premises as "**Shared Space Area**", and such agreements shall not require Landlord's consent under this Section 22; provided, however, that Tenant shall be required to provide Landlord with a copy of each such license agreement and, prior to the effective date of each such license agreement, Tenant and each licensee shall be required to execute Landlord's reasonable form of acknowledgment pursuant to which Tenant and the licensee acknowledge and agree, among other things, that: (i) the terms of the Shared Space Arrangement are subject and subordinate to the terms of the Lease, (ii) if the Lease terminates, then the Shared Space Arrangement shall terminate concurrently therewith, (iii) each licensee shall, during the term of its applicable Shared Space Arrangement, maintain the same insurance as is required of Tenant under the Lease and provide Landlord with insurance certificates evidencing the same and naming the Landlord Parties as additional insureds, and (iv) the waivers and releases set forth in the second to last paragraph of Section 17 that apply as between Landlord and Tenant shall also apply as between Landlord and licensee. Tenant shall be fully responsible for the conduct of such companies within the Shared Space Area and the Project, and Tenant's indemnification obligations set forth in this Lease shall apply with respect to the conduct of such parties within the Shared Space Area and Project.

(c) **Additional Conditions**. As a condition to any such assignment or subletting, whether or not Landlord's consent is required, Landlord may require:

(i) that any assignee or subtenant agree, in writing at the time of such assignment or subletting, that if Landlord gives such party notice that Tenant is in default under this Lease, such party shall thereafter make all payments otherwise due Tenant directly to Landlord, which payments will be received by Landlord without any liability except to credit such payment against those due under the Lease, and any such third party shall agree to attorn to Landlord or its successors and assigns should this Lease be terminated for any reason; provided, however, in no event shall Landlord or its successors or assigns be obligated to accept such attornment; and

(ii) A list of Hazardous Materials, certified by the proposed assignee or sublessee to be true and correct, which the proposed assignee or sublessee intends to use, store, handle, treat, generate in or release or dispose of from the Premises, together with copies of all documents relating to such use, storage, handling, treatment, generation, release or disposal of Hazardous Materials by the proposed assignee or subtenant in the Premises or on the Project, prior to the proposed assignment or subletting, including, without limitation: permits; approvals; reports and correspondence; storage and management plans; plans relating to the installation of any storage tanks to be installed in or under the Project (provided, said installation of tanks shall only be permitted after Landlord has given its written consent to do so, which consent may be withheld in Landlord's sole and absolute discretion); and all closure plans or any other documents required by any and all federal, state and local Governmental Authorities for any storage tanks installed in, on or under the Project for the closure of any such tanks. Neither Tenant nor any such proposed assignee or subtenant is required, however, to provide Landlord with any portion(s) of the such documents containing information of a proprietary nature which, in and of themselves, do not contain a reference to any Hazardous Materials or hazardous activities.

(d) **No Release of Tenant, Sharing of Excess Rents**. Notwithstanding any assignment or subletting, Tenant and any guarantor or surety of Tenant's obligations under this Lease shall at all times remain fully and primarily responsible and liable for the payment of Rent and for compliance with all of Tenant's other obligations under this Lease. Except in the case of a Permitted Assignment, if the Rent due and payable by a sublessee or assignee (or a combination of the rental payable under such sublease or assignment plus any other consideration therefor or incident thereto in any form) exceeds the sum of the rental payable under this Lease, (excluding however, any Rent payable under this Section) and actual and reasonable brokerage fees, legal costs and any design or construction fees directly related to and required pursuant to the terms of any such sublease) ("**Excess Rent**"), then Tenant shall be bound and obligated to pay Landlord as Additional Rent hereunder 50% of such Excess Rent within 30 days following receipt thereof by Tenant. If Tenant shall sublet the Premises or any part thereof, Tenant hereby immediately and irrevocably assigns to Landlord, as security for Tenant's obligations under this Lease, all rent from any such subletting, and Landlord as assignee, or a receiver for Tenant appointed on Landlord's application, may collect such rent and apply it toward Tenant's obligations under this Lease; except that, until the occurrence of a Default, Tenant shall have the right to collect such rent.

(e) **No Waiver**. The consent by Landlord to an assignment or subletting shall not relieve Tenant or any assignees of this Lease or any sublessees of the Premises from obtaining the consent of Landlord to any further assignment or subletting nor shall it release Tenant or any assignee or sublessee of Tenant from full and primary liability under the Lease. The acceptance of Rent hereunder, or the acceptance of performance of any other term, covenant, or condition thereof, from any other person or entity shall not be deemed to be a waiver of any of the provisions of this Lease or a consent to any subletting, assignment or other transfer of the Premises.

(f) **Prior Conduct of Proposed Transferee**. Notwithstanding any other provision of this Section 22, other than in connection with a Permitted Assignment, if (i) the proposed assignee or sublessee of Tenant has been required by any prior landlord, lender or Governmental Authority to take remedial action in connection with Hazardous Materials contaminating a property, where the contamination resulted from such party's action or use of the property in question, (ii) the proposed assignee or sublessee is subject to an enforcement order issued by any Governmental Authority in connection with the use, storage, handling, treatment, generation, release or disposal of Hazardous Materials (including, without limitation, any order related to the failure to make a required reporting to any Governmental Authority), or (iii) because of the existence of a pre-existing environmental condition in the vicinity of or underlying the Project, the risk that Landlord would be targeted as a responsible party in connection with the remediation of such pre-existing environmental condition would be materially increased or exacerbated by the proposed use of Hazardous Materials by such proposed assignee or sublessee, Landlord shall have the absolute right to refuse to consent to any assignment or subletting to any such party.

23. **Estoppel Certificate**. Tenant shall, within 15 business days of written notice from Landlord, execute, acknowledge and deliver a statement in writing in any form reasonably requested by a proposed lender or purchaser, (i) certifying that this Lease is unmodified and in full force and effect (or, if modified, stating the nature of such modification and certifying that this Lease as so modified is in full force and effect) and the dates to which the rental and other charges are paid in advance, if any, (ii) acknowledging, to Tenant's knowledge, that there are not any uncured defaults on the part of Landlord hereunder, or specifying such defaults if any are claimed, and (iii) setting forth such further information with respect to the status of this Lease or the Premises as may be reasonably requested thereon. Any such statement may be relied upon by any prospective purchaser or encumbrancer of all or any portion of the real property of which the Premises are a part. Tenant's failure to deliver such statement within 5 business days after Tenant's receipt of a second notice from Landlord requesting such statement after the expiration of the aforementioned 15 business day period shall, at the option of Landlord, constitute a Default under this Lease, and, in any event, shall be conclusive upon Tenant that the Lease is in full force and effect and without modification except as may be represented by Landlord in any certificate prepared by Landlord and delivered to Tenant for execution.

24. **Quiet Enjoyment**. So long as Tenant is not in Default under this Lease, Tenant shall, subject to the terms of this Lease, at all times during the Term, have peaceful and quiet enjoyment of the Premises against any person claiming by, through or under Landlord.

25. **Prorations**. All prorations required or permitted to be made hereunder shall be made on the basis of a 360 day year and 30 day months.

26. **Rules and Regulations**. Tenant shall, at all times during the Term and any extension thereof, comply with all reasonable rules and regulations at any time or from time to time established by Landlord covering use of the Premises and the Project. Such rules and regulations may include, without limitation, rules and regulations which are intended to encourage social distancing, promote and protect health and physical well-being at the Project and/or intended to limit the spread of Infectious Conditions. The current rules and regulations are attached hereto as **Exhibit E**. If there is any conflict between said rules and regulations and other provisions of this Lease, the terms and provisions of this Lease shall control. Landlord shall not have any liability or obligation for the breach of any rules or regulations by other tenants in the Project and shall not enforce such rules and regulations in a discriminatory manner.

27. **Subordination**. This Lease and Tenant's interest and rights hereunder are hereby made and shall be subject and subordinate at all times to the lien of any Mortgage now existing or hereafter created on or against the Project or the Premises, and all amendments, restatements, renewals, modifications, consolidations, refinancing, assignments and extensions thereof, without the necessity of any further instrument or act on the part of Tenant; provided, however that so long as there is no Default hereunder, Tenant's right to possession of the Premises and Tenant's other rights and interests to the Premises and the Project under this Lease shall not be disturbed by the Holder of any such Mortgage. Tenant agrees, at the election of the Holder of any such Mortgage, to attorn to any such Holder. Tenant agrees upon demand to execute, acknowledge and deliver such commercially reasonable instruments, confirming such subordination, and such instruments of attornment as shall be requested by any such Holder, provided any such instruments contain appropriate non-disturbance provisions assuring Tenant's quiet enjoyment of the Premises as set forth in Section 24 hereof. Notwithstanding the foregoing, any such Holder may at any time subordinate its Mortgage to this Lease, without Tenant's consent, by notice in writing to Tenant, and thereupon this Lease shall be deemed prior to such Mortgage without regard to their respective dates of execution, delivery or recording and in that event such Holder shall have the same rights with respect to this Lease as though this Lease had been executed prior to the execution, delivery and recording of such Mortgage and had been assigned to such Holder. The term "**Mortgage**" whenever used in this Lease shall be deemed to include deeds of trust, security assignments and any other encumbrances, and any reference to the "**Holder**" of a Mortgage shall be deemed to include the beneficiary under a deed of trust.

28. **Surrender**. Upon the expiration of the Term or earlier termination of Tenant's right of possession, Tenant shall surrender the Premises to Landlord in the same condition as received, subject to the provisions of Section 2(b) of the Work Letter, any Alterations or Installations permitted by Landlord to remain in the Premises, free of Hazardous Materials brought upon, kept, used, stored, handled, treated, generated in, or released or disposed of from, the Premises by any person other than Landlord or Landlord's employees, agents and contractors (collectively, "**Tenant HazMat Operations**") and released of all Hazardous Materials Clearances, broom clean, ordinary wear and tear and casualty loss and condemnation covered by Sections 18 and 19 excepted. At least 3 months prior to the surrender of the Premises or such earlier date as Tenant may elect to cease operations at the Premises, Tenant shall deliver to Landlord a narrative description of the actions proposed (or required by any Governmental Authority) to be taken by Tenant in order to surrender the Premises (including any Installations permitted by Landlord to remain in the Premises) at the expiration or earlier termination of the Term, free from any residual impact from the Tenant HazMat Operations and otherwise released for unrestricted use and occupancy (the "**Decommissioning and HazMat Closure Plan**"). Such Decommissioning and HazMat Closure Plan shall be accompanied by a current listing of (i) all Hazardous Materials licenses and permits held by or on behalf of any Tenant Party with respect to the Premises, and (ii) all Hazardous Materials used, stored, handled, treated, generated, released or disposed of from the Premises, and shall be subject to the review and approval of Landlord's environmental consultant, which approval shall not be unreasonably withheld. In connection with the review and approval of the Decommissioning and HazMat Closure Plan, upon the request of Landlord, Tenant shall deliver to Landlord or its consultant such additional non-proprietary information concerning Tenant HazMat Operations as Landlord shall reasonably request. On or before such surrender, Tenant shall deliver to Landlord evidence that the approved Decommissioning and HazMat Closure Plan shall have been satisfactorily completed and Landlord shall have the right, subject to reimbursement at Tenant's expense as set forth below, to cause Landlord's environmental consultant to inspect the Premises and perform such additional procedures as may be deemed reasonably necessary to confirm that the Premises are, as of the effective date of such surrender or early termination of the Lease, free from any residual impact from Tenant HazMat Operations. Tenant shall reimburse Landlord, as Additional Rent, for the reasonable, actual out-of-pocket expense incurred by Landlord for Landlord's environmental consultant to review and approve the Decommissioning and HazMat Closure Plan and to visit the Premises and verify satisfactory completion of the same, which cost shall not exceed $5,000. Landlord shall have the unrestricted right to deliver such Decommissioning and HazMat Closure Plan and any report by Landlord's environmental consultant with respect to the surrender of the Premises to third parties.

If Tenant shall fail to prepare or submit a Decommissioning and HazMat Closure Plan approved by Landlord, or if Tenant shall fail to complete the approved Decommissioning and HazMat Closure Plan, or if such Decommissioning and HazMat Closure Plan, whether or not approved by Landlord, shall fail to adequately address any residual effect of Tenant HazMat Operations in, on or about the Premises, Landlord shall have the right to take such actions as Landlord may deem reasonable or appropriate to assure that the Premises and the Project are surrendered free from any residual impact from Tenant HazMat Operations, the cost of which actions shall be reimbursed by Tenant as Additional Rent within 30 days following Tenant's receipt of a reasonably documented invoice therefor,, without regard to the limitation set forth in the first paragraph of this Section 28.

Tenant shall immediately return to Landlord all keys and/or access cards to parking, the Project, restrooms or all or any portion of the Premises furnished to or otherwise procured by Tenant. If any such access card or key is lost, Tenant shall pay to Landlord, at Landlord's election, either the reasonable, actual cost of replacing such lost access card or key or the reasonable, actual cost of reprogramming the access security system in which such access card was used or changing the lock or locks opened by such lost key. Any Tenant's Property, Alterations and property not so removed by Tenant as permitted or required herein shall be deemed abandoned and may be stored, removed, and disposed of by Landlord at Tenant's expense, and Tenant waives all claims against Landlord for any damages resulting from Landlord's retention and/or disposition of such property. All obligations of Tenant hereunder not fully performed as of the termination of the Term, including the obligations of Tenant under Section 30 hereof, shall survive the expiration or earlier termination of the Term, including, without limitation, indemnity obligations, payment obligations with respect to Rent and obligations concerning the condition and repair of the Premises.

29. **Waiver of Jury Trial**. TO THE EXTENT PERMITTED BY LAW, TENANT AND LANDLORD WAIVE ANY RIGHT TO TRIAL BY JURY OR TO HAVE A JURY PARTICIPATE IN RESOLVING ANY DISPUTE, WHETHER SOUNDING IN CONTRACT, TORT, OR OTHERWISE, BETWEEN LANDLORD AND TENANT ARISING OUT OF THIS LEASE OR ANY OTHER INSTRUMENT, DOCUMENT, OR AGREEMENT EXECUTED OR DELIVERED IN CONNECTION HEREWITH OR THE TRANSACTIONS RELATED HERETO.

30. **Environmental Requirements**.

(a) **Prohibition/Compliance/Indemnity**. Tenant shall not cause or permit any Hazardous Materials (as hereinafter defined) to be brought upon, kept, used, stored, handled, treated, generated in or about, or released or disposed of from, the Premises or the Project in violation of applicable Environmental Requirements (as hereinafter defined) by Tenant or any Tenant Party. If Tenant breaches the obligation stated in the preceding sentence, or if the presence of Hazardous Materials in the Premises during the Term or any holding over results in contamination of the Premises, the Project or any adjacent property or if contamination of the Premises, the Project or any adjacent property by Hazardous Materials brought into, kept, used, stored, handled, treated, generated in or about, or released or disposed of from, the Premises by anyone other than Landlord and Landlord's employees, agents and contractors otherwise occurs during the Term or any holding over, Tenant hereby indemnifies and shall defend and hold Landlord, its officers, directors, employees, agents and contractors harmless from any and all actions (including, without limitation, remedial or enforcement actions of any kind, administrative or judicial proceedings, and orders or judgments arising out of or resulting therefrom), costs, claims, damages (including, without limitation, punitive damages and damages based upon diminution in value of the Premises or the Project, or the loss of, or restriction on, use of the Premises or any portion of the Project), expenses (including, without limitation, attorneys', consultants' and experts' fees, court costs and amounts paid in settlement of any claims or actions), fines, forfeitures or other civil, administrative or criminal penalties, injunctive or other relief (whether or not based upon personal injury, property damage, or contamination of, or adverse effects upon, the environment, water tables or natural resources), liabilities or losses (collectively, "**Environmental Claims**") which arise during or after the Term as a result of such contamination. This indemnification of Landlord by Tenant includes, without limitation, costs incurred in connection with any investigation of site conditions or any cleanup, treatment, remedial, removal, or restoration work required by any federal, state or local Governmental Authority because of Hazardous Materials present in the air, soil or ground water above, on, or under the Premises. Without limiting the foregoing, if the presence of any Hazardous Materials on the Premises, the Project or any adjacent property caused or permitted by Tenant or any Tenant Party results in any contamination of the Premises, the Project or any adjacent property, Tenant shall promptly take all actions at its sole expense and in accordance with applicable Environmental Requirements as are necessary to return the Premises, the Project or any adjacent property to the condition existing prior to the time of such contamination, provided that Landlord's approval of such action shall first be obtained, which approval shall not unreasonably be withheld so long as such actions would not potentially have any material adverse long- term or short-term effect on the Premises or the Project. Notwithstanding anything to the contrary contained in this Section 30, Tenant shall not be responsible for, and the indemnification and hold harmless obligation set forth in this paragraph shall not apply to (i) contamination in, on, under or around the Premises which Tenant can prove to Landlord's reasonable satisfaction existed in the Premises immediately prior to Tenant's occupancy of the Premises, (ii) the presence of any Hazardous Materials in, on, under or around the Premises which Tenant can prove to Landlord's reasonable satisfaction migrated from outside of the Premises into the Premises, or (iii) the presence of any Hazardous Materials in, on, under or around the Premises caused by Landlord or any Landlord's employees, agents and contractors, unless in any case, the presence of such Hazardous Materials (x) is the result of a breach by Tenant of any of its obligations under this Lease, or (y) was caused, contributed to or exacerbated by Tenant or any Tenant Party.

(b) **Business**. Landlord acknowledges that it is not the intent of this Section 30 to prohibit Tenant from using the Premises for the Permitted Use. Tenant may operate its business according to prudent industry practices so long as the use or presence of Hazardous Materials is strictly and properly monitored according to all then applicable Environmental Requirements. As a material inducement to Landlord to allow Tenant to use Hazardous Materials in connection with its business, Tenant agrees to deliver to Landlord prior to the Commencement Date a list identifying each type of Hazardous Materials to be brought upon, kept, used, stored, handled, treated, generated on, or released or disposed of from, the Premises and setting forth any and all governmental approvals or permits required in connection with the presence, use, storage, handling, treatment, generation, release or disposal of such Hazardous Materials on or from the Premises ("**Hazardous Materials List**"). Upon Landlord's request, or any time that Tenant is required to deliver a Hazardous Materials List to any Governmental Authority (e.g., the fire department) in connection with Tenant's use or occupancy of the Premises, Tenant shall deliver to Landlord a copy of such Hazardous Materials List. Tenant shall deliver to Landlord true and correct copies of the following documents (the "**Haz Mat Documents**") relating to the use, storage, handling, treatment, generation, release or disposal of Hazardous Materials prior to the Commencement Date, or if unavailable at that time, concurrent with the receipt from or submission to a Governmental Authority: permits; approvals; reports and correspondence; storage and management plans, notice of violations of any Legal Requirements; plans relating to the installation of any storage tanks to be installed in or under the Project (provided, said installation of tanks shall only be permitted after Landlord has given Tenant its written consent to do so, which consent may be withheld in Landlord's sole and absolute discretion); all closure plans or any other documents required by any and all federal, state and local Governmental Authorities for any storage tanks installed in, on or under the Project for the closure of any such tanks; and a Decommissioning and HazMat Closure Plan (to the extent surrender in accordance with Section 28 cannot be accomplished in 3 months). Tenant is not required, however, to provide Landlord with any portion(s) of the Haz Mat Documents containing information of a proprietary nature which, in and of themselves, do not contain a reference to any Hazardous Materials or hazardous activities. It is not the intent of this Section to provide Landlord with information which could be detrimental to Tenant's business should such information become possessed by Tenant's competitors.

(c) **Tenant Representation and Warranty**. Tenant hereby represents and warrants to Landlord that (i) neither Tenant nor, to Tenant's actual knowledge, any of its legal predecessors has been required by any prior landlord, lender or Governmental Authority at any time to take remedial action in connection with Hazardous Materials contaminating a property which contamination was permitted by Tenant of such predecessor or resulted from Tenant's or such predecessor's action or use of the property in question, and (ii) Tenant is not subject to any enforcement order issued by any Governmental Authority in connection with the use, storage, handling, treatment, generation, release or disposal of Hazardous Materials (including, without limitation, any order related to the failure to make a required reporting to any Governmental Authority). If Landlord determines that this representation and warranty was not true as of the date of this lease, Landlord shall have the right to terminate this Lease in Landlord's sole and absolute discretion.

(d) **Testing**. Landlord shall have the right to conduct annual tests of the Premises to determine whether any contamination of the Premises or the Project has occurred as a result of Tenant's use. Tenant shall be required to pay the reasonable, actual cost of such annual test of the Premises only if there is a violation of this Section 30 or if contamination for which Tenant is responsible under this Section 30 is identified; provided, however, that if Tenant conducts its own tests of the Premises using third party contractors and test procedures reasonably acceptable to Landlord which tests are certified to Landlord, Landlord shall accept such tests in lieu of the annual tests to be paid for by Tenant. In addition, at any time, and from time to time, prior to the expiration or earlier termination of the Term, Landlord shall have the right to conduct appropriate tests of the Premises and the Project to determine if contamination has occurred as a result of Tenant's use of the Premises. In connection with such testing, upon the reasonable written request of Landlord, Tenant shall deliver to Landlord or its consultant such non- proprietary information concerning the use of Hazardous Materials (other than Hazardous Materials contained in products customarily used by tenants in de minimis quantities for ordinary cleaning and office purposes) in or about the Premises by Tenant or any Tenant Party. If contamination has occurred for which Tenant is liable under this Section 30, Tenant shall pay all costs to conduct such tests. If no such contamination is found, Landlord shall pay the costs of such tests (which shall not constitute an Operating Expense). Landlord shall provide Tenant with a copy of all third party, non-confidential reports and tests of the Premises made by or on behalf of Landlord during the Term without representation or warranty and subject to a confidentiality agreement. Tenant shall, at its sole cost and expense, promptly and satisfactorily remediate any environmental conditions identified by such testing for which Tenant is responsible under this Section 30 in accordance with all Environmental Requirements. Landlord's receipt of or satisfaction with any environmental assessment in no way waives any rights which Landlord may have against Tenant.

(e) **Intentionally Omitted**.

(f) **Underground Tanks**. If underground or other storage tanks storing Hazardous Materials located on the Premises or the Project are used by Tenant or are hereafter placed on the Premises or the Project by Tenant, Tenant shall install, use, monitor, operate, maintain, upgrade and manage such storage tanks, maintain appropriate records, obtain and maintain appropriate insurance, implement reporting procedures, properly close any underground storage tanks, and take or cause to be taken all other actions necessary or required under applicable state and federal Legal Requirements, as such now exists or may hereafter be adopted or amended in connection with the installation, use, maintenance, management, operation, upgrading and closure of such storage tanks.

(g) **Tenant's Obligations**. Landlord's and Tenant's obligations under this Section 30 shall survive the expiration or earlier termination of the Lease. During any period of time after the expiration or earlier termination of this Lease required by Tenant or Landlord to complete the removal from the Premises of any Hazardous Materials (including, without limitation, the release and termination of any licenses or permits restricting the use of the Premises and the completion of the approved Decommissioning and HazMat Closure Plan), Tenant shall continue to pay the full Rent in accordance with this Lease for any portion of the Premises not relet by Landlord in Landlord's sole discretion, which Rent shall be prorated daily.

(h) **Definitions**. As used herein, the term "**Environmental Requirements**" means all applicable present and future statutes, regulations, ordinances, rules, codes, judgments, orders or other similar enactments of any Governmental Authority regulating or relating to health, safety, or environmental conditions on, under, or about the Premises or the Project, or the environment, including without limitation, the following: the Comprehensive Environmental Response, Compensation and Liability Act; the Resource Conservation and Recovery Act; and all state and local counterparts thereto, and any regulations or policies promulgated or issued thereunder. As used herein, the term "**Hazardous Materials**" means and includes any substance, material, waste, pollutant, or contaminant listed or defined as hazardous or toxic, or regulated by reason of its impact or potential impact on humans, animals and/or the environment under any Environmental Requirements, asbestos and petroleum, including crude oil or any fraction thereof, natural gas liquids, liquefied natural gas, or synthetic gas usable for fuel (or mixtures of natural gas and such synthetic gas). As defined in Environmental Requirements, Tenant is and shall be deemed to be the "**operator**" of Tenant's "**facility**" and the "**owner**" of all Hazardous Materials brought on the Premises by Tenant or any Tenant Party, and the wastes, by-products, or residues generated, resulting, or produced therefrom.

31. **Tenant's Remedies/Limitation of Liability**. Landlord shall not be in default hereunder unless Landlord fails to perform any of its obligations hereunder within 30 days after written notice from Tenant specifying such failure (unless such performance will, due to the nature of the obligation, require a period of time in excess of 30 days, then after such period of time as is reasonably necessary). Upon any default by Landlord, Tenant shall give notice by registered or certified mail to any Holder of a Mortgage covering the Premises and to any landlord of any lease of property in or on which the Premises are located and Tenant shall offer such Holder and/or landlord a reasonable opportunity to cure the default, including time to obtain possession of the Project by power of sale or a judicial action if such should prove necessary to effect a cure; provided Landlord shall have furnished to Tenant in writing the names and addresses of all such persons who are to receive such notices. All obligations of Landlord hereunder shall be construed as covenants, not conditions; and, except as may be otherwise expressly provided in this Lease, Tenant may not terminate this Lease for breach of Landlord's obligations hereunder.

Notwithstanding the foregoing, if any claimed Landlord default hereunder will immediately, materially and adversely affect Tenant's ability to conduct its business in the Premises (a "**Material Landlord Default**"), Tenant shall, as soon as reasonably possible, but in any event within 5 business days of obtaining knowledge of such claimed Material Landlord Default, give Landlord written notice of such claim, which notice shall specifically state that a Material Landlord Default exists and telephonic notice to Tenant's principal contact with Landlord. Landlord shall then have 2 business days to commence cure of such claimed Material Landlord Default and shall diligently prosecute such cure to completion. If Landlord fails to commence cure of any claimed Material Landlord Default as provided above, Tenant may commence and prosecute such cure to completion provided that it does not impact or adversely affect any other tenants at the Project, the Building structure or Common Areas, and shall be entitled to recover the costs of such cure (but not any consequential or other damages) from Landlord by way of reimbursement from Landlord with no right to offset against Rent, to the extent of Landlord's obligation to cure such claimed Material Landlord Default hereunder, subject to the limitations set forth in the immediately following sentence of this paragraph and the other provisions of this Lease. If such claimed Material Landlord Default is not a default by Landlord hereunder, or if Tenant failed to give Landlord the notice required hereunder prior to commencing Tenant's cure of any alleged Material Landlord Default, Landlord shall be entitled to recover from Tenant, as Additional Rent, any costs incurred by Landlord in connection with such cure in excess of the costs, if any, that Landlord would otherwise have been liable to pay hereunder. All obligations of Landlord under this Lease will be binding upon Landlord only during the period of its ownership of the Premises and not thereafter, provided that any person or entity succeeding to the interest of Landlord assumes in writing all of the obligations of Landlord under this Lease arising during such person's or entity's period of ownership of the Premises. The term "**Landlord**" in this Lease shall mean only the owner for the time being of the Premises. Upon the transfer by such owner of its interest in the Premises, such owner shall thereupon be released and discharged from all obligations of Landlord thereafter accruing, but such obligations shall be binding during the Term upon each new owner for the duration of such owner's ownership.

32. **Inspection and Access**. Landlord and Landlord's representatives may enter the Premises during business hours on not less than 48 hours advance written notice (except in the case of emergencies in which case no such notice shall be required and such entry may be at any time) for the purpose of effecting any such repairs, inspecting the Premises, showing the Premises to prospective purchasers and, during the last 12 months of the Term, to prospective tenants or for any other business purpose. Landlord shall use reasonable efforts to minimize interference with Tenant's operations in the Premises in connection with Landlord's activities conducted pursuant to this paragraph. Landlord may erect a suitable sign on the Premises stating the Premises are available to let or that the Project is available for sale. Landlord may grant easements, make public dedications, designate Common Areas and create restrictions on or about the Premises, provided that no such easement, dedication, designation or restriction materially, adversely affects Tenant's use or occupancy of the Premises for the Permitted Use (including Tenant's access to and use of the parking spaces which Tenant is entitled to use pursuant to Section 10). At Landlord's written request, Tenant shall execute such instruments as may be reasonably necessary for such easements, dedications or restrictions, provided that such instruments do not materially increase Tenant's obligations or materially decrease Tenant's rights under this Lease. Tenant shall at all times, except in the case of emergencies, have the right to escort Landlord or its agents, representatives, contractors or guests while the same are in the Premises, provided such escort does not materially and adversely affect Landlord's access rights hereunder. Landlord shall comply with Tenant's reasonable security and safety requirements with respect to entering the Premises; provided, however, that Tenant has notified Landlord of such security and safety requirements simultaneously with or prior to Landlord's entry into the Premises.

Subject to the terms of this Section 32, Landlord may from time to time during the Term, during regular business hours and/or otherwise at times mutually acceptable to Landlord and Tenant, conduct third party tours of the Premises ("**Tours**"), which Tours may be held with not less than 1 business day's advance notice.

33. **Security**. Tenant acknowledges and agrees that security devices and services, if any, while intended to deter crime may not in given instances prevent theft or other criminal acts and that Landlord is not providing any security services with respect to the Premises. Tenant agrees that Landlord shall not be liable to Tenant for, and Tenant waives any claim against Landlord with respect to, any loss by theft or any other damage suffered or incurred by Tenant in connection with any unauthorized entry into the Premises or any other breach of security with respect to the Premises. Tenant shall be solely responsible for the personal safety of Tenant's officers, employees, agents, contractors, guests and invitees while any such person is in, on or about the Premises and/or the Project. Tenant shall at Tenant's cost obtain insurance coverage to the extent Tenant desires protection against such criminal acts.

34. **Force Majeure**. Except for the payment of Rent, neither Landlord nor Tenant shall be held responsible or liable for delays in the performance of its obligations hereunder when caused by, related to, or arising out of acts of God, sinkholes or subsidence, strikes, lockouts, or other labor disputes, embargoes, quarantines, weather, national, regional, or local disasters, calamities, or catastrophes, inability to obtain labor or materials (or reasonable substitutes therefor) at reasonable costs or failure of, or inability to obtain, utilities necessary for performance, governmental restrictions, orders, limitations, regulations, or controls, national emergencies, delay in issuance or revocation of permits, enemy or hostile governmental action, terrorism, insurrection, riots, civil disturbance or commotion, fire or other casualty, local, regional or national pandemic or epidemic, and other causes or events beyond their reasonable control ("**Force Majeure**").

35. **Brokers**. Landlord and Tenant each represents and warrants that it has not dealt with any broker, agent or other person (collectively, "**Broker**") in connection with this transaction and that no Broker brought about this transaction, other than Hughes Marino, Inc., Cushman & Wakefield of San Diego, Inc. and CBRE, Inc. Landlord and Tenant each hereby agree to indemnify and hold the other harmless from and against any claims by any Broker, other than the broker, if any named in this Section 35, claiming a commission or other form of compensation by virtue of having dealt with Tenant or Landlord, as applicable, with regard to this leasing transaction.

36. **Limitation on Landlord's Liability**. NOTWITHSTANDING ANYTHING SET FORTH HEREIN OR IN ANY OTHER AGREEMENT BETWEEN LANDLORD AND TENANT TO THE CONTRARY: (A) LANDLORD SHALL NOT BE LIABLE TO TENANT OR ANY OTHER PERSON FOR (AND TENANT AND EACH SUCH OTHER PERSON ASSUME ALL RISK OF) LOSS, DAMAGE OR INJURY, WHETHER ACTUAL OR CONSEQUENTIAL TO: TENANT'S PERSONAL PROPERTY OF EVERY KIND AND DESCRIPTION, INCLUDING, WITHOUT LIMITATION TRADE FIXTURES, EQUIPMENT, INVENTORY, SCIENTIFIC RESEARCH, SCIENTIFIC EXPERIMENTS, LABORATORY ANIMALS, PRODUCT, SPECIMENS, SAMPLES, AND/OR SCIENTIFIC, BUSINESS, ACCOUNTING AND OTHER RECORDS OF EVERY KIND AND DESCRIPTION KEPT AT THE PREMISES AND ANY AND ALL INCOME DERIVED OR DERIVABLE THEREFROM; (B) THERE SHALL BE NO PERSONAL RECOURSE TO LANDLORD FOR ANY ACT OR OCCURRENCE IN, ON OR ABOUT THE PREMISES OR ARISING IN ANY WAY UNDER THIS LEASE OR ANY OTHER AGREEMENT BETWEEN LANDLORD AND TENANT WITH RESPECT TO THE SUBJECT MATTER HEREOF AND ANY LIABILITY OF LANDLORD HEREUNDER SHALL BE STRICTLY LIMITED SOLELY TO LANDLORD'S INTEREST IN THE PROJECT OR ANY PROCEEDS FROM SALE OR CONDEMNATION THEREOF AND ANY INSURANCE PROCEEDS PAYABLE IN RESPECT OF LANDLORD'S INTEREST IN THE PROJECT OR IN CONNECTION WITH ANY SUCH LOSS; AND (C) IN NO EVENT SHALL ANY PERSONAL LIABILITY BE ASSERTED AGAINST LANDLORD IN CONNECTION WITH THIS LEASE NOR SHALL ANY RECOURSE BE HAD TO ANY OTHER PROPERTY OR ASSETS OF LANDLORD OR ANY OF LANDLORD'S OFFICERS, DIRECTORS, EMPLOYEES, AGENTS OR CONTRACTORS. UNDER NO CIRCUMSTANCES SHALL LANDLORD OR ANY OF LANDLORD'S OFFICERS, DIRECTORS, EMPLOYEES, AGENTS OR CONTRACTORS BE LIABLE FOR INJURY TO TENANT'S BUSINESS OR FOR ANY LOSS OF INCOME OR PROFIT THEREFROM.

Tenant acknowledges and agrees that measures and/or services implemented at the Project, if any, intended to encourage social distancing, promote and protect health and physical well-being and/or intended to limit the spread of Infectious Conditions, may not prevent the spread of such Infectious Conditions. Neither Landlord nor any Landlord Indemnified Parties shall have any liability and Tenant waives any claims against Landlord and the Landlord Indemnified Parties with respect to any loss, damage or injury in connection with (x) the implementation, or failure of Landlord or any Landlord Indemnified Parties to implement, any measures and/or services at the Project intended to encourage social distancing, promote and protect health and physical well-being and/or intended to limit the spread of Infectious Conditions, or (y) the failure of any measures and/or services implemented at the Project, if any, to limit the spread of any Infections Conditions

37. **Severability**. If any clause or provision of this Lease is illegal, invalid or unenforceable under present or future laws, then and in that event, it is the intention of the parties hereto that the remainder of this Lease shall not be affected thereby. It is also the intention of the parties to this Lease that in lieu of each clause or provision of this Lease that is illegal, invalid or unenforceable, there be added, as a part of this Lease, a clause or provision as similar in effect to such illegal, invalid or unenforceable clause or provision as shall be legal, valid and enforceable.

38. **Signs; Exterior Appearance**. Tenant shall not, without the prior written consent of Landlord, which may be granted or withheld in Landlord's reasonable discretion: (i) attach any awnings, exterior lights, decorations, balloons, flags, pennants, banners, painting or other projection to any outside wall of the Project, (ii) use any curtains, blinds, shades or screens other than Landlord's standard window coverings, (iii) coat or otherwise sunscreen the interior or exterior of any windows, (iv) place any bottles, parcels, or other articles on the window sills, (v) place any equipment, furniture or other items of personal property on any exterior balcony, or (vi) paint, affix or exhibit on any part of the Premises or the Project any signs, notices, window or door lettering, placards, decorations, or advertising media of any type which can be viewed from the exterior of the Premises. Interior signs on doors and the directory tablet shall be inscribed, painted or affixed for Tenant by Landlord at the sole cost and expense of Tenant, and shall be of a size, color and type acceptable to Landlord. Nothing may be placed on the exterior of corridor walls or corridor doors other than Landlord's standard lettering.

Notwithstanding anything to the contrary contained herein, Tenant shall have exclusive right, at Tenant's sole cost and expense, to display signage bearing Tenant's name and/or logo on the façade of the Building in the location and pursuant to the specifications designated on **Exhibit H** (the "**Building Sign**"). Notwithstanding the foregoing, Tenant acknowledges and agrees that the Building Sign including, without limitation, the size, color and type, shall be subject to Landlord's prior written approval, which shall not be unreasonably withheld and shall be consistent with the designs reflected on **Exhibit H**, Landlord's signage program at the Project and applicable Legal Requirements. Tenant shall be responsible, at Tenant's sole cost and expense, for the maintenance of the Building Sign, for the removal of the Building Sign at the expiration or earlier termination of this Lease and for the repair of all damage resulting from such removal.

Tenant shall also have the exclusive right to display, at Tenant's sole and cost and expense, Tenant's name and/or logo on the monument sign serving the Building in the location and pursuant to the specifications designated on **Exhibit H** ("**Monument Sign**"). Tenant acknowledges and agrees that the Tenant's Monument Sign, including, without limitation, the location, size, color and type, shall be subject to Landlord's prior written approval, which shall not be unreasonably withheld, and shall be subject to and in compliance with applicable Legal Requirements and Landlord's Project standards. The design, fabrication and installation of the Tenant's Monument Sign shall be paid for by Landlord. Tenant shall be responsible, at Tenant's sole cost and expense, for the maintenance of Tenant's Monument Sign, the removal of the Tenant's Monument Sign at the expiration or earlier termination of the Term and for the repair of all damage resulting from such removal.

39. **Right to Extend Term**. Tenant shall have the right to extend the Term of the Lease upon the following terms and conditions:

(a) **Extension Rights**. Tenant shall have 1 right (the "**Extension Right**") to extend the term of this Lease for 10 years (the "**Extension Term**") on the same terms and conditions as this Lease (other than with respect to Base Rent and the Work Letter) by giving Landlord written notice (the "**Exercise Notice**") of its election to exercise the Extension Right at least 12 months prior to the expiration of the Base Term of the Lease.

Upon the commencement of the Extension Term, Base Rent shall be payable at the Market Rate (as defined below). Base Rent shall thereafter be adjusted on each annual anniversary of the commencement of such Extension Term by a percentage as determined by Landlord and agreed to by Tenant at the time the Market Rate is determined. As used herein, "**Market Rate**" shall mean at Landlord's option either (i) the rate for comparable space that Landlord and affiliates of Landlord have accepted at the project commonly known as "ARE Sunrise" or other projects in the Torrey Pines submarket in comparable laboratory/office buildings during the 18 month period prior to Tenant's exercise of its Extension Right from non-equity (i.e., not being offered equity in the buildings) and nonaffiliated tenants of similar financial strength or (ii) the rate that comparable landlords of comparable buildings have accepted in current transactions from non-equity (i.e., not being offered equity in the buildings) and nonaffiliated tenants of similar financial strength for space of comparable size and quality (including all leasehold improvements, Alterations and other improvements) and floor height in comparable in laboratory/office buildings in the Torrey Pines submarket (including those owned by Landlord or affiliates of Landlord) for a comparable term, with the determination of the Market Rate to take into account all relevant factors, including tenant inducements, views, available amenities (including, without limitation, the Project Amenities and the Amenities (as defined in Section 40), age of the Building, age of mechanical systems serving the Premises, parking costs, leasing commissions, allowances or concessions, if any.

If, on or before the date which is 240 days prior to the expiration of the Base Term of this Lease, Tenant has not agreed with Landlord's determination of the Market Rate and the rent escalations during the Extension Term after negotiating in good faith, Tenant shall be deemed to have elected arbitration as described in Section 39(b). Tenant acknowledges and agrees that, if Tenant has elected to exercise the Extension Right by delivering notice to Landlord as required in this Section 39(a), Tenant shall have no right thereafter to rescind or elect not to extend the term of this Lease for the Extension Term.

(b) **Arbitration**.

(i) Within 10 days of Tenant's notice to Landlord of its election (or deemed election) to arbitrate Market Rate and escalations, each party shall deliver to the other a proposal containing the Market Rate and escalations that the submitting party believes to be correct ("**Extension Proposal**"). If either party fails to timely submit an Extension Proposal, the other party's submitted proposal shall determine the Base Rent and escalations for the Extension Term. If both parties submit Extension Proposals, then Landlord and Tenant shall meet within 7 days after delivery of the last Extension Proposal and make a good faith attempt to mutually appoint a single Arbitrator (and defined below) to determine the Market Rate and escalations. If Landlord and Tenant are unable to agree upon a single Arbitrator, then each shall, by written notice delivered to the other within 10 days after the meeting, select an Arbitrator. If either party fails to timely give notice of its selection for an Arbitrator, the other party's submitted proposal shall determine the Base Rent for the Extension Term. The 2 Arbitrators so appointed shall, within 5 business days after their appointment, appoint a third Arbitrator. If the 2 Arbitrators so selected cannot agree on the selection of the third Arbitrator within the time above specified, then either party, on behalf of both parties, may request such appointment of such third Arbitrator by application to any state court of general jurisdiction in the jurisdiction in which the Premises are located, upon 10 days prior written notice to the other party of such intent.

(ii) The decision of the Arbitrator(s) shall be made within 30 days after the appointment of a single Arbitrator or the third Arbitrator, as applicable. The decision of the single Arbitrator shall be final and binding upon the parties. The average of the two closest Arbitrators in a three Arbitrator panel shall be final and binding upon the parties. Each party shall pay the fees and expenses of the Arbitrator appointed by or on behalf of such party and the fees and expenses of the third Arbitrator shall be borne equally by both parties. If the Market Rate and escalations are not determined by the first day of the Extension Term, then Tenant shall pay Landlord Base Rent in an amount equal to the Base Rent in effect immediately prior to the Extension Term and increased by the Rent Adjustment Percentage until such determination is made. After the determination of the Market Rate and escalations, the parties shall make any necessary adjustments to such payments made by Tenant. Landlord and Tenant shall then execute an amendment recognizing the Market Rate and escalations for the Extension Term.

(iii) An "**Arbitrator**" shall be any person appointed by or on behalf of either party or appointed pursuant to the provisions hereof and: (i) shall be (A) a member of the American Institute of Real Estate Appraisers with not less than 10 years of experience in the appraisal of improved office and high tech industrial real estate in the greater San Diego metropolitan area, or (B) a licensed commercial real estate broker with not less than 15 years' experience representing landlords and/or tenants in the leasing of high tech or life sciences space in the greater San Diego metropolitan area, (ii) devoting substantially all of their time to professional appraisal or brokerage work, as applicable, at the time of appointment and (iii) be in all respects impartial and disinterested.

(c) **Rights Personal**. Extension Right is personal to Tenant and is not assignable without Landlord's consent, which may be granted or withheld in Landlord's sole discretion separate and apart from any consent by Landlord to an assignment of Tenant's interest in the Lease, except that it may be assigned in connection with any Permitted Assignment of this Lease.

(d) **Exceptions**. Notwithstanding anything set forth above to the contrary, the Extension Right shall, at Landlord's option, not be in effect and Tenant may not exercise the Extension Right:

(i) during any period of time that Tenant is in Default under any provision of this Lease; or if Tenant has been in Default under any provision of this Lease 3 or more times, whether or not the Defaults are cured, during the 12 month period immediately prior to the date that Tenant intends to exercise the Extension Right, whether or not the Defaults are cured.

(e) **No Extensions**. The period of time within which the Extension Right may be exercised shall not be extended or enlarged by reason of Tenant's inability to exercise the Extension Right.

(f) **Termination**. The Extension Right shall, at Landlord's option, terminate and be of no further force or effect even after Tenant's due and timely exercise of the Extension Right, if, after such exercise, but prior to the commencement date of the Extension Term, (i) Tenant fails to timely cure any default by Tenant under this Lease; or (ii) Tenant has Defaulted 3 or more times during the period from the date of the exercise of the Extension Right to the date of the commencement of the Extension Term, whether or not such Defaults are cured.

40. **The Alexandria Amenities**.

(a) **Generally**. ARE-SD Region No. 17, LLC, a Delaware limited liability company ("**The Alexandria Landlord**") has constructed certain amenities at the property owned by The Alexandria Landlord located at 10996 Torreyana Road, San Diego, California ("**The Alexandria**"), which, as of the date of this Lease, include, without limitation, shared conference facilities ("**Shared Conference Facilities**"), a fitness center and restaurant (collectively, the "**Amenities**") for non-exclusive use by (a) Tenant, (b) other tenants of the Project, (c) Landlord, (d) the tenants of The Alexandria Landlord, (e) The Alexandria Landlord, (e) other affiliates of Landlord, The Alexandria Landlord and Alexandria Real Estate Equities, Inc. ("**ARE**"), (f) the tenants of such other affiliates of Landlord, The Alexandria Landlord and ARE, and (g) any other parties permitted by The Alexandria Landlord (collectively, "**Users**"). Landlord, The Alexandria Landlord, ARE, and all affiliates of Landlord, Alexandria Landlord and ARE may be referred to collectively herein as the "**ARE Parties**." Notwithstanding anything to the contrary contained herein, Tenant acknowledges and agrees that The Alexandria Landlord shall have the right, at the sole discretion of The Alexandria Landlord, to not make the Amenities available for use by some or all currently contemplated Users (including Tenant). The Alexandria Landlord shall have the sole right to determine all matters related to the Amenities including, without limitation, relating to the reconfiguration, relocation, modification or removal of any of the Amenities at The Alexandria and/or to revise, expand or discontinue any of the services (if any) provided in connection with the Amenities. Tenant acknowledges and agrees that Landlord has not made any representations or warranties regarding the availability of the Amenities and that Tenant is not entering into this Lease relying on the continued availability of the Amenities to Tenant.

(a) **License**. Commencing on the Commencement Date, and so long as The Alexandria and the Project continue to be owned by affiliates of ARE, Tenant shall have the non-exclusive right to the use of the available Amenities in common with other Users pursuant to the terms of this Section 40. Fitness center passes shall be issued to Tenant for all full time employees of Tenant employed at the Premises. If any employee of Tenant to whom a fitness center pass has been issued ceases to be an employee of Tenant at the Premises or any employee to whom an access card (which does not include a fitness center pass) has been issued ceases to be an employee of Tenant at the Premises, Tenant shall, promptly following such employee's change in status, collect such employee's pass or access card, as applicable, deliver it to Landlord and so notify Landlord of such employee's change in status. Commencing on the Commencement Date, Tenant shall commence paying Landlord a fixed fee during the Base Term equal to $2.16 per rentable square foot of the Premises per year ("**Amenities Fee**"), which Amenities Fee shall by payable on the first day of each month during the Term whether or not Tenant elects to use any or all of the Alexandria Regional Amenities. The Amenities Fee shall be increased annually on each anniversary of the Commencement Date by 3%, including during the Extension Term.

(b) **Shared Conference Facilities**. Use by Tenant of the Shared Conference Facilities and restaurant at The Alexandria shall be in common with other Users with scheduling procedures reasonably determined by The Alexandria Landlord or The Alexandria Landlord's then designated event operator ("**Event Operator**"). Tenant's use of the Shared Conference Facilities shall be subject to the payment by Tenant to The Alexandria Landlord of a fee equal to The Alexandria Landlord's quoted rates for the usage of the Shared Conference Facilities in effect at the time of Tenant's scheduling. Tenant's use of the conference rooms in the Shared Conference Area shall be subject to availability and The Alexandria Landlord (or, if applicable, Event Operator) reserves the right to exercise its reasonable discretion in the event of conflicting scheduling requests among Users. Tenant hereby acknowledges that (i) Biocom/San Diego, a California non-profit corporation ("**Biocom**") has the right to reserve the Shared Conference Facilities and any reservable dining area(s) included within the Amenities for up to 50% of the time that such Shared Conference Facilities and reservable dining area(s) are available for use by Users each calendar month, and (ii) Illumina, Inc., a Delaware corporation, has the exclusive use of the main conference room within the Shared Conference Facilities for up to 4 days per calendar month.

Tenant shall be required to use the food service operator designated by The Alexandria Landlord at The Alexandria (the "**Designated Food and Beverage Operator**") for any food and/or beverage service or catered events held by Tenant in the Shared Conference Facilities. As of the date of this Lease, the Designated Food and Beverage Operator is The Farmer and the Seahorse. The Alexandria Landlord has the right, in its sole and absolute discretion, to change the Designated Food and Beverage Operator at any time. Tenant may not use any vendors other than the Designated Food and Beverage Operator nor may Tenant supply its own food and/or beverages in connection with any food and/or beverage service or catered events held by Tenant in the Shared Conference Facilities.

Tenant shall, at Tenant's sole cost and expense, (i) be responsible for the set-up of the Shared Conference Facilities in connection with Tenant's use (including, without limitation ensuring that Tenant has a sufficient number of chairs and tables and the appropriate equipment), and (ii) surrender the Shared Conference Facilities after each time that Tenant uses the Shared Conference Facilities free of Tenant's personal property, in substantially the same set up and same condition as received, and free of any debris and trash. If Tenant fails to restore and surrender the Shared Conference Facilities as required by sub-section (ii) of the immediately preceding sentence, such failure shall constitute a "**Shared Facilities Default**." Each time that Landlord reasonably determines that Tenant has committed a Shared Facilities Default, Tenant shall be required to pay Landlord a penalty within 5 days after notice from Landlord of such Shared Facilities Default. The penalty payable by Tenant in connection with the first Shared Facilities Default shall be $200. The penalty payable shall increase by $50 for each subsequent Shared Facilities Default (for the avoidance of doubt, the penalty shall be $250 for the second Shared Facilities Default, shall be $300 for the third Shared Facilities Default, etc.). In addition to the foregoing, Tenant shall be responsible for reimbursing The Alexandria Landlord or Landlord, as applicable, for all reasonable out-of-pocket costs expended by The Alexandria Landlord or Landlord, as applicable, in repairing any damage to the Shared Conference Facilities, the Amenities, or The Alexandria caused by Tenant or any Tenant Party. The provisions of this Section 40(c) shall survive the expiration or earlier termination of this Lease.

(c) **Restaurant**. Tenant's employees that have been issued an access card to The Alexandria shall have the right, along with other Users, to access and use the restaurant located at The Alexandria.

(d) **Rules and Regulations**. Tenant shall be solely responsible for paying for any and all ancillary services (e.g., audio visual equipment) provided to Tenant, all food services operators and any other third party vendors providing services to Tenant at The Alexandria. Tenant shall use the Amenities (including, without limitation, the Shared Conference Facilities) in compliance with all applicable Legal Requirements and any rules and regulations imposed by The Alexandria Landlord or Landlord from time to time and in a manner that will not interfere with the rights of other Users, which rules and regulations shall be enforced in a non-discriminatory manner. The use of Amenities other than the Shared Conference Facilities by employees of Tenant shall be in accordance with the terms and conditions of the standard licenses, indemnification and waiver agreement required by The Alexandria Landlord or the operator of the Amenities to be executed by all persons wishing to use such Amenities. Neither The Alexandria Landlord nor Landlord (nor, if applicable, any other affiliate of Landlord) shall have any liability or obligation for the breach of any rules or regulations by other Users with respect to the Amenities. Tenant shall not make any alterations, additions, or improvements of any kind to the Shared Conference Facilities, the Amenities or The Alexandria.

Tenant acknowledges and agrees that The Alexandria Landlord shall have the right at any time and from time to time to reconfigure, relocate, modify or remove any of the Amenities at The Alexandria and/or to revise, expand or discontinue any of the services (if any) provided in connection with the Amenities.

(e) **Waiver of Liability and Indemnification**. Tenant warrants that it will use reasonable care to prevent damage to property and injury to persons while on The Alexandria. Tenant waives any claims it or any Tenant Parties may have against any ARE Parties relating to, arising out of or in connection with the Amenities and any entry by Tenant and/or any Tenant Parties onto The Alexandria, and Tenant releases and exculpates all ARE Parties from any liability relating to, arising out of or in connection with the Amenities and any entry by Tenant and/or any Tenant Parties onto The Alexandria. Tenant hereby agrees to indemnify, defend, and hold harmless the ARE Parties from any claim of damage to property or injury to person relating to, arising out of or in connection with (i) the use of the Amenities by Tenant or any Tenant Parties, and (ii) any entry by Tenant and/or any Tenant Parties onto The Alexandria, except to the extent caused by the negligence or willful misconduct of ARE Parties. The provisions of this Section 40(f) shall survive the expiration or earlier termination of this Lease.

(f) **Insurance**. As of the Commencement Date, Tenant shall cause The Alexandria Landlord to be named as an additional insured under the commercial general liability policy of insurance that Tenant is required to maintain pursuant to Section 17 of this Lease.

(g) **OAS Project Amenities**. Upon request from Landlord, Tenant execute an amendment to this Lease prepared by Landlord containing provisions comparable to the provisions set forth in this Section 40 with regards to the Project Amenities. For the avoidance of any doubt, such amendment shall not contain a separate Amenities Fee for use of the Project Amenities.

41. **Project Redevelopment**. Landlord, subject to the provisions of this Section 41, intends to redevelop a portion of the Project in accordance with the rendering attached hereto as **Exhibit I** (the "**Project Improvements**"). Notwithstanding anything to the contrary contained herein, Tenant acknowledges and agrees that (i) Landlord's obligation to construct the Project Improvements is subject to Landlord's ability to obtain, on terms and conditions acceptable to Landlord in its sole and absolute discretion, all of the governmental approvals to permit the design and construction of the Project Improvements, including, without limitation, lot line adjustments, (iii) Landlord shall have the sole right to determine all matters related to the Project Improvements including, without limitation, relating to the design and construction thereof, and (iv) Landlord's obligation to construct the Project Improvements is subject to the reasonable availability of materials and labor and all other conditions outside of Landlord's reasonable control. Landlord shall have no liability to Tenant for the failure of any of conditions set forth in this paragraph to be satisfied and/or Landlord's failure to construct any or all of the Project Improvements. In addition, the location of the parking areas and parking structure(s), buildings and amenities reflected on **Exhibit I** are conceptual and Landlord reserves the right, in its sole and absolute discretion, to modify the Project and the Project Improvements at any time(s) including, without limitation, Common Areas, the location of the parking areas and parking structure(s), buildings (including, without limitation, rentable square footage) and amenities. Notwithstanding anything to the contrary contained in this Section 41, Landlord may delegate any of its obligations with respect to the redevelopment of the Project to any affiliate of Landlord.

Notwithstanding anything to the contrary contained in this Lease, Tenant acknowledges and agrees to the following with respect to the Project Improvements: (i) Landlord may elect, during the Term and in Landlord's sole and absolute discretion, to relocate Tenant's central plant and related equipment to a campus wide (or portion thereof) central plant and Tenant shall thereafter be responsible for its pro rata share (as reasonably and equitably determined and substantiated by Landlord) of all of the Operating Expenses (and Taxes) incurred by Landlord with respect to such campus wide (or portion thereof) central plant.

Notwithstanding anything to the contrary contained herein, (i) Landlord may elect to complete the Project Improvements in phases and/or not at all and (ii) if the Project Improvements are undertaken in phases, Landlord shall notify Tenant at the time of the substantial completion of each such phase and the matters in this Lease that would otherwise be amended based on upon substantial completion of the Project Improvements may be amended by Landlord but on an equitable and ratable basis based on the phase completed (e.g., Rentable Area of Project and the Building's Share of Operating Expenses of Project shall be adjusted based on the rentable area of the square footage available for lease (other than space used for amenities at the Project) in the applicable phase).

42. **Miscellaneous**.

(a) **Notices**. All notices or other communications between the parties shall be in writing and shall be deemed duly given upon delivery or refusal to accept delivery by the addressee thereof if delivered in person, or upon actual receipt if delivered by reputable overnight guaranty courier, addressed and sent to the parties at their addresses set forth above. Landlord and Tenant may from time to time by written notice to the other designate another address for receipt of future notices.

(b) **Joint and Several Liability**. If and when included within the term "**Tenant**," as used in this instrument, there is more than one person or entity, each shall be jointly and severally liable for the obligations of Tenant.

(c) **Financial Information**. Tenant shall furnish Landlord with true and complete copies of (i) Tenant's most recent unaudited (or, to the extent available, audited) annual financial statements within 90 days of the end of each of Tenant's fiscal years during the Term, (ii) Tenant's most recent unaudited quarterly financial statements within 45 days of the end of each of Tenant's first three fiscal quarters of each of Tenant's fiscal years during the Term, (iii) at Landlord's request from time to time (but no more than once every two years), updated business plans, including cash flow projections and/or pro forma balance sheets and income statements, all of which shall be treated by Landlord as confidential information belonging to Tenant, (iv) corporate brochures and/or profiles prepared by Tenant for prospective investors, and (v) any other financial information or summaries that Tenant typically provides to its lenders or shareholders. So long as Tenant is a "public company" and its financial information is publicly available, then the foregoing requirements of this Section 42(c) shall not apply.

(d) **Recordation**. Neither this Lease nor a memorandum of lease shall be filed by or on behalf of Tenant in any public record. Landlord may prepare and file, at Landlord's sole cost and expense, and upon written request by Landlord Tenant will execute, a memorandum of lease. Nothing contained in this Lease is intended to prohibit Tenant from filing this Lease with the Securities and Exchange Commission ("**SEC**") to the extent that Tenant is required to do so pursuant to applicable SEC requirements. Prior to any such filing of this Lease, Tenant shall redact the Base Rent and other economic terms to the extent permitted by the applicable SEC regulators.

(e) **Interpretation**. The normal rule of construction to the effect that any ambiguities are to be resolved against the drafting party shall not be employed in the interpretation of this Lease or any exhibits or amendments hereto. Words of any gender used in this Lease shall be held and construed to include any other gender, and words in the singular number shall be held to include the plural, unless the context otherwise requires. The captions inserted in this Lease are for convenience only and in no way define, limit or otherwise describe the scope or intent of this Lease, or any provision hereof, or in any way affect the interpretation of this Lease.

(f) **Not Binding Until Executed**. The submission by Landlord to Tenant of this Lease shall have no binding force or effect, shall not constitute an option for the leasing of the Premises, nor confer any right or impose any obligations upon either party until execution of this Lease by both parties.

(g) **Limitations on Interest**. It is expressly the intent of Landlord and Tenant at all times to comply with applicable law governing the maximum rate or amount of any interest payable on or in connection with this Lease. If applicable law is ever judicially interpreted so as to render usurious any interest called for under this Lease, or contracted for, charged, taken, reserved, or received with respect to this Lease, then it is Landlord's and Tenant's express intent that all excess amounts theretofore collected by Landlord be credited on the applicable obligation (or, if the obligation has been or would thereby be paid in full, refunded to Tenant), and the provisions of this Lease immediately shall be deemed reformed and the amounts thereafter collectible hereunder reduced, without the necessity of the execution of any new document, so as to comply with the applicable law, but so as to permit the recovery of the fullest amount otherwise called for hereunder.

(h) **Choice of Law**. Construction and interpretation of this Lease shall be governed by the internal laws of the state in which the Premises are located, excluding any principles of conflicts of laws.

(i) **Time**. Time is of the essence as to the performance of Tenant's obligations under this Lease.

(j) **OFAC**. Tenant and Landlord are currently (a) in compliance with and shall at all times during the Term of this Lease remain in compliance with the regulations of the Office of Foreign Assets Control ("**OFAC**") of the U.S. Department of Treasury and any statute, executive order, or regulation relating thereto (collectively, the "**OFAC Rules**"), (b) not listed on, and shall not during the term of this Lease be listed on, the Specially Designated Nationals and Blocked Persons List, Foreign Sanctions Evaders List, or the Sectoral Sanctions Identification List, which are all maintained by OFAC and/or on any other similar list maintained by OFAC or other governmental authority pursuant to any authorizing statute, executive order, or regulation, and (c) not a person or entity with whom a U.S. person is prohibited from conducting business under the OFAC Rules.

(k) **Incorporation by Reference**. All exhibits and addenda attached hereto are hereby incorporated into this Lease and made a part hereof. If there is any conflict between such exhibits or addenda and the terms of this Lease, such exhibits or addenda shall control.

(l) **Entire Agreement**. This Lease, including the exhibits attached hereto, constitutes the entire agreement between Landlord and Tenant pertaining to the subject matter hereof and supersedes all prior and contemporaneous agreements, understandings, letters of intent, negotiations and discussions, whether oral or written, of the parties, and there are no warranties, representations or other agreements, express or implied, made to either party by the other party in connection with the subject matter hereof except as specifically set forth herein.

(m) **No Accord and Satisfaction**. No payment by Tenant or receipt by Landlord of a lesser amount than the monthly installment of Base Rent or any Additional Rent will be other than on account of the earliest stipulated Base Rent and Additional Rent, nor will any endorsement or statement on any check or letter accompanying a check for payment of any Base Rent or Additional Rent be an accord and satisfaction. Landlord may accept such check or payment without prejudice to Landlord's right to recover the balance of such Rent or to pursue any other remedy provided in this Lease.

(n) **Hazardous Activities**. Notwithstanding any other provision of this Lease, Landlord, for itself and its employees, agents and contractors, reserves the right to refuse to perform any repairs or services in any portion of the Premises which, pursuant to Tenant's routine safety guidelines, practices or custom or prudent industry practices, require any form of protective clothing or equipment other than safety glasses. In any such case, Tenant shall contract with parties who are acceptable to Landlord, in Landlord's reasonable discretion, for all such repairs and services, and Landlord shall, to the extent required, equitably adjust Tenant's Share of Operating Expenses in respect of such repairs or services to reflect that Landlord is not providing such repairs or services to Tenant.

(o) **Discontinued Use**. If, at any time following the Commencement Date, Tenant does not continuously operate its business in the Premises for a period of 90 consecutive days, Landlord may, but is not obligated to, elect to terminate this Lease upon 30 days' written notice to Tenant, whereupon this Lease shall terminate 30 days' after Landlord's delivery of such written notice ("**Termination Date**"), and Tenant shall vacate the Premises and deliver possession thereof to Landlord in the condition required by the terms of this Lease on or before the Termination Date and Tenant shall have no further obligations under this Lease except for those accruing prior to the Termination Date and those which, pursuant to the terms of the Lease, survive the expiration or early termination of the Lease.

(p) **EV Charging Stations**. Landlord shall not unreasonably withhold its consent to Tenant's written request to install 1 or more electric vehicle car charging stations ("**EV Stations**") in the parking area serving the Project; provided, however, that Tenant complies with all reasonable requirements, standards, rules and regulations which may be imposed by Landlord, at the time Landlord's consent is granted, in connection with Tenant's installation, maintenance, repair and operation of such EV Stations, which may include, without limitation, the charge to Tenant of a reasonable monthly rental amount for the parking spaces used by Tenant for such EV Stations, Landlord's designation of the location of Tenant's EV Stations, and Tenant's payment of all costs whether incurred by Landlord or Tenant in connection with the installation, maintenance, repair and operation of each Tenant's EV Station(s). Nothing contained in this paragraph is intended to increase the number of parking spaces which Tenant is otherwise entitled to use at the Project under Section 10 of this Lease nor impose any additional obligations on Landlord with respect to Tenant's parking rights at the Project.

(q) **California Accessibility Disclosure**. For purposes of Section 1938(a) of the California Civil Code, Landlord hereby discloses to Tenant, and Tenant hereby acknowledges, that the Project has not undergone inspection by a Certified Access Specialist (CASp). In addition, the following notice is hereby provided pursuant to Section 1938(e) of the California Civil Code: "A Certified Access Specialist (CASp) can inspect the subject premises and determine whether the subject premises comply with all of the applicable construction-related accessibility standards under state law. Although state law does not require a CASp inspection of the subject premises, the commercial property owner or lessor may not prohibit the lessee or tenant from obtaining a CASp inspection of the subject premises for the occupancy or potential occupancy of the lessee or tenant, if requested by the lessee or tenant. The parties shall mutually agree on the arrangements for the time and manner of the CASp inspection, the payment of the fee for the CASp inspection, and the cost of making any repairs necessary to correct violations of construction-related accessibility standards within the premises." In furtherance of and in connection with such notice: (i) Tenant, having read such notice and understanding Tenant's right to request and obtain a CASp inspection, hereby elects not to obtain such CASp inspection and forever waives its rights to obtain a CASp inspection with respect to the Premises, Building and/or Project to the extent permitted by Legal Requirements; and (ii) if the waiver set forth in clause (i) hereinabove is not enforceable pursuant to Legal Requirements, then Landlord and Tenant hereby agree as follows (which constitutes the mutual agreement of the parties as to the matters described in the last sentence of the foregoing notice): (A) Tenant shall have the one-time right to request for and obtain a CASp inspection, which request must be made, if at all, in a written notice delivered by Tenant to Landlord; (B) any CASp inspection timely requested by Tenant shall be conducted (1) at a time mutually agreed to by Landlord and Tenant, (2) in a professional manner by a CASp designated by Landlord and without any testing that would damage the Premises, Building or Project in any way, and (3) at Tenant's sole cost and expense, including, without limitation, Tenant's payment of the fee for such CASp inspection, the fee for any reports prepared by the CASp in connection with such CASp inspection (collectively, the "**CASp Reports**") and all other costs and expenses in connection therewith; (C) the CASp Reports shall be delivered by the CASp simultaneously to Landlord and Tenant; (D) Tenant, at its sole cost and expense, shall be responsible for making any improvements, alterations, modifications and/or repairs to or within the Premises to correct violations of construction-related accessibility standards including, without limitation, any violations disclosed by such CASp inspection; and (E) if such CASp inspection identifies any improvements, alterations, modifications and/or repairs necessary to correct violations of construction-related accessibility standards relating to those items of the Building and Project located outside the Premises that are Landlord's obligation to repair as set forth in this Lease, then Landlord shall perform such improvements, alterations, modifications and/or repairs as and to the extent required by Legal Requirements to correct such violations, and Tenant shall reimburse Landlord for the cost of such improvements, alterations, modifications and/or repairs within 10 business days after Tenant's receipt of an invoice therefor from Landlord.

(r) **Counterparts**. This Lease may be executed in 2 or more counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument. Counterparts may be delivered via facsimile, electronic mail (including pdf or any electronic signature process complying with the U.S. federal ESIGN Act of 2000) or other transmission method and any counterpart so delivered shall be deemed to have been duly and validly delivered and be valid and effective for all purposes. Electronic signatures shall be deemed original signatures for purposes of this Lease and all matters related thereto, with such electronic signatures having the same legal effect as original signatures.

(s) **Attorneys' Fees**. If a dispute of any type arises, or an action is filed under this Lease based in contract, tort or equity, or this Lease gives rise to any other legal proceeding between any of the parties hereto, the prevailing party shall be entitled to recover from the losing party reasonable attorneys' fees, costs and expenses, including, but not limited to, expert witness fees, accounting and engineering fees, and any other professional fees incurred in connection with the prosecution or defense of such action, whether the action is prosecuted to a final judgment. For purposes of this Lease, the terms "attorneys' fees," "costs" and "expenses" shall also include the fees and expenses incurred by counsel to the parties hereto for photocopies, duplications, deliveries, postage, telephone and facsimile communications, transcripts of proceedings relating to the action, and all fees billed for law clerks, paralegals, librarians, secretaries and others not admitted to the bar but performing services under the supervision of an attorney. The terms "attorneys' fees," "costs" and "expenses" shall also include, without limitation, fees and costs incurred in the following proceedings: (i) mediations; (ii) arbitrations; (iii) bankruptcy proceedings; (iv) appeals; (v) post-judgment motions and collection actions; and (vi) garnishment, levy and debtor examinations. The prevailing party shall also be entitled to reasonable attorneys' fees and costs after any dismissal of an action.

[Signatures are on the next page.]

IN WITNESS WHEREOF, Landlord and Tenant have executed this Lease as of the day and year first above written.

TENANT:

SINGULAR GENOMICS SYSTEMS, INC.,
a Delaware corporation

By: /s/ Andrew Spaventa
Its: Chief Executive Officer

[X] I hereby certify that the signature, name, and title above are my signature, name and title

LANDLORD:

ARE-SD REGION NO. 27, LLC,
a Delaware limited liability company

By: ALEXANDRIA REAL ESTATE EQUITIES, L.P.,
a Delaware limited partnership, managing member

By: ARE-QRS Corp., a Maryland corporation general partner

By: /s/ Gary Dean
Its: Senior Vice President –
Real Estate Legal Affairs

[X] I hereby certify that the signature, name, and title above are my signature, name and title

EXHIBIT A TO LEASE

DESCRIPTION OF PREMISES

[Omitted]

EXHIBIT B-1 TO LEASE

LEGAL DESCRIPTION OF PROJECT

[Omitted]

EXHIBIT B-2 TO LEASE

DESCRIPTION OF PROJECT

[Omitted.]

EXHIBIT C TO LEASE

WORK LETTER

THIS WORK LETTER dated June 26, 2020 (this "**Work Letter**") is made and entered into by and between **ARE-SD REGION NO. 27, LLC**, a Delaware limited liability company ("**Landlord**"), and **SINGULAR GENOMICS, INC.**, a Delaware corporation ("**Tenant**"), and is attached to and made a part of the Lease Agreement dated June 26, 2020 (the "**Lease**"), by and between Landlord and Tenant. Any initially capitalized terms used but not defined herein shall have the meanings given them in the Lease.

1. **General Requirements**.

(a) **Tenant's Authorized Representative**. Tenant designates Nik Bandak (Hughes Marino) and Keith Bullion (Singular Genomics) (either such individual acting alone, "**Tenant's Representative**") as the only persons authorized to act for Tenant pursuant to this Work Letter. Landlord shall not be obligated to respond to or act upon any request, approval, inquiry or other communication ("**Communication**") from or on behalf of Tenant in connection with this Work Letter unless such Communication is in writing from Tenant's Representative. Tenant may change either Tenant's Representative at any time upon not less than 5 business days advance written notice to Landlord. Neither Tenant nor Tenant's Representative shall be authorized to direct Landlord's contractors in the performance of Landlord's Work (as hereinafter defined).

(b) **Landlord's Authorized Representative**. Landlord designates Christopher Clement and Anna Bryan (either such individual acting alone, "**Landlord's Representative**") as the only persons authorized to act for Landlord pursuant to this Work Letter. Tenant shall not be obligated to respond to or act upon any request, approval, inquiry or other Communication from or on behalf of Landlord in connection with this Work Letter unless such Communication is in writing from Landlord's Representative. Landlord may change either Landlord's Representative at any time upon not less than 5 business days advance written notice to Tenant. Landlord's Representative shall be the sole persons authorized to direct Landlord's contractors in the performance of Landlord's Work.

(c) **Architects, Consultants and Contractors**. Landlord and Tenant hereby acknowledge and agree that: (i) DPR shall be the general contractor for the Tenant Improvements, (ii) DGA shall be the architect (the "**TI Architect**") for the Tenant Improvements, and (iii) any major subcontractors for the Tenant Improvements shall be selected by Landlord, subject to Tenant's approval, which approval shall not be unreasonably withheld, conditioned or delayed.

(d) **Budget and Schedule**. Attached hereto as **Schedule 5** is Landlord's budget for the Tenant Improvements and attached hereto as **Schedule 4** is Landlord's current schedule for the construction of Landlord's Work. Landlord's budget of $264 per rentable square foot of the Premises for the cost of the Tenant Improvements is being provided solely for informational purposes. For the avoidance of any doubt, if the cost of the Tenant Improvements as reflect on the Space Plans attached hereto as **Schedule 1** (excluding any Excess TI Costs) exceeds $264 per rentable square foot of the Premises, Landlord shall be responsible for the costs thereof. Notwithstanding anything to the contrary contained herein, in no event shall (i) Tenant be permitted to value engineer any portion of the Tenant Improvements or Landlord's budget, (ii) if the cost of the Tenant Improvements (excluding items which are defined as being included as part of Excess TI Costs ((as defined in Section 5(d) below)) is less than $264 per rentable square foot of the Premises, the savings be shared with Tenant and/or contributed towards any other costs which Tenant is responsible for under this Work Letter or the Lease (and all such savings shall belong to Landlord) and (iii) Landlord be required to pay for any Excess TI Costs other to the extent that Tenant elects to use the Tenant Improvement Allowance provided for in Section 5(c) below.

2. **Tenant Improvements**.

(a) **Tenant Improvements Defined**. As used herein, "**Tenant Improvements**" shall mean all improvements to the Premises of a fixed and permanent nature as shown on the TI Construction Drawings, as defined in Section 2(c) below. Other than Landlord's Work (as defined in Section 3(a)) below, Landlord shall not have any obligation whatsoever with respect to the finishing of the Premises for Tenant's use and occupancy.

(b) **Tenant's Space Plans**. The plan prepared by the TI Architect attached hereto as **Schedule 1** (the "**Space Plans**") and the tenant improvement specifications for the Tenant Improvements attached hereto as **Schedule 2** (the "**TI Specifications**") have been approved by both Landlord and Tenant. Landlord and Tenant further acknowledge and agree that any changes to the Space Plans or the TI Specifications constitute a Change Request the cost of which changes shall be paid for by Tenant. Tenant shall be solely responsible for all costs incurred by Landlord to alter the Building as a result of Tenant's requested changes.

Tenant acknowledges that the Tenant Improvements reflected on the Space Plans attached hereto as **Schedule 1** are intended to be high quality, generic and reusable by future tenants of the Premises. Tenant shall be permitted to make changes to the Tenant Improvements by submitting Change Request(s) as provided for in this Work Letter. However, if Landlord reasonably determines that Tenant's Change(s) result in significant modifications ("**Significant Changes**") to the Space Plans attached hereto as **Schedule 1**, Landlord shall have the right, as a condition to approving such Change(s) and in addition to requiring Tenant to pay for such Change(s) as Excess TI Costs, to require Tenant to increase the amount of the Letter of Credit by the amount which the general contractor for the Tenant Improvements estimates, in good faith using similar market comparables, would be required at the expiration of the Term of the Lease to construct Tenant Improvements in the Premises shown on the Space Plans attached hereto as **Schedule 1** in place of the Tenant Improvements that are being constructed as a result of such Significant Changes (collectively, the "**Restoration Work**"). Tenant shall be required, at Tenant's sole cost and expense prior to the expiration or earlier termination of the Term, to complete the Restoration Work as an Alteration pursuant to Section 12 of the Lease, so the affected portions of the Premises contain the Tenant Improvements that they would have contained pursuant to the Space Plans attached hereto as **Schedule 1** but for the Significant Changes, and Tenant shall be required to obtain a certificate of occupancy with respect to such Restoration Work

(c) **Working Drawings**. Landlord shall cause the TI Architect to prepare and deliver to Tenant for review and comment construction plans, specifications and drawings for the Tenant Improvements ("**TI Construction Drawings**"), which TI Construction Drawings shall be prepared substantially in accordance with the Space Plans and the TI Specifications. Tenant shall be solely responsible for ensuring that the TI Construction Drawings reflect Tenant's requirements for the Tenant Improvements. Tenant shall deliver its written comments on the TI Construction Drawings to Landlord not later than 10 business days after Tenant's receipt of the same; provided, however, that Tenant may not disapprove any matter that is consistent with the Space Plans and TI Specifications without submitting a Change Request. Landlord and the TI Architect shall consider all such comments in good faith and shall, within 10 business days after receipt, notify Tenant how Landlord proposes to respond to such comments, but Tenant's review rights pursuant to the foregoing sentence shall not delay the design or construction schedule for the Tenant Improvements. Any disputes in connection with such comments shall be resolved in accordance with Section 2(d) hereof. Provided that the design reflected in the TI Construction Drawings is consistent with the Space Plans and TI Specifications, Tenant shall approve the TI Construction Drawings submitted by Landlord, unless Tenant submits a Change Request. Once approved by Tenant, subject to the provisions of Section 4 below, Landlord shall not materially modify the TI Construction Drawings except as may be reasonably required in connection with the issuance of the TI Permit (as defined in Section 3(b) below), which material modification shall be subject to the reasonable review and approval of Tenant.

(d) **Approval and Completion**. It is hereby acknowledged by Landlord and Tenant that the TI Construction Drawings must be completed and approved not later November 23, 2020 in order for the Tenant Improvements to be Substantially Complete by the Target Commencement Date (as defined in the Lease). Upon any dispute regarding the design of the Tenant Improvements, which is not settled within 10 business days after notice of such dispute is delivered by one party to the other, Tenant may make the final decision regarding the design of the Tenant Improvements, provided (i) Tenant acts reasonably and such final decision is either consistent with or a compromise between Landlord's and Tenant's positions with respect to such dispute, (ii) that all costs and expenses resulting from any such decision by Tenant shall be payable out of the TI Fund (as defined in Section 5(d) below), and (iii) Tenant's decision will not affect the base Building, structural components of the Building or any Building Systems (in which case Landlord shall make the final decision). Any changes to the TI Construction Drawings following Landlord's and Tenant's approval of same requested by Tenant shall be processed as provided in Section 4 hereof.

(e) **Meetings**. The parties will hold regular project meetings (each, a "**Project Meeting**") to review the status of the design and construction of Landlord's Work attended (as appropriate given the time and subject of the particular Project Meeting) by Landlord, Tenant, the TI Architect and the general contractor, and other appropriate members of the design and construction team. If there are Excess TI Costs, then, on or before the last Friday of each month, Landlord agrees to review draw requests solely for Excess TI Costs as part of the Project Meeting on a monthly basis for the duration of Landlord's Work. At the conclusion of each Project Meeting, assignments, responsibilities, actions and other items addressed at such meeting shall be reviewed by the attendees to confirm agreement and acceptance.

3. **Performance of Landlord's Work**.

(a) **Definition of Landlord's Work**. As used herein, "**Landlord's Work**" shall mean (i) the work of constructing the Tenant Improvements, and (ii) the work of constructing the items identified on **Schedule 3** as "**Provided by Landlord at Landlord Cost**". The design construction schedule is set forth on **Schedule 4**.

The reference in the Responsibility Matrix attached hereto as **Schedule 3** to (x) "Provided by Landlord at Landlord Cost" refers to work that will be paid for by Landlord, (y) "Provided by Tenant at Tenant's Cost or Excess TI Allowance" refers to work that will be paid for by Tenant, and (z) "Provided by Landlord as part of Tenant Improvements" refers to work that will be paid for by Landlord.

Tenant shall be solely responsible for ensuring that the design and specifications for Landlord's Work are consistent with Tenant's requirements. Landlord shall be responsible for obtaining all permits, approvals and entitlements necessary for Landlord's Work, but shall have no obligation to, and shall not, secure any permits, approvals or entitlements related to Tenant's specific use of the Premises or Tenant's business operations therein. This includes securing county approval of San Diego Regional Hazardous Material Questionnaire which Tenant shall be required to obtain.

(b) **Commencement and Permitting**. Landlord shall commence construction of the Tenant Improvements upon obtaining a building permit (the "**TI Permit**") authorizing the construction of the Tenant Improvements consistent with the TI Construction Drawings approved by Tenant. The cost of obtaining the TI Permit shall be payable by Landlord. Tenant shall cooperate with Landlord in obtaining the TI Permit. If any Governmental Authority having jurisdiction over the construction of Landlord's Work or any portion thereof shall impose terms or conditions upon the construction thereof that: (i) are inconsistent with Landlord's obligations hereunder, (ii) increase the cost of constructing Landlord's Work, or (iii) will materially delay the construction of Landlord's Work, Landlord and Tenant shall reasonably and in good faith seek means by which to mitigate or eliminate any such adverse terms and conditions.

(c) **Completion of the Tenant Improvements**. Landlord shall substantially complete or cause to be substantially completed Tenant Improvements in a good and workmanlike manner, in accordance with the TI Permit subject, in each case, to Minor Variations and normal "punch list" items of a non-material nature that do not interfere with the use of the Premises ("**Substantial Completion**" or "**Substantially Complete**"). Upon Substantial Completion of the Tenant Improvements, Landlord shall require the TI Architect and the general contractor to execute and deliver, for the benefit of Tenant and Landlord, a Certificate of Substantial Completion in the form of the American Institute of Architects ("**AIA**") document G704. For purposes of this Work Letter, "**Minor Variations**" shall mean any modifications reasonably required: (i) to comply with all applicable Legal Requirements and/or to obtain or to comply with any required permit (including the TI Permit); (ii) to comply with any request by Tenant for modifications to the Tenant Improvements; (iii) to comport with good design, engineering, and construction practices that are not material; or (iv) to make reasonable adjustments for field deviations or conditions encountered during the construction of the Tenant Improvements.

(d) **Selection of Materials**. Where more than one type of material or structure is indicated on the TI Construction Drawings approved by Landlord and Tenant, unless selected by Tenant, the option will be selected by Landlord's, in Landlord's reasonable discretion. As to all building materials and equipment that Landlord is obligated to supply under this Work Letter, Landlord shall select the manufacturer thereof, in its sole and absolute discretion.

(e) **Delivery of the Premises**. When the Tenant Improvements are Substantially Complete, subject to the remaining terms and provisions of this Section 3(e), Tenant shall accept the Premises. Tenant's taking possession and acceptance of the Premises, respectively, shall not constitute a waiver of: (i) any warranty with respect to workmanship (including installation of equipment) or material (exclusive of equipment provided directly by manufacturers) with respect to the Premises, (ii) any non-compliance of Landlord's Work with applicable Legal Requirements with respect to the Premises, or (iii) any claim that Landlord's Work in the Premises was not completed substantially in accordance with the TI Construction Drawings (subject to Minor Variations and such other changes as are permitted hereunder) (collectively, a "**Construction Defect**"). Tenant shall have one year after Substantial Completion within which to notify Landlord of any such Construction Defect discovered by Tenant in the Premises, and Landlord shall use reasonable efforts to remedy or cause the responsible contractor to remedy any such Construction Defect within 30 days thereafter. Notwithstanding the foregoing, Landlord shall not be in default under the Lease if the applicable contractor, despite Landlord's reasonable efforts, fails to remedy such Construction Defect within such 30-day period. If the contractor fails to remedy such Construction Defect within a reasonable time, Landlord shall use its reasonable efforts to remedy the Construction Defect within a reasonable period.

Tenant shall be entitled to receive the benefit of all construction warranties and manufacturer's equipment warranties relating to equipment installed in the Premises. If requested by Tenant, Landlord shall attempt to obtain extended warranties from manufacturers and suppliers of such equipment, but the cost of any such extended warranties shall be borne solely out of the TI Fund. Landlord shall promptly undertake and complete, or cause to be completed, all punch list items.

(f) **Commencement Date Delay**. Except as otherwise provided in the Lease, Delivery of the Premises shall occur when Landlord's Work has been Substantially Completed, except to the extent that completion of the Landlord's Work shall have been actually delayed by any one or more of the following causes ("**Tenant Delay**"):

(i) Tenant's Representative was not available to give or receive any Communication or to take any other action required to be taken by Tenant hereunder;

(ii) Tenant's request for Change Requests (as defined in Section 4(a) below) whether or not any such Change Requests are actually performed;

(iii) Construction of any Change Requests;

(iv) Tenant's request for materials, finishes or installations requiring unusually long lead times;

(v) Tenant's delay in reviewing, revising or approving plans and specifications beyond the periods set forth herein;

(vi) Tenant's delay in providing information critical to the normal progression of the Project. Tenant shall provide such information as soon as reasonably possible, but in no event longer than one week after receipt of any request for such information from Landlord;

(vii) Tenant's delay in making payments to Landlord for Excess TI Costs; or

(viii) Any other act or omission by Tenant or any Tenant Party (as defined in the Lease), or persons employed by any of such persons.

If Delivery is delayed for any of the foregoing reasons, then Landlord shall cause the TI Architect to certify the date on which Landlord's Work would have been Substantially Completed but for such Tenant Delay and such certified date shall be the date of Delivery.

4. **Changes**. Any changes requested by Tenant to the Tenant Improvements shall be requested and instituted in accordance with the provisions of this Section 4 and shall be subject to the written approval of Landlord and the TI Architect, such approval not to be unreasonably withheld, conditioned or delayed.

(a) **Tenant's Request For Changes**. If Tenant shall request changes to the Tenant Improvements ("**Changes**"), Tenant shall request such Changes by notifying Landlord in writing in substantially the same form as the AIA standard change order form (a "**Change Request**"), which Change Request shall detail the nature and extent of any such Change. Such Change Request must be signed by Tenant's Representative. Landlord shall, before proceeding with any Change, use commercially reasonable efforts to respond to Tenant as soon as is reasonably possible with an estimate of: (i) the time it will take, and (ii) the architectural and engineering fees and costs that will be incurred, to analyze such Change Request (which costs shall be paid from the TI Fund to the extent actually incurred, whether or not such change is implemented), and Landlord shall confirm in writing that Tenant authorizes the Change Request after its receipt of Tenant's estimate. Landlord shall thereafter submit to Tenant in writing, within 5 business days of receipt of the Change Request (or such longer period of time as is reasonably required depending on the extent of the Change Request), an analysis of the additional cost or savings involved, including, without limitation, architectural and engineering costs and the period of time, if any, that the Change will extend the date on which Landlord's Work will be Substantially Complete. Any such delay in the completion of Landlord's Work caused by a Change, including any suspension of Landlord's Work while any such Change is being evaluated and/or designed, shall be Tenant Delay. If Landlord elects to make any material changes to the base, shell and core of the Building that materially and adversely impacts the Tenant Improvements or Tenant's Permitted Use, Landlord shall provide Tenant with advance written notice thereof and Tenant shall provide Landlord with written notice, within 5 business days after receipt of Landlord's notice, if Tenant objects to the proposed change and in such case Landlord shall not make such changes.

(b) **Implementation of Changes**. If Tenant approves in writing the cost or savings and the estimated extension in the time for completion of Landlord's Work, if any, Landlord shall cause the approved Change to be instituted. Notwithstanding any approval or disapproval by Tenant of any estimate of the delay caused by such proposed Change, the TI Architect's determination of the amount of Tenant Delay in connection with such Change shall be final and binding on Landlord and Tenant.

5. **Costs**.

(a) **TI Costs**. Landlord shall be responsible for the payment of design, engineering, permits and construction costs in connection with the construction of the Tenant Improvements, including, without limitation, the cost of preparing the TI Construction Drawings, the Space Plans and TI Specifications, a construction management fee to Hughes Marino equal to 1% of the hard costs of the Tenant Improvements, and Landlord's out-of-pocket expenses (collectively, "**TI Costs**"). Notwithstanding anything to the contrary contained herein, in no event shall Landlord be required to pay for any furniture, personal property or other non-Building system materials or equipment, including, but not limited to, non- ducted biological safety cabinets and other scientific equipment not incorporated into the Tenant Improvements.

(b) **Excess TI Costs**. Notwithstanding anything to the contrary contained herein, other than the Tenant Improvement Allowance provided for in Section 5(c) below, Tenant acknowledges and agrees that Landlord shall have no responsibility for any costs arising from or related to Tenant's changes to the Space Plan, TI Specifications or TI Construction Drawings, Tenant Delays, the cost of Changes and Change Requests (collectively, "**Excess TI Costs**"). Tenant shall deposit with Landlord, as a condition precedent to Landlord's obligation to complete the Tenant Improvements, 100% of the Excess TI Costs (other than any Tenant Improvement Allowance which Tenant may elect to use). If Tenant fails to deposit any Excess TI Costs with Landlord, Landlord shall have all of the rights and remedies set forth in the Lease for nonpayment of Rent (including, but not limited to, the right to interest at the Default Rate and the right to assess a late charge). For purposes of any litigation instituted with regard to such amounts, those amounts will be deemed Rent under the Lease.

(c) **Tenant Improvement Allowance**. At Tenant's election, Landlord shall make available to Tenant a tenant improvement allowance (the "**Tenant Improvement Allowance**") in the maximum amount of $10.00 per rentable square foot in the Premises, or $767,780 in the aggregate, which shall, to the extent used, result in Additional Rent as set forth in Section 4(b) of the Lease. The Tenant Improvement Allowance may only be used for fixed and permanent improvements to the Premises.

6. **Tenant Access**.

(a) **Tenant's Access Rights**. Landlord hereby agrees to permit Tenant access, at Tenant's sole risk and expense, to the Premises (i) at least 30 days prior to the Commencement Date to perform any work ("**Tenant's Work**") required by Tenant other than Landlord's Work, provided that such Tenant's Work is coordinated with the TI Architect and the general contractor, and complies with the Lease and all other reasonable restrictions and conditions Landlord may impose, and (ii) prior to the completion of Landlord's Work, to inspect and observe work in process; all such access shall be during normal business hours or at such other times as are reasonably designated by Landlord. Notwithstanding the foregoing, Tenant shall have no right to enter onto the Premises or the Project unless and until Tenant shall deliver to Landlord evidence reasonably satisfactory to Landlord demonstrating that any insurance reasonably required by Landlord in connection with such pre-commencement access (including, but not limited to, any insurance that Landlord may require pursuant to the Lease) is in full force and effect. Any entry by Tenant shall comply with all established safety practices of Landlord's contractor and Landlord until completion of Landlord's Work and acceptance thereof by Tenant.

(b) **No Interference**. Neither Tenant nor any Tenant Party (as defined in the Lease) shall interfere with the performance of Landlord's Work, nor with any inspections or issuance of final approvals by applicable Governmental Authorities, and upon any such interference, Landlord shall have the right to exclude Tenant and any Tenant Party from the Premises and the Project until Substantial Completion of Landlord's Work.

(c) **No Acceptance of Premises**. The fact that Tenant may, with Landlord's consent, enter into the Project prior to the date Landlord's Work is Substantially Complete for the purpose of performing Tenant's Work shall not be deemed an acceptance by Tenant of possession of the Premises, but in such event Tenant shall defend with counsel reasonably acceptable by Landlord, indemnify and hold Landlord harmless from and against any loss of or damage to Tenant's property, completed work, fixtures, equipment, materials or merchandise, and from liability for death of, or injury to, any person, caused by the act or omission of Tenant or any Tenant Party.

7. **Miscellaneous**.

(a) **Consents**. Whenever consent or approval of either party is required under this Work Letter, that party shall not unreasonably withhold, condition or delay such consent or approval, unless expressly set forth herein to the contrary.

(b) **Modification**. No modification, waiver or amendment of this Work Letter or of any of its conditions or provisions shall be binding upon Landlord or Tenant unless in writing signed by Landlord and Tenant.

(c) **No Default Funding**. In no event shall Landlord have any obligation to fund any portion of the Tenant Improvement Allowance or to perform any Landlord's Work during any period that Tenant is in Default under the Lease.

Schedule 1

Space Plans

[Omitted]

Schedule 2

TI Specifications

[Omitted]

Schedule 3

Improvement Responsibility Matrix

[Omitted]

Schedule 4

Construction Schedule

Milestone Date Matrix

[Omitted]

Schedule 5

Landlord's Budget

[Omitted]

EXHIBIT D TO LEASE

ACKNOWLEDGMENT OF COMMENCEMENT DATE

[Omitted]

EXHIBIT E TO LEASE

Rules and Regulations

[Omitted]

EXHIBIT F TO LEASE

TENANT'S PERSONAL PROPERTY

None.

EXHIBIT G TO LEASE

TENANT MAINTENANCE OBLIGATIONS

[Obligations omitted.]

EXHIBIT H TO LEASE

SIGNAGE

[Signage omitted]

EXHIBIT I TO LEASE

ONE ALEXANDRIA SQUARE - PROJECT IMPROVEMENTS

[Project Improvements omitted]

EXHIBIT J TO LEASE

PARKING

[Parking omitted]

SUBLEASE

1. PARTIES.

This Sublease, dated June 15, 2020 ("Effective Date") is made between GOSSAMER BIO, INC., a Delaware corporation ("Sublessor"), and SINGULAR GENOMICS SYSTEMS, INC., a Delaware corporation ("Sublessee").

2. MASTER LEASE.

Sublessor is the lessee under that certain Lease Agreement dated November 19, 2019, (the "Master Lease") attached as Exhibit 'B', wherein ARE-SD Region No. 35, LLC ("Lessor") leased to Sublessor a portion of the building located in the City of San Diego, San Diego County, State of California, described as: 3033 Science Park Road, San Diego, California, 92121 ("the "Building").

3. PREMISES.

Sublessor hereby subleases to Sublessee on the terms and conditions set forth in this Sublease the following portion of the Master Premises: approximately 12,685 rentable square feet (subject to adjustment in the event of a re- measurement of the Building or Premises pursuant to the Master Lease) on the second (2nd) floor of the Building commonly known as Suite A, as shown in Exhibit 'A' attached hereto (the "Premises").

4. WARRANTIES.

Sublessor warrants and represents to Sublessee that, to Sublessor's current actual knowledge, the Master Lease is in full force and effect and Sublessor is not in default or breach of any of the provisions of the Master Lease, and that Sublessor has no knowledge of any claim by Lessor that Sublessor is in default or breach of any of the provisions of the Master Lease.

Sublessee covenants that it will occupy the Premises in accordance with the terms of the Master Lease as incorporated herein and will not suffer to be done or omit to do any act which may result in a violation of or a default under any of the terms and conditions of the Master Lease, or render Sublessor liable for any damage, charge or expense thereunder. Sublessee warrants and represents that all financial information relating to Sublessee which has been provided to Sublessor is true and correct.

5. TERM.

The Term of this Sublease shall commence on July 1, 2020 (the "Commencement Date") so long as the following have been completed: (i) the full execution and delivery of this Sublease, (ii) receipt of Lessor's consent to this Sublease ("Lessor Consent"), (iii) payment of the first months' Base Rent and Security Deposit by Sublessee and (iv) submission by Sublessee of acceptable certificates of insurance naming Lessor and Sublessor. Following the latest of (i), (ii), (iii) and (iv) above until the Commencement Date, Sublessee shall be

provided access to Premises ("Early Access Period") for the installation of furniture, fixtures, equipment or other special leasehold improvements including but not limited to telephones, computer wiring and networking cable (provided that Sublessee will obtain the prior consent of Lessor and Sublessor to such items to the extent required by the Master Lease or this Sublease). Sublessee shall not be obligated to pay any Base Rent or Operating Expenses/utilities during the Early Access Period (subject to the last paragraph of this Section 5).

If for any reason Sublessor does not deliver possession to Sublessee on the Commencement Date, the validity of this Sublease shall not be impaired. Notwithstanding the foregoing, if Sublessor has not delivered possession to Sublessee within thirty (30) days after the Commencement Date, then at any time thereafter and before delivery of possession of the Premises to Sublessee, Sublessee may give written notice to Sublessor of Sublessee's intention to cancel this Sublease. Said notice shall set forth an effective date for such cancellation which shall be at least five (5) business days after delivery of said notice to Sublessor. If Sublessor delivers possession to Sublessee on or before such effective date, this Sublease shall remain in full force and effect. If Sublessor fails to deliver possession to Sublessee on or before such effective date, this Sublease shall be cancelable by Sublessee, in which case all consideration previously paid by Sublessee to Sublessor on account of this Sublease shall be returned to Sublessee (subject to the following paragraph of this section), this Sublease shall thereafter be of no further force or effect, and Sublessor shall have no further liability to Sublessee on account of such delay or cancellation. Sublessee may not cancel this Sublease for any other reason than those contained herein.

6. RENT AND ADDITIONAL RENT.

Sublessee shall pay to Sublessor, without deduction, setoff, notice or demand, at Gossamer Bio, Inc., 3013 Science Park Road, San Diego, California, 92121, Attention: Accounts Receivable, or at such other place as Sublessor shall designate from time to time by written notice to Sublessee, the sum of $63,425.00 per month (based upon $5.00 per rentable square foot of the Premises) ("Base Rent"), on the first day of each month of the Term. Sublessee shall pay to Sublessor concurrently with Sublessee's execution of this Sublease and Lessor Consent, the sum of $63,425.00 as prepayment of the Base Rent due for January 2021. If the Commencement Date falls on a day other than the first day of a month, the Base Rent for the partial months shall be prorated on a per diem basis based on the actual number of days in the month in which the Commencement Date occurs.

(A) Annual Increase. The monthly Base Rent shall increase by 3% on each anniversary of the first day of the first full month following the Commencement Date (for instance, if Commencement Date is July 1, 2020 then the annual increase shall occur on July 1, 2021).

(B) Abated Rent. Sublessee shall receive abatement of its obligation to pay the monthly Base Rent due hereunder for the Months of July-December 2020. Sublessee shall be responsible for its Pro Rata Share (as defined below) of all other Additional Rent (as defined below) payable hereunder and for janitorial costs for the Sublease Premises during such Base Rent abatement period. In the event of an Event of

Default (as defined below) by Sublessee under this Sublease after the expiration of any applicable notice and cure period, Sublessor will be entitled to reimbursement of all Base Rent abated pursuant to this paragraph.

(C) Additional Rent. Commencing as of the Commencement Date and continuing thereafter throughout the Term of this Sublease, Sublessee shall pay as "Operating Expenses" its Pro Rata Share of all Operating Expenses and Taxes and the actual Amenities Fee charged by Lessor on a per rentable square foot basis with an annual increase, as defined in Master Lease. Sublessee's Pro Rata Share is hereby agreed to be 12.32% (subject to adjustment in the event of a re-measurement of the Building or Premises pursuant to the Master Lease) ("Pro Rata Share"). Sublessee shall pay Operating Expenses based on estimates provided by Sublessor (which shall be based upon the estimates provided by Lessor under the Master Lease), at the same time and in the same manner as the payment of Base Rent. Upon Sublessor's receipt of an Annual Statement (as defined in the Master Lease), Sublessee will be credited with its Pro Rata Share of any overpayment shown in such Annual Statement, or will pay, within fifteen (15) days after demand, its Pro Rata Share of any underpayment as shown in such Annual Statement. In addition, Sublessee shall pay Sublessor a property management fee in an amount equal to three percent (3%) of the Base Rent, provided that during any period of full or partial Base Rent abatement, Sublessee shall pay the property management fee based on the amount of Base Rent that would have been payable but for the Base Rent abatement. All sums payable by Sublessee hereunder, including, without limitation Operating Expenses and the property management fee, may be referred to as "Additional Rent" and all Additional Rent, together with Base Rent may be referred to herein as "Rent."

(D) Utilities. Sublessee will be responsible for all janitorial services and utility costs for the Sublease Premises commencing on the Commencement Date. If a separate electric meter is not in place for Premises, Sublessor may pass through a charge for Sublessee's utilities based on Sublessee Pro Rata Share of the utility bills for the Building.

7. USE.

The Sublease Premises may be used for research and development laboratory, related office and other related uses permitted by Applicable Laws, including zoning ordinances, and the Master Lease. Sublessee shall not commit or allow to be committed any waste upon the Premises, or any public or private nuisance or act which is unlawful.

8. BUILDING CONDITION.

Sublessee shall accept the Premises in its "as-is" condition. Note that Sublessor has not occupied the Premises and will deliver in same condition as Sublessor has received from Landlord on June 15, 2020 which is the commencement date of Master Lease. For any repair, maintenance or replacement of Building Systems performed by Lessor, Sublessee

will pay Sublessee's Pro Rata Share of such costs in the same manner as provided under the Master Lease.

Sublessee agrees that Sublessor shall not be required to perform any of the covenants, agreements and/or obligations of Lessor under the Master Lease and, insofar as any of the covenants, agreements and obligations of Sublessor hereunder are required to be performed under the Master Lease by Lessor thereunder, Sublessee acknowledges and agrees that Sublessee will look solely to Lessor for such performance. Sublessor shall not be responsible for any failure or interruption, for any reason whatsoever, of the services, utilities or facilities that may be appurtenant or supplied to the Premises by Lessor or otherwise and no such failure will in any way excuse Sublessee's performance under this Sublease or entitle Sublessee to any abatement of rent or other charge, except as may be expressly permitted by the terms of the Master Lease. Sublessee shall pay to Sublessor as Rent hereunder any and all sums which Sublessor may be required to pay Lessor arising out of a request by Sublessee for additional building services or any other services from Lessor, and which Lessor bills to Sublessor.

9. ACCESS.

Subject to the Master Lease, casualty and Force Majeure events, Sublessee shall have 24/7 access to and use of the Premises.

10. TRANSFERS.

Sublessee shall not assign, mortgage, encumber or otherwise transfer this Sublease or sublet the whole or any part of the Premises without the prior written consent of Lessor and Sublessor (Sublessor's consent not to be unreasonably withheld, conditioned or delayed) and any such transfer will be subject to compliance with all terms and conditions of the Master Lease. No assignment, subletting or other transfer shall relieve Sublessee of any liability under this Sublease. Consent to any such assignment, subletting or transfer shall not operate as a waiver of the necessity for consent to any subsequent assignment, subletting or transfer. In connection with each request for an assignment or subletting, Sublessee shall pay the reasonable cost of processing such assignment or subletting, including attorneys' fees, and any fees or costs payable under the Master Lease, within fifteen (15) days after demand by Sublessor.

11. PARKING.

Sublessee shall be provided parking per the Master Lease, which includes approximately 2.5 parking spaces per 1,000 square feet of rentable area of the Premises, subject to the terms of Article 10 of the Master Lease. Such parking will be provided free of charge throughout the Term.

12. SIGNAGE.

Sublessee, at Sublessee's sole expense, shall have the right to install Building standard lobby directory and suite identification signage, subject to the terms of the Master Lease and Lessor approval.

13. OTHER PROVISIONS OF SUBLEASE.

All applicable terms and conditions of the Master Lease are incorporated into and made a part of this Sublease as if Sublessor were the lessor thereunder (provided that under no circumstance shall Sublessor be responsible or liable in any way for the failure of the Lessor to perform any acts required under the Master Lease or to supply any item, including, but not limited to, any utility or service to the subleased Premises and no such failure will in any way excuse Sublessee's performance under this Sublease or entitle Sublessee to any abatement of rent or other charge, except as may be expressly permitted by the terms of the Master Lease), Sublessee the lessee thereunder, and the Premises the Master Premises, except for the following: All sections of the summary except the definitions of Building, Premises, Project, Rentable Area of Premises, Rentable Area of Building and Rentable Area of Project and Permitted Use, the first and second paragraphs of Section 2, Section 4, Sections 38, 40, 43, 44 and Exhibit I of the Master Lease. Sublessee assumes and agrees to perform the lessee's obligations under the Master Lease during the Term to the extent that such obligations are applicable to the Premises, except that the obligation to pay Rent to Lessor under the Master Lease shall be considered performed by Sublessee to the extent and in the amount rent is paid to Sublessor in accordance with Section 6 of this Sublease. Sublessee shall not commit or suffer any act or omission that will violate any of the provisions of the Master Lease. Sublessor shall use commercially reasonable efforts, at Sublessee sole cost, to cause Lessor to perform its obligations under the Master Lease for the benefit of Sublessee. Sublessor shall not enter into a voluntary termination of the Master Lease as to the Sublease Premises without Sublessee's prior consent, not to be unreasonably withheld. Notwithstanding the foregoing, Sublessor may assign or transfer the Master Lease without the consent of Sublessee and from and after the effective date of such transfer or assignment, Sublessee will look solely to such transferee or assignee for the performance of the obligation of Sublessor hereunder and Sublessor shall be released on all further obligations under this Sublease. If the Master Lease gives Sublessor any right to terminate the Master Lease in the event of the partial or total damage, destruction, or condemnation of the Master Premises or the building or project of which the Master Premises are a part, the exercise of such right by Sublessor shall not constitute a default or breach hereunder. If the Master Lease terminates for any reason (other than a default by Sublessor under the Master Lease), this Sublease will terminate on the same date as the Master Lease, and Sublessor will have no liability to Sublessee on account of such termination. In all provisions of the Master Lease requiring tenant to submit, exhibit to, supply or provide Lessor with evidence, certificates, or any other matter or thing, Sublessee shall be required to submit, exhibit to, supply or provide, as the case may be, the same to both Lessor and Sublessor.

14. SECURITY DEPOSIT

Concurrently with Sublessee's execution of this Sublease and Lessor Consent, Sublessee shall deposit with Sublessor the sum of $63,425.00 as a security deposit in the form of an unconditional and irrevocable letter of credit (the "Security Deposit") for the performance by Sublessee of its obligations under this Sublease, the terms of are specified in, and shall be in compliance with, Section 6 of the Master Lease.

15. INDEMNIFICATION

In addition to any indemnity obligations set forth in the Master Lease and incorporated by reference herein and not in limitation thereof, Sublessee shall indemnify, protect, defend and hold harmless the Premises, Lessor and Sublessor and their agents, partners and lenders, from and against any and all Claims (as defined in the Master Lease) arising out of, involving, or in connection with, the use and/or occupancy of the Premises by Sublessee or Sublessee's failure to perform or observe any of the terms and conditions of the Master Lease or this Sublease; provided that nothing in the foregoing will require Sublessee to indemnify Sublessor for any Claims to the extent arising out of the negligence or willful misconduct of Sublessor, its agents or employees. If any action or proceeding is brought against Lessor or Sublessor by reason of any of the foregoing matters, Sublessee shall upon notice defend the same at Sublessee's expense by counsel reasonably satisfactory to Lessor and Sublessor, and Sublessor shall cooperate with Sublessee in such defense. Sublessor will indemnify Sublessee for Sublessor's breach of Sublessor's obligations under the Master Lease to the extent such breach was not caused or contributed to by Sublessee, its agents or employees. Nothing in this section shall be deemed to affect Sublessor's right to indemnification for liability or liabilities arising prior to termination of this Sublease for personal injury or property damage under any other indemnification or other provision of this Sublease.

16. INSURANCE.

Sublessee will be required to obtain all of the types and levels of insurance required pursuant to Article 17 of the Master Lease; provided that Sublessee's general liability insurance will name Sublessor as an additional insured in addition to naming the Landlord Parties (as defined in the Master Lease). Sublessee shall provide Sublessor with proof of such insurance coverage before the execution of this Sublease and prior to occupancy of the Premises, and the waiver of subrogation contained in Article 17 of the Master Lease shall apply in favor of both Sublessor and Lessor.

17. ATTORNEYS' FEES.

If Sublessor or Sublessee shall commence legal action against the other arising out of or in connection with this Sublease, the prevailing party shall be entitled to recover its costs of suit and reasonable attorneys' fees.

18. AGENCY DISCLOSURE.

Sublessor and Sublessee each warrant that they have dealt with no other real estate broker in connection with this transaction except Hughes Marino, who represents both the Sublessor and Sublessee (the "Broker") and that they know of no other real estate broker or agent who is entitled to a commission in connection with this Sublease. Each Party agrees to indemnify and defend the other Party against and hold the other Party harmless for, from and against any and all claims, demands, losses, liabilities, lawsuits, judgments, and costs and expenses (including without limitation reasonable attorneys' fees) with respect to any leasing commission or equivalent compensation alleged to be owing on

account of the indemnifying party's dealings with any real estate broker or agent other than the Broker. The foregoing indemnity shall survive this Sublease. Sublessor will pay a commission to the Broker on account of this Sublease pursuant to a separate written agreement.

19. WAIVER & NOTICES.

No provision of or remedy under this Sublease may be waived or modified by either party unless expressly waived or modified in a writing signed by an officer of both parties. All notices and demands which may or are to be required or permitted to be given by either party on the other hereunder shall be in writing and delivered in accordance with Section 45(a) of the Master Lease. All notices and demands by the Sublessor to Sublessee shall be sent to the Sublessee at the Premises, Attention: CEO or to such other place as Sublessee may from time to time designate in a notice to the Sublessor. All notices and demands by the Sublessee to Sublessor shall be mailed to the Sublessor at the address set forth for notices in the Master Lease, and to such other person or place as the Sublessor may from time to time designate in a notice to the Sublessee. Copies of all notices and demands by the Lessor to either party alleging any default under the terms of the Master Lease or this Sublease shall be promptly provided to the other party. In all provisions of the Master Lease requiring that the tenant thereunder deliver notice to Lessor, Sublessee shall be required to deliver notice concurrently to Sublessor and Lessor.

20. CONSENT.

Whenever the consent of Sublessor is required pursuant to the terms of this Sublease, including, without limitation, the terms of the Master Lease incorporated herein by reference, such consent shall not be unreasonably withheld, conditioned or delayed; provided that whenever Lessor's consent to such request is also required pursuant to this Sublease or the Master Lease, (i) it shall be reasonable for Sublessor to withhold its consent if Lessor withholds its consent, (ii) it shall be reasonable for Sublessor to delay its consent or withholding of such consent until such time as Lessor has given or denied its consent, (iii) it shall be reasonable for Sublessor to condition its consent upon any conditions imposed by Lessor upon Lessor's consent, and (iv) Sublessor shall not be liable for or subject to a suit for specific performance based on Sublessor's withholding, conditioning or delaying of consent caused by Lessor withholding, conditioning or delaying its consent to the same request.

21. LESSOR'S CONSENT.

This Sublease is subject to and contingent upon Lessor's execution of a Consent to Sublease in a form reasonably acceptable to Sublessor and Sublessee within thirty (30) days of the date hereof. In the event Lessor does not so execute such Consent to Sublease within such time, either party may terminate this Sublease upon written notice to the other party, which termination will be effective upon receipt. If this Sublease is terminated pursuant to this Section 21, Sublessor shall return to Sublessee the Security Deposit and first month's rent previously paid by Sublessee to Sublessor within fifteen (15) business days after the termination date, and neither party shall have any liability to the other on

account of this Sublease or any other actions between the parties prior to the termination date. For clarity, in the event of a termination, Sublessee will not be entitled to any reimbursement for costs or expenses incurred by Sublessee, including without limitation, costs incurred for space planning, ordering of furniture, materials or similar items in preparation for occupancy of the Premises, and Sublessee agrees that Sublessor shall have no liability or responsibility in connection therewith.

22. COMPLIANCE WITH LAWS.

Sublessee shall promptly comply with all Legal Requirements regulating Sublessee's particular use, occupancy or improvement of the Premises. Sublessee shall be fully responsible for the cost of complying with all of the foregoing.

23. HAZARDOUS MATERIALS.

Sublessee shall not use or allow the use of any substance which constitutes a Hazardous Material under the Master Lease, except in strict accordance with the terms and conditions of the Master Lease and subject to all required consents and approvals of Lessor. Sublessee acknowledges the provisions of the Master Lease disclosing certain Pre-Existing Hazardous Materials and the Contemplated Covenant (both as defined in the Master Lease), and agrees that Lessor shall be solely responsible for such items and Sublessee shall not look to Sublessor in connection with such items. Sublessee hereby waives and releases Sublessor from any and all Claims relating to the Pre-Existing Hazardous Materials and the Contemplated Covenant. If Sublessee knows, or has reasonable cause to believe, that a Hazardous Material has come to be located in, on, under or about the Premises in violation of applicable laws or the Master Lease, Sublessee shall immediately give written notice of such fact to Sublessor, and provide Sublessor with a copy of any report, notice, claim or other documentation which Sublessee has concerning the presence of such Hazardous Material. Upon the expiration of the Term of this Sublease, Sublessee will prepare a Surrender Plan (which will be subject to the approval of Lessor and Sublessor) and return the Premises to Sublessor free of any residual Hazardous Materials resulting from Sublessee's use and occupancy of the Premises. Nothing in this Section 23 is intended to or will be construed to impose any liability on Sublessee for any violation of the terms of the Master Lease applicable to Hazardous Material which violation is caused solely by Sublessor, its agents or employees.

24. DEFAULT.

The occurrence of any of the following events (each, an "Event of Default") shall constitute a material default and breach of this Sublease by Sublessee: (a) a default under the Master Lease due to Sublessee's acts or omissions; (b) the breach of any of the provisions of Article 20 of the Master Lease. Upon any Event of Default under this Sublease, Sublessor shall have all of the remedies available to Lessor pursuant to the Master Lease, including without limitation the remedies enumerated in Article 21 of the Master Lease. All rights and remedies of Sublessor herein enumerated or incorporated by reference above shall be cumulative, and none shall exclude any other right or remedy allowed by law or in equity,

and all of the following may be exercised with or without legal process as then may be provided or permitted by the laws of the State in which the Premises are situated.

25. HOLDOVER.

Notwithstanding any provision to the contrary contained in the Master Lease or this Sublease, (i) Sublessor expressly reserves the right to require Sublessee to surrender possession of the Premises upon the expiration of the Term or upon the earlier termination hereof and the right to assert any remedy at law or in equity to evict Sublessee and/or collect damages in connection with any such holding over, and (ii) Sublessee shall indemnify, defend and hold Sublessor harmless from and against any and all claims, demands, actions, losses, damages, obligations, costs and expenses, including, without limitation, attorneys' fees incurred or suffered by Sublessor by reason of Sublessee's failure to surrender the Premises on the expiration or earlier termination of this Sublease in accordance with the provisions of this Sublease, including the payment of all holdover rent and penalties chargeable pursuant to the Master Lease.

26. ENTIRE AGREEMENT

This Sublease, including the Exhibits and documents referenced herein, contains the entire understanding of the parties with respect to the subject matter hereof and supersedes all prior agreements or understandings. This Sublease shall not be modified except in writing signed by both Sublessor and Sublessee.

27. GOVERNING LAW; JURISDICTION.

This Agreement shall be governed by, and construed and enforced in accordance with, the laws of the State of California, without reference to the conflicts of law principles thereof.

28. COUNTERPARTS.

This Sublease may be executed in any number of counterparts, which may be delivered electronically, via facsimile or by other means. Each party may rely upon signatures delivered electronically or via facsimile as if such signatures were originals. Each counterpart of this Sublease shall be deemed to be an original, and all such counterparts (including those delivered electronically or via facsimile), when taken together, shall be deemed to constitute one and the same instrument.

[SIGNATURE PAGE FOLLOWS]

In witness whereof, duly authorized representatives of the parties have executed and delivered this Sublease as of the Effective Date.

SUBLESSOR:

GOSSAMER BIO, INC.
a Delaware corporation

By:	/s/ Jill Howe
Name:	Jill Howe
Title:	Vice President Finance
Date:	06/15/2020

SUBLESSEE:

SINGULAR GENOMICS SYSTEMS, INC.
a Delaware corporation

By:	/s/ Andrew Spaventa
Name:	Andrew Spaventa
Title:	Chief Executive Officer
Date:	06/15/2020

EXHIBIT A

Floor Plan of Sublease Premises

[Omitted]

EXHIBIT B

Master Lease

[Omitted]

SINGULAR GENOMICS SYSTEMS, INC.

December 17, 2019

Andrew Spaventa

Dear Drew:

SINGULAR GENOMICS SYSTEMS, INC. (the "Company") is pleased to confirm the amended terms of your employment with the Company, as follows:

1. **Position**. Your title will continue to be Chief Executive Officer, President and Chairman of the Board. This is a full-time position. In this position, you will be responsible for setting strategic goals for the Company and leading with the management team toward the successful achievement of such goals, and for overseeing all operations and business activities of the Company. You acknowledge that you are not currently involved in and during the duration of your employment with the Company, will not become involved in any outside activities, including any consulting or other business activity (whether full-time or part-time), that would create a conflict of interest with the Company. By signing this letter agreement, you confirm to the Company that you have no contractual commitments or other legal obligations that prohibit you from performing your duties for the Company. In addition, for the duration of your employment as Chief Executive Officer, you will serve on the Company's Board of Directors.

2. **Cash Compensation**.

(a) **Annual Salary**. Effective as of January 1, 2020, the Company will increase your base salary to $365,750 per year, payable in accordance with the Company's standard payroll schedule. This salary will be subject to further adjustment pursuant to the Company's employee compensation policies in effect from time to time.

(b) **Annual Bonus**. You will be eligible to be considered for an incentive bonus for each fiscal year of the Company. The bonus (if any) will be awarded based on objective or subjective criteria established by the Board of Directors. Your target bonus will be equal to 35% of your annual base salary. Any bonus for a fiscal year will be paid within 2½ months after the close of that fiscal year, but only if you are still employed by the Company at the time of payment. The determinations of the Board of Directors with respect to your bonus will be final and binding.

3. **Employee Benefits**. You will remain eligible to participate in a number of Company-sponsored benefits. We currently offer a flexible vacation policy, which does not limit the amount of vacation time that employees may take, provided that job performance remains acceptable. This policy is subject to change from time to time at the Company's discretion. You acknowledge no vacation accrues under the flexible vacation policy, and therefore there is no unused vacation to be paid out upon termination.

4. **Stock Options**. Subject to the approval of the Company's Board of Directors, you will be granted an option to purchase 2,715,000 shares (the "Option Shares") of the Company's Common Stock (the "Option"). The exercise price per share shall be equal to the fair market value per share on the date the Option is granted, as determined by the Company's Board of Directors. The Option will be subject to the terms and conditions applicable to options granted under the Company's 2016 Stock

Plan (the "Plan") and the applicable Stock Option Agreement. You will vest in 1/48th of the Option Shares for each month of continuous service measured from December 17, 2019, as described in the applicable Stock Option Agreement. If your employment ends as a result of an Involuntary Termination more than three (3) months prior to a Change in Control, you will immediately vest in the number of Option Shares in which you would have vested had you provided twelve (12) additional months of continuous service. In addition, you will immediately vest with respect to any remaining unvested Option Shares, upon the effective date of a Change in Control if (a) you are providing services to the Company at such effective time or (b) your services with the Company ended as a result of an Involuntary Termination on or less than three (3) months prior to the effective date of such Change in Control.

5. **Severance.**

(a) **General**. If you are subject to an Involuntary Termination, then you will be entitled to the benefits described in this Section 5. However, this Section 5 will not apply unless you (i) have returned all Company property in your possession, (ii) have resigned as a member of the Board of Directors of the Company and all of its subsidiaries, to the extent applicable, and (iii) have executed a general release of all claims that you may have against the Company or persons affiliated with the Company. You must execute and return the release on or before the date specified by the Company in the prescribed form (the "Release Deadline"). The Release Deadline will in no event be later than fifty (50) days after your Separation. If you fail to return the release on or before the Release Deadline, or if you revoke the release, then you will not be entitled to the benefits described in this Section 5.

(b) **Salary Continuation**. If you are subject to an Involuntary Termination, then the Company will continue to pay your base salary for a period of twelve (12) months after your Separation. Your base salary will be paid at the rate in effect at the time of your Separation and in accordance with the Company's standard payroll procedures. The salary continuation payments will commence within sixty (60) days after your Separation and, once they commence, will include any unpaid amounts accrued from the date of your Separation. However, if the sixty (60)-day period described in the preceding sentence spans two calendar years, then the payments will in any event begin in the second calendar year.

(c) **Prorated Bonus**. If you are subject to an Involuntary Termination, then you will be entitled to a prorated portion of your target bonus, based on the number of days you are employed by the Company during the fiscal year in which you are subject to the Involuntary Termination. The bonus will be paid to you within sixty (60) days after your Separation, however, if the sixty (60)-day period spans two calendar years, then the payments will in any event begin in the second calendar year.

(d) **COBRA**. If you are subject to an Involuntary Termination and you elect to continue your health insurance coverage under the Consolidated Omnibus Budget Reconciliation Act ("COBRA") following your Separation, then the Company will pay the same portion of your monthly premium under COBRA as it pays for active employees until the earliest of (i) the close of the twelve (12)-month period following your Separation, (ii) the expiration of your continuation coverage under COBRA or (iii) the date when you become eligible for substantially equivalent health insurance coverage in connection with new employment or self-employment.

6. **Proprietary Information and Inventions Agreement**. The Proprietary Information and Inventions Agreement that you signed on September 6, 2016 will remain in full force and effect.

7. **Employment Relationship**. Employment with the Company is for no specific period of time. Your employment with the Company will be "at will," meaning that either you or the

Company may terminate your employment at any time and for any reason, with or without cause. Any contrary representations that may have been made to you are superseded by this letter agreement. This is the full and complete agreement between you and the Company on this term. Although your job duties, title, compensation and benefits, as well as the Company's personnel policies and procedures, may change from time to time, the "at will" nature of your employment may only be changed in an express written agreement signed by you and a duly authorized officer of the Company (other than you).

During the term of your employment, you shall devote your business energies, interest, abilities and productive time to the proper and efficient performance of your duties with the Company; provided, however, that you may continue to serve as partner of Axon Ventures. You may also serve as a director on the Board of Directors of other companies and/or engage in other professional activities that you disclose in writing in advance to, and are approved by, the Company's Board of Directors.

8. **Tax Matters**.

(a) **Withholding**. All forms of compensation referred to in this letter agreement are subject to reduction to reflect applicable withholding and payroll taxes and other deductions required by law.

(b) **Section 409A**. For purposes of Section 409A of the Internal Revenue Code of 1986, as amended (the "Code"), each salary continuation payment under Section 5(b) is hereby designated as a separate payment. If the Company determines that you are a "specified employee" under Section 409A(a)(2)(B)(i) of the Code at the time of your Separation, then (i) the salary continuation payments under Section 5(b), to the extent that they are subject to Section 409A of the Code, will commence on the first business day following (A) expiration of the six-month period measured from your Separation or (B) the date of your death and (ii) the installments that otherwise would have been paid prior to such date will be paid in a lump sum when the salary continuation payments commence

(c) **Tax Advice**. You are encouraged to obtain your own tax advice regarding your compensation from the Company. You agree that the Company does not have a duty to design its compensation policies in a manner that minimizes your tax liabilities, and you will not make any claim against the Company or its Board of Directors related to tax liabilities arising from your compensation.

9. **Interpretation, Amendment and Enforcement**. This letter agreement supersedes and replaces your prior offer letter with the Company, signed on September 6, 2016, and any additional prior agreements, representations or understandings (whether written, oral, implied or otherwise) between you and the Company and constitutes the complete agreement between you and the Company regarding the subject matter set forth herein. This letter agreement may not be amended or modified, except by an express written agreement signed by both you and a duly authorized officer of the Company. The terms of this letter agreement and the resolution of any disputes as to the meaning, effect, performance or validity of this letter agreement or arising out of, related to, or in any way connected with, this letter agreement, your employment with the Company or any other relationship between you and the Company (the "Disputes") will be governed by California law, excluding laws relating to conflicts or choice of law. You and the Company submit to the exclusive personal jurisdiction of the federal and state courts located in San Diego, California in connection with any Dispute or any claim related to any Dispute.

10. **Definitions**. The following terms shall have the meaning set forth below wherever they are used in this letter agreement:

"**Cause**" shall mean any of the following: (a) your commission of any act that would constitute a felony or a crime involving fraud, dishonesty, or moral turpitude under the laws of the United States or any state thereof; (b) your intentional violation of any federal or state law or regulation applicable to the Company's business that results in material harm to the Company or its operations; (c) your material violation of any agreement between you and the Company, any Company policy, or any statutory duty owed to the Company or its stockholders that results in material harm to the Company or its operations; (d) an act of gross misconduct or of clear and material insubordination that results in material harm to the Company or its operations; or (e) your persistent neglect of job duties that results in material harm to the Company or its operations. If conduct constituting "Cause" under clause (c), (d) or (e) above is reasonably susceptible of cure as determined by the Board of Directors in good faith, Cause shall not exist unless you are first given thirty (30) days' written notice to cure.

"**Change in Control**" means (a) the consummation of a merger or consolidation of the Company with or into another entity, (b) a sale of all or substantially all of the assets of the Company or (c) the acquisition by a third party in a single transaction or a series of related transactions of more than fifty percent (50%) of the Company's outstanding capital stock. The foregoing notwithstanding, a merger or consolidation of the Company does not constitute a "Change in Control" if immediately after the merger or consolidation a majority of the voting power of the capital stock of the continuing or surviving entity, or any direct or indirect parent corporation of the continuing or surviving entity, will be owned by the persons who were the Company's stockholders immediately prior to the merger or consolidation in substantially the same proportions as their ownership of the voting power of the Company's capital stock immediately prior to the merger or consolidation.

"**Involuntary Termination**" means either (a) your Termination Without Cause or (b) your Resignation for Good Reason.

"**Resignation for Good Reason**" means a Separation as a result of your resignation within twelve (12) months after one of the following conditions has come into existence without your consent:

(a) A reduction in your base salary or target bonus by more than 10%, provided that a reduction of up to 10% shall also be grounds for a Resignation for Good Reason unless the same reduction applies to all of the Company's then serving executives;

(b) A material diminution of your titles, authority, duties or responsibilities; or

(c) A relocation of your principal workplace by more than fifty (50) miles.

A Resignation for Good Reason will not be deemed to have occurred unless you give the Company written notice of the condition within ninety (90) days after the condition comes into existence and the Company fails to remedy the condition within thirty (30) days after receiving your written notice. For the avoidance of doubt, an acquisition of the Company without a corresponding change in authority, duties or responsibilities shall not constitute grounds for a "Resignation for Good Reason" under Section (b) above.

"**Separation**" means a "separation from service," as defined in the regulations under Section 409A of the Code.

"**Termination Without Cause**" means a Separation as a result of a termination of your employment by the Company without Cause, provided you are willing and able to continue performing services within the meaning of Treasury Regulation 1.409A-1(n)(1).

* * * * *

We look forward to continuing our successful employment relationship with you. You may indicate your agreement with these terms by signing and dating this letter agreement and returning it to Human Resources.

Very truly yours,

SINGULAR GENOMICS SYSTEMS, INC.

By: /s/ Kim Kamdar
Kim Kandar

By: /s/ Michael Pellini
Michael Pellini

I have read and accept this employment offer:

/s/ Andrew Spaventa
Andrew Spaventa

Dated: January 7, 2020

Exhibit 10.9

SINGULAR GENOMICS SYSTEMS, INC.

December 17, 2019

Dr. Eli Glezer

Dear Eli:

SINGULAR GENOMICS SYSTEMS, INC. (the "**Company**") is pleased to confirm the amended terms of your employment with the Company, as follows:

1. **Position**. You will continue to serve as the Company's Chief Scientific Officer. This is a full-time position. In this position, you will be responsible for leading the Company's research and product development activities and strategies. You acknowledge that you are not currently involved in and during the duration of your employment with the Company, will not become involved in any outside activities, including any consulting or other business activity (whether full-time or part-time), that would create a conflict of interest with the Company. By signing this letter agreement, you confirm to the Company that you have no contractual commitments or other legal obligations that prohibit you from performing your duties for the Company. You will report directly to the Company's Chief Executive Officer.

2. **Cash Compensation**.

(a) **Annual Salary**. Effective as of January 1, 2020, the Company will increase your base salary to $313,500 per year, payable in accordance with the Company's standard payroll schedule. This salary will be subject to further adjustment pursuant to the Company's employee compensation policies in effect from time to time.

(b) **Annual Bonus**. You will be eligible to be considered for an incentive bonus for each fiscal year of the Company. The bonus (if any) will be awarded based on objective or subjective criteria established by the Board of Directors. Your target bonus will be equal to 25% of your annual base salary. Any bonus for a fiscal year will be paid within 21/2 months after the close of that fiscal year, but only if you are still employed by the Company at the time of payment. The determinations of the Board of Directors with respect to your bonus will be final and binding.

3. **Employee Benefits**. You will remain eligible to participate in a number of Company-sponsored benefits. We currently offer a flexible vacation policy, which does not limit the amount of vacation time that employees may take, provided that job performance remains acceptable. This policy is subject to change from time to time at the Company's discretion. You acknowledge no vacation accrues under the flexible vacation policy, and therefore there is no unused vacation to be paid out upon termination.

4. **Stock Options**. Subject to the approval of the Company's Board of Directors, you will be granted an option to purchase 1,210,000 shares (the "**Option Shares**") of the Company's Common Stock (the "**Option**"). The exercise price per share shall be equal to the fair market

value per share on the date the Option is granted, as determined by the Company's Board of Directors. The Option will be subject to the terms and conditions applicable to options granted under the Company's 2016 Stock Plan (the "**Plan**") and the applicable Stock Option Agreement. You will vest in 1/48th of the Option Shares for each month of continuous service measured from December 17, 2019, as described in the applicable Stock Option Agreement. If your employment ends a result of an Involuntary Termination more than three (3) months prior to a Change in Control, you will immediately vest in the number of Option Shares in which you would have vested had you provided six (6) additional months of continuous service. In addition, you will immediately vest with respect to any remaining unvested Option Shares, if your services with the Company or the acquiring company ends as a result of an Involuntary Termination (I) in connection with or within three (3) months prior to the date of a Change in Control or (II) within eighteen (18) months following the effective date of such Change in Control; provided that if the successor-in-interest to the Company offers a service relationship to you on terms that would not constitute Resignation for Good Reason hereunder then your employment shall be deemed to not have terminated in connection with such Change in Control.

5. **Severance**.

(a) **General**. If you are subject to an Involuntary Termination, then you will be entitled to the benefits described in this Section 5. However, this Section 5 will not apply unless you (i) have returned all Company property in your possession, (ii) have resigned as a member of the Board of Directors of the Company and all of its subsidiaries, to the extent applicable, and (iii) have executed a general release of all claims that you may have against the Company or persons affiliated with the Company. You must execute and return the release on or before the date specified by the Company in the prescribed form (the "**Release Deadline**"). The Release Deadline will in no event be later than 50 days after your Separation. If you fail to return the release on or before the Release Deadline, or if you revoke the release, then you will not be entitled to the benefits described in this Section 5.

(b) **Salary Continuation**. If you are subject to an Involuntary Termination, then the Company will continue to pay your base salary for a period of six (6) months after your Separation. Your base salary will be paid at the rate in effect at the time of your Separation and in accordance with the Company's standard payroll procedures. The salary continuation payments will commence within sixty (60) days after your Separation and, once they commence, will include any unpaid amounts accrued from the date of your Separation. However, if the sixty (60)-day period described in the preceding sentence spans two calendar years, then the payments will in any event begin in the second calendar year.

(c) **Prorated Bonus**. If you are subject to an Involuntary Termination, then you will be entitled to a prorated portion of your target bonus, based on the number of days you are employed by the Company during the fiscal year in which you are subject to the Involuntary Termination. The bonus will be paid to you within sixty (60) days after your Separation, however, if the sixty (60)-day period spans two calendar years, then the payments will in any event begin in the second calendar year.

(d) **COBRA**. If you are subject to an Involuntary Termination and you elect to continue your health insurance coverage under the Consolidated Omnibus Budget

Reconciliation Act ("**COBRA**") following your Separation, then the Company will pay the same portion of your monthly premium under COBRA as it pays for active employees until the earliest of (i) the close of the six (6) month period following your Separation, (ii) the expiration of your continuation coverage under COBRA or (iii) the date when you become eligible for substantially equivalent health insurance coverage in connection with new employment or self-employment.

6. **Proprietary Information and Inventions Agreement**. The Proprietary Information and Inventions Agreement that you signed on September 19, 2016 will remain in full force and effect.

7. **Employment Relationship**. Employment with the Company is for no specific period of time. Your employment with the Company will be "**at will,**" meaning that either you or the Company may terminate your employment at any time and for any reason, with or without cause. Any contrary representations that may have been made to you are superseded by this letter agreement. This is the full and complete agreement between you and the Company on this term. Although your job duties, title, compensation and benefits, as well as the Company's personnel policies and procedures, may change from time to time, the "**at will**" nature of your employment may only be changed in an express written agreement signed by you and a duly authorized officer of the Company (other than you).

During the term of your employment, you shall devote your business energies, interest, abilities and productive time to the proper and efficient performance of your duties with the Company. You may serve as a director on the Board of Directors of other companies and/or engage in other professional activities that you disclose in writing in advance to, and are approved by, the Company's Board of Directors.

8. **Tax Matters**.

(a) **Withholding**. All forms of compensation referred to in this letter agreement are subject to reduction to reflect applicable withholding and payroll taxes and other deductions required by law.

(b) **Section 409A**. For purposes of Section 409A of the Internal Revenue Code of 1986, as amended (the "**Code**"), each salary continuation payment under Section 5(b) is hereby designated as a separate payment. If the Company determines that you are a "**specified employee**" under Section 409A(a)(2)(B)(i) of the Code at the time of your Separation, then (i) the salary continuation payments under Section 5(b), to the extent that they are subject to Section 409A of the Code, will commence on the first business day following (A) expiration of the six-month period measured from your Separation or (B) the date of your death and (ii) the installments that otherwise would have been paid prior to such date will be paid in a lump sum when the salary continuation payments commence

(c) **Tax Advice**. You are encouraged to obtain your own tax advice regarding your compensation from the Company. You agree that the Company does not have a duty to design its compensation policies in a manner that minimizes your tax liabilities, and you will not make any claim against the Company or its Board of Directors related to tax liabilities arising from your compensation.

9. **Interpretation, Amendment and Enforcement**. This letter agreement supersedes and replaces your prior offer letter with the Company, signed on September 19, 2016 and any additional prior agreements, representations or understandings (whether written, oral, implied or otherwise) between you and the Company and constitutes the complete agreement between you and the Company regarding the subject matter set forth herein. This letter agreement may not be amended or modified, except by an express written agreement signed by both you and a duly authorized officer of the Company. The terms of this letter agreement and the resolution of any disputes as to the meaning, effect, performance or validity of this letter agreement or arising out of, related to, or in any way connected with, this letter agreement, your employment with the Company or any other relationship between you and the Company (the "**Disputes**") will be governed by California law, excluding laws relating to conflicts or choice of law. You and the Company submit to the exclusive personal jurisdiction of the federal and state courts located in San Diego, California in connection with any Dispute or any claim related to any Dispute.

10. **Definitions**. The following terms shall have the meaning set forth below wherever they are used in this letter agreement:

"**Cause**" shall mean any of the following: (i) your commission of any act that would constitute a felony or a crime involving fraud, dishonesty, or moral turpitude under the laws of the United States or any state thereof; (ii) your intentional violation of any federal or state law or regulation applicable to the Company's business that results in material harm to the Company or its operations; (iii) your material violation of any agreement between you and the Company, any Company policy, or any statutory duty owed to the Company or its stockholders that results in material harm to the Company or its operations; (iv) an act of gross misconduct or of clear and material insubordination that results in material harm to the Company or its operations; or (v) your persistent neglect of job duties that results in material harm to the Company or its operations. If conduct constituting "**Cause**" under clause (iii), (iv) or (v) above is reasonably susceptible of cure as determined by the Board of Directors in good faith, Cause shall not exist unless you are first given thirty (30) days' written notice to cure.

"**Change in Control**" means (a) the consummation of a merger or consolidation of the Company with or into another entity, (b) a sale of all or substantially all of the assets of the Company or (c) the acquisition by a third party in a single transaction or a series of related transactions of more than 50% of the Company's outstanding capital stock. The foregoing notwithstanding, a merger or consolidation of the Company does not constitute a "**Change in Control**" if immediately after the merger or consolidation a majority of the voting power of the capital stock of the continuing or surviving entity, or any direct or indirect parent corporation of the continuing or surviving entity, will be owned by the persons who were the Company's stockholders immediately prior to the merger or consolidation in substantially the same proportions as their ownership of the voting power of the Company's capital stock immediately prior to the merger or consolidation.

"**Involuntary Termination**" means either (a) your Termination Without Cause or (b) your Resignation for Good Reason.

"**Resignation for Good Reason**" means a Separation as a result of your resignation within twelve (12) months after one of the following conditions has come into existence without your consent:

(a) A reduction in your base salary or target bonus by more than 10%, but only if the same reduction applies to all of the Company's then serving executives;

(b) A material diminution of your titles, authority, duties or responsibilities; or

(c) A relocation of your principal workplace by more than fifty (50) miles.

A Resignation for Good Reason will not be deemed to have occurred unless you give the Company written notice of the condition within ninety (90) days after the condition comes into existence and the Company fails to remedy the condition within thirty (30) days after receiving your written notice. For the avoidance of doubt, an acquisition of the Company without a corresponding change in authority, duties or responsibilities shall not constitute grounds for a "**Resignation for Good Reason.**"

"**Separation**" means a "**separation from service,**" as defined in the regulations under Section 409A of the Code.

"**Termination Without Cause**" means a Separation as a result of a termination of your employment by the Company without Cause, provided you are willing and able to continue performing services within the meaning of Treasury Regulation 1.409A-1(n)(1).

* * * * *

We look forward to continuing our successful employment relationship with you. You may indicate your agreement with these terms by signing and dating this letter agreement and returning it to Human Resources.

Very truly yours,

SINGULAR GENOMICS SYSTEMS, INC.

By: /s/ Andrew Spaventa
Andrew Spaventa
Chief Executive Officer

I have read and accept this employment offer:

/s/ Eli Glezer
Eli Glezer

Dated: 1/11/2020

September 25, 2019

Dalen Meeter

Dear Dalen:

SINGULAR GENOMICS SYSTEMS, INC. (the "Company") is pleased to offer you employment on the following terms:

1. **Position**. Your initial title will be Vice President, Finance. This is a full-time position. While you render services to the Company, you will not engage in any other employment, consulting or other business activity (whether full-time or part-time) that would create a conflict of interest with the Company. By signing this letter agreement, you confirm to the Company that you have no contractual commitments or other legal obligations that would prohibit you from performing your duties for the Company. Your anticipated start date will be a mutually agreed-upon date.

Cash Compensation. The Company will pay you a starting salary at the rate of $265,000 per year, payable in accordance with the Company's standard payroll schedule. This salary will be subject to adjustment pursuant to the Company's employee compensation policies in effect from time to time. You will also be eligible to participate in the Company's annual compensation review process which generally occurs in the first quarter of each year. Any adjustments to your salary at this time will be based on your individual performance and available funding and will not be prorated based on your start date. In addition, you will receive a one-time signing bonus of $20,000 (the "Signing Bonus") on your employment start date. Should you resign from the Company or be terminated by the Company with or without Cause within one (1) year from your employment start date, you will be required to repay the full amount of the Signing Bonus to the Company.

Annual Discretionary Bonus Plan. As a regular employee of the Company, you will be eligible to participate in the Company's Annual Discretionary Bonus Plan (the "Bonus Plan") beginning in 2020 at a rate of 20% of your eligible earnings. This Bonus Plan is based on a combination of individual and company performance results and requires you to be employed and in good standing on the payout date which is generally within the first quarter of the following year.

Indemnification: In connection with your employment, the Company will enter into its standard Indemnification Agreement with you, which provides for indemnification and the advancement of legal expenses.

Employee Benefits. As a regular employee of the Company, you will be eligible to participate in a number of Company-sponsored benefits. We currently offer a flexible vacation policy, which allows eligible employees to take a flexible amount of vacation time, subject to manager approval and scheduling conflicts and provided that job performance remains acceptable. This policy is subject to change from time to time at the Company's discretion. You acknowledge no vacation time accrues under the flexible vacation policy, and therefore there is no unused vacation to be paid out upon termination.

2. **Stock Options**. Subject to the approval of the Company's Board of Directors, you will be granted an option to purchase 160,000 shares of the Company's Common Stock (the "Option"). The exercise price per share shall be equal to the fair market value per share on the date the Option is granted, as determined by the Company's Board of Directors. The Option will be subject to the terms and conditions applicable to options granted under the Company's 2016 Stock Plan (the "Plan") and the applicable Stock Option Agreement. You will vest in 12/48ths of the Option shares after 12 months of continuous service, and you will vest in 1/48th of the Option shares for each month of continuous service thereafter, as described in the applicable Stock Option Agreement.

3. **Proprietary Information and Inventions Agreement**. Like all Company employees, you will be required, as a condition of your employment with the Company, to sign and comply with the Company's standard Proprietary Information and Inventions Agreement, a copy of which is attached hereto as **Exhibit A**.

4. **Employment Relationship**. Employment with the Company is for no specific period of time. Your employment with the Company will be "at will," meaning that either you or the Company may terminate your employment at any time and for any reason, with or without cause. Any contrary representations that may have been made to you are superseded by this letter agreement. This is the full and complete agreement between you and the Company on this term. Although your job duties, title, compensation and benefits, as well as the Company's personnel policies and procedures, may change from time to time, the "at will" nature of your employment may only be changed in an express written agreement signed by you and a duly authorized officer of the Company (other than you).

5. **Tax Matters**.

(a) **Withholding**. All forms of compensation referred to in this letter agreement are subject to reduction to reflect applicable withholding and payroll taxes and other deductions required by law.

(b) **Tax Advice**. You are encouraged to obtain your own tax advice regarding your compensation from the Company. You agree that the Company does not have a duty to design its compensation policies in a manner that minimizes your tax liabilities, and you will not make any claim against the Company or its Board of Directors related to tax liabilities arising from your compensation.

6. **Interpretation, Amendment and Enforcement**. This letter agreement and Exhibit A supersede and replace any prior agreements, representations or understandings (whether written, oral, implied or otherwise) between you and the Company and constitute the complete agreement between you and the Company regarding the subject matter set forth herein. This letter agreement may not be amended or modified, except by an express written agreement signed by both you and a duly authorized officer of the Company. The terms of this letter agreement and the resolution of any disputes as to the meaning, effect, performance or validity of this letter agreement or arising

out of, related to, or in any way connected with, this letter agreement, your employment with the Company or any other relationship between you and the Company (the "Disputes") will be governed by the laws of the state in which you are employed with the Company, excluding laws relating to conflicts or choice of law. You and the Company submit to the exclusive personal jurisdiction of the federal and state courts located in the state in which you are employed with the Company in connection with any Dispute or any claim related to any Dispute.

* * * * *

We hope that you will accept our offer to join the Company. You may indicate your agreement with these terms and accept this offer by signing and dating both the enclosed duplicate original of this letter agreement and the enclosed Proprietary Information and Inventions Agreement and returning them to me. This offer, if not accepted, will expire at the close of business on September 30, 2019. As required by law, your employment with the Company is contingent upon your providing legal proof of your identity and authorization to work in the United States. Your employment is also contingent upon your starting work with the Company on or before your agreed start date, as well as the successful completion of a background check to the Company's satisfaction.

If you have any questions, please e-mail me at .

Very truly yours,

SINGULAR GENOMICS SYSTEMS, INC.

By: /s/ Andrew Spaventa
Andrew Spaventa,
Chief Executive Officer

I have read and accept this employment offer:

/s/ Dalen Meeter
Dalen Meeter

Dated: 9/25/2019

LOAN AND SECURITY AGREEMENT

THIS LOAN AND SECURITY AGREEMENT (this "**Agreement**") dated as of November 19, 2019 (the "**Effective Date**") between SILICON VALLEY BANK, a California corporation ("**Bank**"), and SINGULAR GENOMICS SYSTEMS, INC., a Delaware corporation ("**Borrower**"), provides the terms on which Bank shall lend to Borrower and Borrower shall repay Bank. The parties agree as follows:

1. ACCOUNTING AND OTHER TERMS

1.1 Accounting terms not defined in this Agreement shall be construed following GAAP. Calculations and determinations must be made following GAAP. Capitalized terms not otherwise defined in this Agreement shall have the meanings set forth in Section 13. All other terms contained in this Agreement, unless otherwise indicated, shall have the meanings provided by the Code to the extent such terms are defined therein.

2. LOAN AND TERMS OF PAYMENT

2.1 Promise to Pay. Borrower hereby unconditionally promises to pay Bank the outstanding principal amount of all Credit Extensions and accrued and unpaid interest thereon as and when due in accordance with this Agreement.

2.1.1 **Growth Capital Loan Facility**.

(a) Availability. Subject to the terms and conditions of this Agreement, Bank agrees to make advances to Borrower (each a "**Growth Capital Advance**" and collectively the "**Growth Capital Advances**"), from time to time, prior to the Growth Capital Commitment Termination Date, in an aggregate amount not to exceed the Growth Capital Loan Commitment. After repayment, no Growth Capital Advance may be reborrowed.

(i) Subject to the terms and conditions of this Agreement, Two Million Five Hundred Thousand Dollars ($2,500,000) of the Growth Capital Loan Commitment shall be advanced to Borrower on or about the Effective Date (the "**First Tranche**").

(ii) An additional Seven Million Five Hundred Thousand Dollars ($7,500,000) of the Growth Capital Loan Commitment (the "**Second Tranche**") shall be available through the Growth Capital Commitment Termination Date. Each Growth Capital Advance under the Second Tranche must be in an amount that is a multiple of Two Million Five Hundred Thousand Dollars ($2,500,000).

(iii) The remaining Five Million Dollars ($5,000,000) of the Growth Capital Loan Commitment (the "**Third Tranche**") shall be available for the period beginning on October 1, 2020 through the Growth Capital Commitment Termination Date in one (1) Advance for the full amount, provided Borrower achieves the Third Tranche Milestone. Funds will be available under the Third Tranche as soon as Borrower delivers to Bank evidence satisfactory to Bank in its reasonable discretion that Borrower has achieved the Third Tranche Milestone.

(b) Repayment of Growth Capital Advances.

(i) Interest-Only Payments. For each Growth Capital Advance, Borrower shall make monthly payments of interest-only commencing on the first (1st) Business Day of the first (1st) month following the month in which the Funding Date occurs with respect to such Growth Capital Advance and continuing thereafter during the Interest-Only Period, on the first (1st) Business Day of each successive month.

(ii) Principal and Interest Payments. For each Growth Capital Advance outstanding as of the last day of the Interest-Only Period, Borrower shall make (i) twenty-four (24) consecutive equal monthly payments of principal commencing on the first (1st) Business Day of the first (1st) month after the Interest-Only Period (the "**Conversion Date**"), in amounts that would fully amortize the applicable Growth Capital Advance, as of the Conversion Date, over the Repayment Period plus (ii) monthly payments of accrued and unpaid interest. The Final Payment and all unpaid principal and accrued and unpaid interest on each Growth Capital Advance is due and payable in full on the Growth Capital Maturity Date.

(c) Voluntary Prepayment. Borrower shall have the option to prepay all Growth Capital Advances in full, provided Borrower (i) shall provide written notice to Bank of its election to prepay the Growth Capital Advances at least five (5) Business Days prior to such prepayment and (ii) pays, on the date of such prepayment, (A) all outstanding principal and accrued but unpaid interest, plus (B) the Prepayment Fee, plus (C) the Final Payment, plus (D) the Unused Line Fee (if any), plus (E) all other sums, including Bank Expenses, if any, that shall have become due and payable.

(d) Mandatory Prepayment Upon an Acceleration. If the Growth Capital Advances are accelerated by Bank following the occurrence and during the continuance of an Event of Default, Borrower shall immediately pay to Bank an amount equal to the sum of (i) all outstanding principal and accrued but unpaid interest, plus (ii) the Prepayment Fee, plus (iii) the Final Payment, plus (iv) the Unused Line Fee (if any), and (iv) all other sums, including Bank Expenses, if any, that shall have become due and payable.

2.2 Payment of Interest on the Credit Extensions.

(a) Interest Rate. Subject to Section 2.2(b), the principal amount outstanding for each Growth Capital Advance shall accrue interest at a floating per annum rate equal to the greater of (i) sixty-five one-hundredths of one percent (0.65%) above the Prime Rate or (ii) five and nine-tenths of one percent (5.90%), which shall be payable monthly in accordance with Section 2.2(d) below.

(b) Default Rate. Immediately upon the occurrence and during the continuance of an Event of Default, Obligations shall bear interest at a rate per annum which is five percentage points (5.00%) above the rate that is otherwise applicable thereto (the "**Default Rate**"). Fees and expenses which are required to be paid by Borrower pursuant to the Loan Documents (including, without limitation, Bank Expenses) but are not paid when due shall bear interest until paid at a rate equal to the highest rate applicable to the Obligations. Payment or acceptance of the increased interest rate provided in this Section 2.2(b) is not a permitted alternative to timely payment and shall not constitute a waiver of any Event of Default or otherwise prejudice or limit any rights or remedies of Bank.

(c) Adjustment to Interest Rate. Changes to the interest rate of any Credit Extension based on changes to the Prime Rate shall be effective on the effective date of any change to the Prime Rate and to the extent of any such change.

(d) Payment; Interest Computation. Interest is payable monthly on the first (1st) calendar day of each month and shall be computed on the basis of a 360-day year for the actual number of days elapsed. In computing interest, (i) all payments received after 12:00 p.m. Pacific time on any day shall be deemed received at the opening of business on the next Business Day, and (ii) the date of the making of any Credit Extension shall be included and the date of payment shall be excluded; provided, however, that if any Credit Extension is repaid on the same day on which it is made, such day shall be included in computing interest on such Credit Extension.

2.3 Fees. Borrower shall pay to Bank the following:

(a) Unused Line Fee. A fee equal to one percent (1.00%) of the undrawn portion of the Second Tranche (the "**Unused Line Fee**") on the Growth Capital Commitment Termination Date, or, to the extent applicable, upon prepayment in accordance with Section 2.1.1;

(b) Prepayment Fee. The Prepayment Fee, when due hereunder;

(c) Final Payment. The Final Payment, when due hereunder;

(d) Good Faith Deposit. Borrower has paid to Bank a good faith deposit of Twenty Thousand Dollars ($20,000) (the "**Good Faith Deposit**") to initiate Bank's due diligence review process, which amount shall be applied to the Bank Expenses; and

(e) Bank Expenses. All Bank Expenses (including reasonable attorneys' fees and expenses for documentation and negotiation of this Agreement) incurred through and after the Effective Date, when due (or, if no stated due date, upon demand by Bank).

(f) Fees Fully Earned. Unless otherwise provided in this Agreement or in a separate writing by Bank, Borrower shall not be entitled to any credit, rebate, or repayment of any fees earned by Bank pursuant to this Agreement notwithstanding any termination of this Agreement or the suspension or termination of Bank's obligation to make loans and advances hereunder. Bank may deduct amounts owing by Borrower under the clauses of this Section 2.3 pursuant to the terms of Section 2.4(c). Bank shall provide Borrower written notice of deductions made from the Designated Deposit Account pursuant to the terms of the clauses of this Section 2.3.

2.4 Payments; Application of Payments; Debit of Accounts.

(a) All payments to be made by Borrower under any Loan Document shall be made in immediately available funds in Dollars, without setoff or counterclaim, before

12:00 p.m. Pacific time on the date when due. Payments of principal and/or interest received after 12:00 p.m. Pacific time are considered received at the opening of business on the next Business Day. When a payment is due on a day that is not a Business Day, the payment shall be due the next Business Day, and additional fees or interest, as applicable, shall continue to accrue until paid.

(b) Bank has the exclusive right to determine the order and manner in which all payments with respect to the Obligations may be applied. Borrower shall have no right to specify the order or the accounts to which Bank shall allocate or apply any payments required to be made by Borrower to Bank or otherwise received by Bank under this Agreement when any such allocation or application is not specified elsewhere in this Agreement.

(c) Bank may debit any of Borrower's deposit accounts, including the Designated Deposit Account, for principal and interest payments or any other amounts Borrower owes Bank when due. These debits shall not constitute a set-off.

2.5 Withholding. Payments received by Bank from Borrower under this Agreement will be made free and clear of and without deduction for any and all present or future taxes, levies, imposts, duties, deductions, withholdings, assessments, fees or other charges imposed by any Governmental Authority (including any interest, additions to tax or penalties applicable thereto). Specifically, however, if at any time any Governmental Authority, applicable law, regulation or international agreement requires Borrower to make any withholding or deduction from any such payment or other sum payable hereunder to Bank, Borrower hereby covenants and agrees that the amount due from Borrower with respect to such payment or other sum payable hereunder will be increased to the extent necessary to ensure that, after the making of such required withholding or deduction, Bank receives a net sum equal to the sum which it would have received had no withholding or deduction been required, and Borrower shall pay the full amount withheld or deducted to the relevant Governmental Authority. Borrower will, upon request, furnish Bank with proof reasonably satisfactory to Bank indicating that Borrower has made such withholding payment; provided, however, that Borrower need not make any withholding payment if the amount or validity of such withholding payment is contested in good faith by appropriate and timely proceedings and as to which payment in full is bonded or reserved against by Borrower. The agreements and obligations of Borrower contained in this Section 2.5 shall survive the termination of this Agreement.

3. CONDITIONS OF LOANS

3.1 Conditions Precedent to Initial Credit Extension. Bank's obligation to make the initial Credit Extension is subject to the condition precedent that Bank shall have received, in form and substance satisfactory to Bank, such documents, and completion of such other matters, as Bank may reasonably deem necessary or appropriate, including, without limitation:

(a) duly executed original signatures to the Loan Documents;

(b) a duly executed original signature to the Warrant;

(c) duly executed signatures to any Control Agreements (including without limitation a Control Agreement with respect to the UBS Account);

(d) the Operating Documents and long-form good standing certificates of Borrower and its Subsidiaries certified by the Secretary of State (or equivalent agency) of Borrower's and such Subsidiaries' jurisdiction of organization or formation and each jurisdiction in which Borrower and each Subsidiary is qualified to conduct business, each as of a date no earlier than thirty (30) days prior to the Effective Date;

(e) duly executed signatures to the completed Borrowing Resolutions for Borrower;

(f) certified copies, dated as of a recent date, of financing statement searches, as Bank may request, accompanied by written evidence (including any UCC termination statements) that the Liens indicated in any such financing statements either constitute Permitted Liens, or have been, or in connection with the initial Credit Extension will be, terminated or released;

(g) the Perfection Certificate executed by Borrower;

(h) a copy of Borrower's Registration Rights Agreement and/or Investors' Rights Agreement and any amendments thereto;

(i) evidence satisfactory to Bank that the insurance policies and endorsements required by Section 6.5 hereof are in full force and effect, together with appropriate evidence showing lender loss payable and/or additional insured clauses and cancellation notice to Bank (or endorsements reflecting the same) in favor of Bank; and

(b) payment of the fees and Bank Expenses then due as specified in Section 2.3 hereof.

3.2 Conditions Precedent to all Credit Extensions. Bank's obligations to make each Credit Extension, including the initial Credit Extension, are subject to the following conditions precedent:

(a) timely receipt of an executed Payment/Advance Form;

(b) the representations and warranties in this Agreement shall be true, accurate, and complete in all material respects on the date of the Payment/Advance Form and on the Funding Date of each Credit Extension; provided, however, that such materiality qualifier shall not be applicable to any representations and warranties that already are qualified or modified by materiality in the text thereof; and provided, further that those representations and warranties expressly referring to a specific date shall be true, accurate and complete in all material respects as of such date, and no Event of Default shall have occurred and be continuing or result from the Credit Extension. Each Credit Extension is Borrower's representation and warranty on that date that the representations and warranties in this Agreement remain true, accurate, and complete in all material respects; provided, however, that such materiality qualifier shall not be applicable to any representations and warranties that already are qualified or modified by materiality in the text thereof; and provided, further that those representations and warranties expressly referring to a specific date shall be true, accurate and complete in all material respects as of such date; and

(c) Bank determines to its satisfaction that there has not been a Material Adverse Change.

3.3 Covenant to Deliver.

(a) Except as otherwise provided in Section 3.3(b), Borrower agrees to deliver to Bank each item required to be delivered to Bank under this Agreement as a condition precedent to any Credit Extension. Borrower expressly agrees that a Credit Extension made prior to the receipt by Bank of any such item shall not constitute a waiver by Bank of Borrower's obligation to deliver such item, and any such Credit Extension in the absence of a required item shall be made in Bank's sole discretion.

(b) Unless otherwise provided in writing, within forty-five (45) days after the Effective Date, Bank shall have received, in form and substance satisfactory to Bank: a landlord's consent in favor of Bank for each of Borrower's locations by the respective landlord thereof, together with the duly executed original signatures thereto.

3.4 Procedures for Borrowing. Subject to the prior satisfaction of all other applicable conditions to the making of a Credit Extension set forth in this Agreement, to obtain a Credit Extension, Borrower shall notify Bank (which notice shall be irrevocable) by electronic mail, facsimile, or telephone by 12:00 p.m. Pacific time on the Funding Date of the Credit Extension. Together with any such electronic or facsimile notification, Borrower shall deliver to Bank by electronic mail or facsimile a completed Payment/Advance Form executed by an Authorized Signer. Bank may rely on any telephone notice given by a person who Bank believes is an Authorized Signer. Bank shall credit Credit Extensions to the Designated Deposit Account. Bank may make Credit Extensions under this Agreement based on instructions from an Authorized Signer or without instructions if the Credit Extensions are necessary to meet Obligations that have become due.

4. CREATION OF SECURITY INTEREST

4.1 Grant of Security Interest. Borrower hereby grants Bank, to secure the payment and performance in full of all of the Obligations, a continuing security interest in, and pledges to Bank, the Collateral, wherever located, whether now owned or hereafter acquired or arising, and all proceeds and products thereof.

Borrower acknowledges that it previously has entered, and/or may in the future enter, into Bank Services Agreements with Bank. Regardless of the terms of any Bank Services Agreement, Borrower agrees that any amounts Borrower owes Bank thereunder shall be deemed to be Obligations hereunder and that it is the intent of Borrower and Bank to have all such Obligations secured by the first priority perfected security interest in the Collateral granted herein (subject only to Permitted Liens that may have superior priority to Bank's Lien in this Agreement).

If this Agreement is terminated, Bank's Lien in the Collateral shall continue until the Obligations (other than inchoate indemnity obligations) are repaid in full in cash, and at such time, Bank shall, at Borrower's sole cost and expense, terminate its security interest in the Collateral and all rights therein shall revert to Borrower and for the avoidance of doubt, all

Borrower's obligations pursuant to Sections 6 and 7 herein shall have terminated). In the event (x) all Obligations (other than inchoate indemnity obligations), except for Bank Services, are satisfied in full, and (y) this Agreement is terminated, Bank shall terminate the security interest granted herein upon Borrower providing cash collateral acceptable to Bank in its good faith business judgment for Bank Services, if any. In the event such Bank Services consist of outstanding Letters of Credit, Borrower shall provide to Bank cash collateral in an amount equal to (x) if such Letters of Credit are denominated in Dollars, then at least one hundred five percent (105.0%); and (y) if such Letters of Credit are denominated in a Foreign Currency, then at least one hundred ten percent (110.0%), of the Dollar Equivalent of the face amount of all such Letters of Credit plus all interest, fees, and costs due or to become due in connection therewith (as estimated by Bank in its good faith business judgment), to secure all of the Obligations relating to such Letters of Credit.

4.2 Priority of Security Interest. Borrower represents, warrants, and covenants that the security interest granted herein is and shall at all times continue to be a first priority perfected security interest in the Collateral (subject only to Permitted Liens that are permitted pursuant to the terms of this Agreement to have superior priority to Bank's Lien under this Agreement). If Borrower shall acquire a commercial tort claim, Borrower shall promptly notify Bank in a writing signed by Borrower of the general details thereof and grant to Bank in such writing a security interest therein and in the proceeds thereof, all upon the terms of this Agreement, with such writing to be in form and substance reasonably satisfactory to Bank.

4.3 Authorization to File Financing Statements. Borrower hereby authorizes Bank to file financing statements, without notice to Borrower, with all appropriate jurisdictions to perfect or protect Bank's interest or rights hereunder, including a notice that any disposition of the Collateral, by Borrower or any other Person, shall be deemed to violate the rights of Bank under the Code. Such financing statements may indicate the Collateral as "**all assets of the Debtor**" or words of similar effect, or as being of an equal or lesser scope, or with greater detail, all in Bank's discretion.

5. REPRESENTATIONS AND WARRANTIES

Borrower represents and warrants as follows:

5.1 Due Organization, Authorization; Power and Authority. Borrower is duly existing and in good standing as a Registered Organization in its jurisdiction of formation and is qualified and licensed to do business and is in good standing in any jurisdiction in which the conduct of its business or its ownership of property requires that it be qualified except where the failure to do so could not reasonably be expected to have a material adverse effect on Borrower's business. In connection with this Agreement, Borrower has delivered to Bank a completed certificate signed by Borrower, entitled "**Perfection Certificate**". Borrower represents and warrants to Bank that (a) Borrower's exact legal name is that indicated on the Perfection Certificate and on the signature page hereof; (b) Borrower is an organization of the type, and is organized in the jurisdiction, set forth in the Perfection Certificate; (c) the Perfection Certificate accurately sets forth Borrower's organizational identification number or accurately states that Borrower has none; (d) the Perfection Certificate accurately sets forth Borrower's place of business, or, if more than one, its chief executive office as well as Borrower's mailing address (if

different than its chief executive office); (e) Borrower (and each of its predecessors) has not, in the past five (5) years, changed its jurisdiction of formation, organizational structure or type, or any organizational number assigned by its jurisdiction; and (f) all other information set forth on the Perfection Certificate pertaining to Borrower and each of its Subsidiaries is accurate and complete in all material respects (it being understood and agreed that Borrower may from time to time update certain information in the Perfection Certificate after the Effective Date to the extent permitted by one or more specific provisions in this Agreement). If Borrower is not now a Registered Organization but later becomes one, Borrower shall promptly notify Bank of such occurrence and provide Bank with Borrower's organizational identification number.

The execution, delivery and performance by Borrower of the Loan Documents to which it is a party have been duly authorized, and do not (i) conflict with any of Borrower's organizational documents, (ii) contravene, conflict with, constitute a default under or violate any material Requirement of Law, (iii) contravene, conflict with or violate any applicable order, writ, judgment, injunction, decree, determination or award of any Governmental Authority by which Borrower or any of its Subsidiaries or any of their property or assets may be bound or affected, (iv) require any action by, filing, registration, or qualification with, or Governmental Approval from, any Governmental Authority (except such Governmental Approvals that have already been obtained and are in full force and effect) or (v) conflict with, contravene, constitute a default or breach under, or result in or permit the termination or acceleration of, any material agreement by which Borrower is bound. Borrower is not in default under any agreement to which it is a party or by which it is bound in which the default could reasonably be expected to have a material adverse effect on Borrower's business.

5.2 Collateral. Borrower has good title to, rights in, and the power to transfer each item of the Collateral upon which it purports to grant a Lien hereunder, free and clear of any and all Liens except Permitted Liens. Borrower has no Collateral Accounts at or with any bank or financial institution other than Bank or Bank's Affiliates except for the Collateral Accounts described in the Perfection Certificate delivered to Bank in connection herewith and which Borrower has taken such actions as are necessary to give Bank a perfected security interest therein, pursuant to the terms of Section 6.6(c). The Accounts are bona fide, existing obligations of the Account Debtors.

The Collateral is not in the possession of any third party bailee (such as a warehouse) except as otherwise provided in the Perfection Certificate. None of the components of the Collateral shall be maintained at locations other than as provided in the Perfection Certificate or as permitted pursuant to Section 7.2.

All Inventory is in all material respects of good and marketable quality, free from material defects.

Borrower is the sole owner of the Intellectual Property which it owns or purports to own except for (a) non-exclusive licenses granted to its customers in the ordinary course of business, (b) over-the-counter software that is commercially available to the public, and (c) material Intellectual Property licensed to Borrower and noted on the Perfection Certificate. Each Patent which it owns or purports to own and which is material to Borrower's business is valid and enforceable, and no part of the Intellectual Property which Borrower owns or purports to own

and which is material to Borrower's business has been judged by a court or tribunal of competent jurisdiction to be invalid or unenforceable, in whole or in part, except for non-final, ordinary course office actions related to any United States or foreign Intellectual Property registration efforts. To the best of Borrower's knowledge, no claim has been made in writing alleging that any part of the Intellectual Property violates the rights of any third party except to the extent such claim would not reasonably be expected to have a material adverse effect on Borrower's business.

Except as noted on the Perfection Certificate, Borrower is not a party to, nor is it bound by, any Restricted License.

5.3 Litigation. Except as set forth on the Perfection Certificate (if any), there are no actions or proceedings pending or, to the knowledge of any Responsible Officer, threatened in writing by or against Borrower or any of its Subsidiaries involving more than Two Hundred Fifty Thousand Dollars ($250,000) individually or in the aggregate.

5.4 No Material Deviation in Financial Statements. All consolidated financial statements for Borrower and any of its Subsidiaries delivered to Bank fairly present in all material respects Borrower's consolidated financial condition and Borrower's consolidated results of operations for the period then ended. There has not been any material deterioration in Borrower's consolidated financial condition since the date of the most recent financial statements submitted to Bank.

5.5 Solvency. The fair salable value of Borrower's consolidated assets (including goodwill minus disposition costs) exceeds the fair value of Borrower's liabilities; Borrower is not left with unreasonably small capital after the transactions in this Agreement; and Borrower is able to pay its debts (including trade debts) as they mature.

5.6 Regulatory Compliance. Borrower is not an "**investment company**" or a company "**controlled**" by an "**investment company**" under the Investment Company Act of 1940, as amended. Borrower is not engaged as one of its important activities in extending credit for margin stock (under Regulations X, T and U of the Federal Reserve Board of Governors). Borrower (a) has complied in all material respects with all Requirements of Law, and (b) has not violated any Requirements of Law the violation of which could reasonably be expected to have a material adverse effect on its business. None of Borrower's or any of its Subsidiaries' properties or assets has been used by Borrower or any Subsidiary or, to the best of Borrower's knowledge, by previous Persons, in disposing, producing, storing, treating, or transporting any hazardous substance other than legally. Borrower and each of its Subsidiaries have obtained all consents, approvals and authorizations of, made all declarations or filings with, and given all notices to, all Governmental Authorities that are necessary to continue their respective businesses as currently conducted, except where the failure to do so could not reasonably be expected to have a material adverse effect on Borrower's business.

5.7 Subsidiaries; Investments. Borrower does not own any stock, partnership, or other ownership interest or other equity securities except for Permitted Investments.

5.8 Tax Returns and Payments; Pension Contributions. Borrower has timely filed (taking into account any extensions) all required tax returns and reports, and Borrower has timely paid all foreign, federal, state and local taxes, assessments, deposits and contributions owed by Borrower except (a) to the extent such taxes are being contested in good faith by appropriate proceedings promptly instituted and diligently conducted, so long as such reserve or other appropriate provision, if any, as shall be required in conformity with GAAP shall have been made therefor, or (b) if such taxes, assessments, deposits and contributions do not, individually or in the aggregate, exceed Twenty-Five Thousand Dollars ($25,000).

To the extent Borrower defers payment of any contested taxes, Borrower shall (i) notify Bank in writing of the commencement of, and any material development in, the proceedings, and (ii) post bonds or take any other steps required to prevent the Governmental Authority levying such contested taxes from obtaining a Lien upon any of the Collateral that is other than a "**Permitted Lien.**" Borrower is unaware of any claims or adjustments proposed for any of Borrower's prior tax years which could reasonably be expected to result in additional taxes becoming due and payable by Borrower in excess of Twenty-Five Thousand Dollars ($25,000). Borrower has paid all amounts necessary to fund all present pension, profit sharing and deferred compensation plans in accordance with their terms, and Borrower has not withdrawn from participation in, and has not permitted partial or complete termination of, or permitted the occurrence of any other event with respect to, any such plan which could reasonably be expected to result in any liability of Borrower, including any liability to the Pension Benefit Guaranty Corporation or its successors or any other governmental agency.

5.9 Use of Proceeds. Borrower shall use the proceeds of the Credit Extensions solely as working capital and to fund its general business requirements and not for personal, family, household or agricultural purposes.

5.10 Full Disclosure. No written representation, warranty or other statement of Borrower in any certificate or written statement given to Bank, as of the date such representation, warranty, or other statement was made, taken together with all such written certificates and written statements given to Bank, contains any untrue statement of a material fact or omits to state a material fact necessary to make the statements contained in the certificates or written statements, in light of the circumstances in which they were made, not misleading (it being recognized by Bank that the projections and forecasts provided by Borrower in good faith and based upon reasonable assumptions are not viewed as facts and that actual results during the period or periods covered by such projections and forecasts may differ from the projected or forecasted results).

5.11 Definition of "**Knowledge.**" For purposes of the Loan Documents, whenever a representation or warranty is made to Borrower's knowledge or awareness, to the "**best of**" Borrower's knowledge, or with a similar qualification, knowledge or awareness means the actual knowledge, after reasonable investigation, of any Responsible Officer.

6. AFFIRMATIVE COVENANTS

Borrower shall do all of the following:

6.1 Government Compliance.

(a) Maintain its and all its Subsidiaries' legal existence and good standing in their respective jurisdictions of formation and maintain qualification in each jurisdiction in which the failure to so qualify would reasonably be expected to have a material adverse effect on Borrower's business or operations. Borrower shall comply, and have each Subsidiary comply, in all material respects, with all laws, ordinances and regulations to which it is subject.

(b) Obtain all of the Governmental Approvals necessary for the performance by Borrower of its obligations under the Loan Documents to which it is a party and the grant of a security interest to Bank in the Collateral. Borrower shall promptly provide copies of any such obtained Governmental Approvals to Bank.

6.2 Financial Statements, Reports, Certificates. Provide Bank with the following:

(a) Monthly Financial Statements. As soon as available, but no later than thirty (30) days after the last day of each month, (i) a company prepared consolidated balance sheet, and income statement covering Borrower's consolidated operations for such month certified by a Responsible Officer and in a form acceptable to Bank, and (ii) monthly bank account statements for the UBS Account (collectively, the "**Monthly Financial Statements**");

(b) Monthly Compliance Certificate. Within thirty (30) days after the last day of each month and together with the Monthly Financial Statements, a duly completed Compliance Certificate signed by a Responsible Officer, certifying that as of the end of such month, Borrower was in full compliance with all of the terms and conditions of this Agreement, and setting forth calculations showing compliance with the financial covenants set forth in this Agreement and such other information as Bank may reasonably request;

(c) Annual Operating Budget and Financial Projections. Within thirty (30) days after to the end of each fiscal year of Borrower, (i) annual operating budgets (including income statements, balance sheets and cash flow statements, by month) for the upcoming fiscal year of Borrower, and (ii) annual financial projections for the following fiscal year (on a quarterly basis) as approved by Borrower's Board of Directors, together with any related business forecasts used in the preparation of such annual financial projections;

(d) Annual Audited Financial Statements. As soon as available, but no later than one hundred eighty (180) days after the last day of Borrower's fiscal year (for the avoidance of doubt, commencing with Borrower's fiscal year ending December 31, 2019), audited consolidated financial statements prepared under GAAP, consistently applied, together with an unqualified opinion (except the opinion may contain a qualification as to going concern relating solely to sufficient liquidity that is typical for venture backed companies) on the financial statements from an independent certified public accounting firm acceptable to Bank in its reasonable discretion;

(e) Other Statements. Within ten (10) days of delivery, copies of all statements, reports and notices made available to Borrower's security holders or to any holders of Subordinated Debt;

(f) SEC Filings. In the event that Borrower becomes subject to the reporting requirements under the Exchange Act, within five (5) days of filing, copies of all periodic and other reports, proxy statements and other materials filed by Borrower with the SEC, any Governmental Authority succeeding to any or all of the functions of the SEC or with any national securities exchange, or distributed to its shareholders, as the case may be. Documents required to be delivered pursuant to the terms hereof (to the extent any such documents are included in materials otherwise filed with the SEC) may be delivered electronically and if so delivered, shall be deemed to have been delivered on the date on which Borrower posts such documents, or provides a link thereto, on Borrower's website on the Internet at Borrower's website address; provided, however, Borrower shall promptly notify Bank in writing (which may be by electronic mail) of the posting of any such documents;

(g) Legal Action Notice. A prompt report of any legal actions pending or threatened in writing against Borrower or any of its Subsidiaries that could result in damages or costs to Borrower or any of its Subsidiaries of, individually or in the aggregate, Two Hundred Fifty Thousand Dollars ($250,000) or more; and

(h) Beneficial Ownership. Prompt written notice of any changes to the beneficial ownership information set out in sections 2.d through 2.g. of the Perfection Certificate (or any equivalent sections of any Perfection Certificate delivered after the Effective Date). Borrower understands and acknowledges that Bank relies on such true, accurate and up-to-date beneficial ownership information to meet Bank's regulatory obligations to obtain, verify and record information about the beneficial owners of its legal entity customers; and

(i) Other Financial Information. Other financial information reasonably requested by Bank.

6.3 Inventory; Returns. Keep all Inventory in good and marketable condition, free from material defects. Returns and allowances between Borrower and its Account Debtors shall follow Borrower's customary practices as they exist at the Effective Date. Borrower must promptly notify Bank of all returns, recoveries, disputes and claims that involve more than One Hundred Thousand Dollars ($100,000).

6.4 Taxes; Pensions. Timely file, and require each of its Subsidiaries to timely file, all required tax returns and reports (or file valid extensions thereof) and timely pay, and require each of its Subsidiaries to timely pay, all foreign, federal, state and local taxes, assessments, deposits and contributions owed by Borrower and each of its Subsidiaries, except for deferred payment of any taxes contested pursuant to the terms of Section 5.8 hereof, and shall deliver to Bank, on demand, appropriate certificates attesting to such payments, and pay all amounts necessary to fund all present pension, profit sharing and deferred compensation plans in accordance with their terms.

6.5 Insurance.

(a) Keep its business and the Collateral insured for risks and in amounts standard for companies in Borrower's industry, size and location and as Bank may reasonably request. Insurance policies shall be in a form, with financially sound and reputable insurance companies that are not Affiliates of Borrower, and in amounts that are satisfactory to Bank in its reasonable discretion. All property policies shall have a lender's loss payable endorsement showing Bank as lender loss payee. All liability policies shall show, or have endorsements showing, Bank as an additional insured. Bank shall be named as lender loss payee and/or additional insured with respect to any such insurance providing coverage in respect of any Collateral.

(b) Proceeds payable under any property policy are, at Bank's option, payable to Bank on account of the Obligations.

(c) At Bank's request, Borrower shall deliver certified copies of insurance policies and evidence of all premium payments. Each provider of any such insurance required under this Section 6.5 shall agree, by endorsement upon the policy or policies issued by it or by independent instruments furnished to Bank, that it will give Bank thirty (30) days prior written notice before any such policy or policies shall be materially altered or canceled. If Borrower fails to obtain insurance as required under this Section 6.5 or to pay any amount or furnish any required proof of payment to third persons and Bank, Bank may make all or part of such payment or obtain such insurance policies required in this Section 6.5, and take any action under the policies Bank deems prudent.

6.6 Operating Accounts.

(a) Maintain all of its and all of its Subsidiaries' operating accounts and excess cash with Bank or Bank's Affiliates, provided that Borrower shall be permitted to maintain the UBS Account so long as it is subject to a Control Agreement at all times pursuant to Section 6.6(c).

(b) Obtain all of its business credit cards and letters of credit exclusively from Bank.

(c) In addition to and without limiting the foregoing, provide Bank five (5) days prior written notice before establishing any Collateral Account at or with any bank or financial institution other than Bank or Bank's Affiliates. For each Collateral Account that Borrower at any time maintains, Borrower shall cause the applicable bank or financial institution (other than Bank) at or with which any Collateral Account is maintained to execute and deliver a Control Agreement or other appropriate instrument with respect to such Collateral Account to perfect Bank's Lien in such Collateral Account in accordance with the terms hereunder, which Control Agreements may not be terminated without the prior written consent of Bank. The provisions of the previous sentence shall not apply to deposit accounts exclusively used for payroll, payroll taxes and other employee wage and benefit payments to or for the benefit of Borrower's employees and identified to Bank by Borrower as such.

6.7 Reserved.

6.8 Protection of Intellectual Property Rights.

(a) (i) Use commercially reasonable efforts to protect, defend and maintain the validity and enforceability of its Intellectual Property material to Borrower's business; (ii) promptly advise Bank in writing of material infringements or any other event that could reasonably be expected to materially and adversely affect the value of its Intellectual Property; and (iii) not allow any Intellectual Property owned by Borrower and material to Borrower's business to be abandoned, forfeited or dedicated to the public without Bank's written consent.

(b) Provide written notice to Bank within ten (10) days of entering or becoming bound by any Restricted License (other than over-the-counter software that is commercially available to the public). Borrower shall take such steps as Bank requests in its reasonable discretion to obtain the consent of, or waiver by, any person whose consent or waiver is necessary for (i) any Restricted License to be deemed "**Collateral**" and for Bank to have a security interest in it that might otherwise be restricted or prohibited by law or by the terms of any such Restricted License, whether now existing or entered into in the future, and (ii) Bank to have the ability in the event of a liquidation of any Collateral to dispose of such Collateral in accordance with Bank's rights and remedies under this Agreement and the other Loan Documents.

6.9 Litigation Cooperation. From the date hereof and continuing through the termination of this Agreement, make available to Bank, without expense to Bank, Borrower and its officers, employees and agents and Borrower's books and records, to the extent that Bank may deem them reasonably necessary to prosecute or defend any third-party suit or proceeding instituted by or against Bank with respect to any Collateral or relating to Borrower.

6.10 Access to Collateral; Books and Records. Allow Bank, or its agents, at reasonable times, on three (3) Business Days' notice (provided no notice is required if an Event of Default has occurred and is continuing), to inspect the Collateral and audit and copy Borrower's Books. Such inspections or audits shall be conducted no more often than once every twelve (12) months unless an Event of Default has occurred and is continuing in which case such inspections and audits shall occur as often as Bank shall determine is necessary. The foregoing inspections and audits shall be at Borrower's expense. In the event Borrower and Bank schedule an audit more than eight (8) days in advance, and Borrower cancels or seeks to reschedule the audit with less than eight (8) days written notice to Bank, then (without limiting any of Bank's rights or remedies), Borrower shall pay Bank a fee of Two Thousand Dollars ($2,000) plus any out-of-pocket expenses incurred by Bank to compensate Bank for the anticipated costs and expenses of the cancellation or rescheduling.

6.11 Formation or Acquisition of Subsidiaries. Notwithstanding and without limiting the negative covenants contained in Sections 7.3 and 7.7 hereof, at the time that Borrower forms any direct or indirect Subsidiary or acquires any direct or indirect Subsidiary after the Effective Date (including, without limitation, pursuant to a Division), Borrower shall (a) cause such new Subsidiary to provide to Bank a joinder to this Agreement to cause such Subsidiary to become a co-borrower hereunder, together with such appropriate financing statements and/or Control Agreements, all in form and substance satisfactory to Bank (including being sufficient to grant Bank a first priority Lien (subject to Permitted Liens) in and to the

assets of such newly formed or acquired Subsidiary), (b) provide to Bank appropriate certificates and powers and financing statements, pledging all of the direct or beneficial ownership interest in such new Subsidiary, in form and substance satisfactory to Bank, and (c) provide to Bank all other documentation in form and substance satisfactory to Bank, which in its opinion is appropriate with respect to the execution and delivery of the applicable documentation referred to above. Any document, agreement, or instrument executed or issued pursuant to this Section 6.11 shall be a Loan Document.

6.12 Further Assurances. Execute any further instruments and take further action as Bank reasonably requests to perfect or continue Bank's Lien in the Collateral or to effect the purposes of this Agreement. Deliver to Bank, within five (5) days after the same are sent or received, copies of all correspondence, reports, documents and other filings with any Governmental Authority regarding compliance with or maintenance of Governmental Approvals or Requirements of Law or that could reasonably be expected to have a material effect on any of the Governmental Approvals or otherwise on the operations of Borrower or any of its Subsidiaries.

7. NEGATIVE COVENANTS

Borrower shall not do any of the following without Bank's prior written consent:

7.1 Dispositions. Convey, sell, lease, transfer, assign, or otherwise dispose of (including, without limitation, pursuant to a Division) (collectively, "**Transfer**"), or permit any of its Subsidiaries to Transfer, all or any part of its business or property, except for Transfers (a) of Inventory in the ordinary course of business; (b) of worn-out or obsolete Equipment that is, in the reasonable judgment of Borrower, no longer economically practicable to maintain or useful in the ordinary course of business of Borrower; (c) consisting of Permitted Liens and Permitted Investments; (d) consisting of the sale or issuance of any stock of Borrower permitted under Section 7.2 of this Agreement; (e) consisting of Borrower's use or transfer of money or Cash Equivalents in a manner that is not prohibited by the terms of this Agreement or the other Loan Documents; and (f) of non-exclusive licenses for the use of the property of Borrower or its Subsidiaries in the ordinary course of business.

7.2 Changes in Business, Management, Control or Business Locations.

(a) Engage in or permit any of its Subsidiaries to engage in any business other than the businesses currently engaged in by Borrower and such Subsidiary, as applicable, or reasonably related thereto; (b) liquidate or dissolve; (c) fail to provide notice to Bank of any Key Person departing from or ceasing to be employed by Borrower within five (5) days after his departure from Borrower; or (d) permit or suffer any Change in Control.

Borrower shall not, without at least thirty (30) days prior written notice to Bank: (1) add any new offices or business locations, including warehouses (unless such new offices or business locations contain less than One Hundred Thousand Dollars ($100,000) in Borrower's assets or property) or deliver any portion of the Collateral valued, individually or in the aggregate, in excess of Fifty Thousand Dollars ($50,000) to a bailee at a location other than to a bailee and at a location already disclosed in the Perfection Certificate, (2) change its jurisdiction of

organization, (3) change its organizational structure or type, (4) change its legal name, or (5) change any organizational number (if any) assigned by its jurisdiction of organization. If Borrower intends to add any new offices or business locations, including warehouses, containing in excess of One Hundred Thousand Dollars ($100,000) of Borrower's assets or property, then Borrower will first receive the written consent of Bank, and the landlord of any such new offices or business locations, including warehouses, shall execute and deliver a landlord consent in form and substance satisfactory to Bank. If Borrower intends to deliver any portion of the Collateral valued, individually or in the aggregate, in excess of Fifty Thousand Dollars ($50,000) to a bailee, and Bank and such bailee are not already parties to a bailee agreement governing both the Collateral and the location to which Borrower intends to deliver the Collateral, then Borrower will first receive the written consent of Bank, and such bailee shall execute and deliver a bailee agreement in form and substance satisfactory to Bank.

7.3 Mergers or Acquisitions. Merge or consolidate, or permit any of its Subsidiaries to merge or consolidate, with any other Person, or acquire, or permit any of its Subsidiaries to acquire, all or substantially all of the capital stock or property of another Person (including, without limitation, by the formation of any Subsidiary or pursuant to a Division). A Subsidiary may merge or consolidate into another Subsidiary or into Borrower.

7.4 Indebtedness. Create, incur, assume, or be liable for any Indebtedness, or permit any Subsidiary to do so, other than Permitted Indebtedness.

7.5 Encumbrance. Create, incur, allow, or suffer any Lien on any of its property, or assign or convey any right to receive income, including the sale of any Accounts, or permit any of its Subsidiaries to do so, except for Permitted Liens; permit any Collateral not to be subject to the first priority security interest granted herein; or enter into any agreement, document, instrument or other arrangement (except with or in favor of Bank) with any Person that directly or indirectly prohibits, or has the effect of prohibiting, Borrower from assigning, mortgaging, pledging, granting a security interest in or upon, or encumbering any of Borrower's Intellectual Property, except as is otherwise permitted in Section 7.1 hereof and the definition of "**Permitted Lien**" herein.

7.6 Maintenance of Collateral Accounts. Maintain any Collateral Account except pursuant to the terms of Section 6.6(c) hereof.

7.7 Distributions; Investments. (a) Pay any dividends or make any distribution or payment or redeem, retire or purchase any capital stock, provided that Borrower may (i) convert any of its convertible securities into other securities pursuant to the terms of such convertible securities or otherwise in exchange thereof, (ii) pay dividends solely in common stock, (iii) repurchase the stock of former employees or consultants pursuant to stock repurchase agreements so long as an Event of Default does not exist at the time of any such repurchase and would not exist after giving effect to any such repurchase, provided that the aggregate amount of all such repurchases does not exceed One Hundred Thousand Dollars ($100,000) per fiscal year, and (iv) pay reasonable and customary travel and business expense reimbursements or similar payments to its directors in the ordinary course of business; or (b) directly or indirectly make any Investment (including, without limitation, by the formation of any Subsidiary) other than Permitted Investments, or permit any of its Subsidiaries to do so.

7.8 Transactions with Affiliates. Directly or indirectly enter into or permit to exist any material transaction with any Affiliate of Borrower, except for (a) transactions that are in the ordinary course of Borrower's business, upon fair and reasonable terms that are no less favorable to Borrower than would be obtained in an arm's length transaction with a non-affiliated Person, (b) transactions constituting bona fide financing rounds for capital raising purposes, provided such financing transactions are approved by the Board of Directors and are not otherwise prohibited by this Agreement and (c) transaction of the type permitted pursuant to the terms of Section 7.7 and 7.9 hereof.

7.9 Subordinated Debt. (a) Make or permit any payment on any Subordinated Debt, except under the terms of the subordination, intercreditor, or other similar agreement to which such Subordinated Debt is subject, provided that the conversion of any Subordinated Debt into equity securities of Borrower shall be permitted, or (b) amend any provision in any document relating to the Subordinated Debt that would increase the amount thereof, provide for earlier or greater principal, interest, or other payments thereon, or adversely affect the subordination thereof to Obligations owed to Bank.

7.10 Compliance. Become an "**investment company**" or a company controlled by an "**investment company**", under the Investment Company Act of 1940, as amended, or undertake as one of its important activities extending credit to purchase or carry margin stock (as defined in Regulation U of the Board of Governors of the Federal Reserve System), or use the proceeds of any Credit Extension for that purpose; fail to (a) meet the minimum funding requirements of ERISA, (b) prevent a Reportable Event or Prohibited Transaction, as defined in ERISA, from occurring, or (c) comply with the Federal Fair Labor Standards Act, the failure of any of the conditions described in clauses (a) through (c) which could reasonably be expected to have a material adverse effect on Borrower's business; or violate any other law or regulation, if the violation could reasonably be expected to have a material adverse effect on Borrower's business, or permit any of its Subsidiaries to do so; withdraw or permit any Subsidiary to withdraw from participation in, permit partial or complete termination of, or permit the occurrence of any other event with respect to, any present pension, profit sharing and deferred compensation plan which could reasonably be expected to result in any liability of Borrower, including any liability to the Pension Benefit Guaranty Corporation or its successors or any other governmental agency.

8. EVENTS OF DEFAULT

Any one of the following shall constitute an event of default (an "**Event of Default**") under this Agreement:

8.1 Payment Default. Borrower fails to (a) make any payment of principal or interest on any Credit Extension when due, or (b) pay any other Obligations within three (3) Business Days after such Obligations are due and payable (which three (3) Business Day cure period shall not apply to payments due on the Growth Capital Maturity Date). During the cure period, the failure to make or pay any payment specified in clause (b) hereunder is not an Event of Default (but no Credit Extension will be made during the cure period);

8.2 Covenant Default.

(a) Borrower fails or neglects to perform any obligation in Sections 6.2, 6.4, 6.5, 6.6, 6.7, 6.10, or 6.11 or violates any covenant in Section 7; or

(b) Borrower fails or neglects to perform, keep, or observe any other term, provision, condition, covenant or agreement contained in this Agreement or any Loan Documents, and as to any default (other than those specified in this Section 8) under such other term, provision, condition, covenant or agreement that can be cured, has failed to cure the default within ten (10) days after the occurrence thereof; provided, however, that if the default cannot by its nature be cured within the ten (10) day period or cannot after diligent attempts by Borrower be cured within such ten (10) day period, and such default is likely to be cured within a reasonable time, then Borrower shall have an additional period (which shall not in any case exceed thirty (30) days) to attempt to cure such default, and within such reasonable time period the failure to cure the default shall not be deemed an Event of Default (but no Credit Extensions shall be made during such cure period). Cure periods provided under this section shall not apply, among other things, to financial covenants or any other covenants set forth in clause (a) above;

8.3 Material Adverse Change. A Material Adverse Change occurs;

8.4 Attachment; Levy; Restraint on Business.

(a) (i) The service of process seeking to attach, by trustee or similar process, any funds of Borrower or of any entity under the control of Borrower (including a Subsidiary) in excess of Fifty Thousand Dollars ($50,000), or (ii) a notice of lien or levy is filed against any of Borrower's assets by any Governmental Authority, and the same under subclauses (i) and (ii) hereof are not, within ten (10) days after the occurrence thereof, discharged or stayed (whether through the posting of a bond or otherwise); provided, however, no Credit Extensions shall be made during any ten (10) day cure period; or

(b) (i) any material portion of Borrower's assets is attached, seized, levied on, or comes into possession of a trustee or receiver, or (ii) any court order enjoins, restrains, or prevents Borrower from conducting all or any material part of its business;

8.5 Insolvency. (a) Borrower is unable to pay its debts (including trade debts) as they become due or otherwise becomes insolvent; (b) Borrower begins an Insolvency Proceeding; or an Insolvency Proceeding is begun against Borrower and not dismissed or stayed within thirty (30) days (but no Credit Extensions shall be made while any of the conditions described in clause (a) exist and/or until any Insolvency Proceeding is dismissed);

8.6 Other Agreements. There is, under any agreement to which Borrower or any Guarantor is a party with a third party or parties, (a) any default resulting in a right by such third party or parties, whether or not exercised, to accelerate the maturity of any Indebtedness in an amount individually or in the aggregate in excess of One Hundred Fifty Thousand Dollars ($150,000); or (b) any breach or default by Borrower or Guarantor, the result of which could have a material adverse effect on Borrower's or any Guarantor's business;

8.7 Judgments; Penalties. One or more fines, penalties or final judgments, orders, or decrees for the payment of money in an amount, individually or in the aggregate, of at least One Hundred Thousand Dollars ($100,000) (not covered by independent third-party insurance as to which liability has been accepted by such insurance carrier) shall be rendered against Borrower by any Governmental Authority, and the same are not, within ten (10) days after the entry, assessment or issuance thereof, discharged, satisfied, or paid, or after execution thereof stayed or bonded pending appeal, or such judgments are not discharged prior to the expiration of any such stay (provided that no Credit Extensions will be made prior to the satisfaction, payment, discharge, stay, or bonding of such fine, penalty, judgment, order, or decree);

8.8 Misrepresentations. Borrower or any Person acting for Borrower makes any representation, warranty or other statement now or later in this Agreement, any Loan Document or in any writing delivered to Bank or to induce Bank to enter this Agreement or any Loan Document, and such representation, warranty, or other statement is incorrect in any material respect when made (it being agreed and acknowledged by Bank that the projections and forecasts provided by Borrower in good faith and based upon reasonable assumptions are not viewed as facts and that actual results during the period or periods covered by such projections and forecasts may differ from the projected or forecasted results);

8.9 Subordinated Debt. A default or breach occurs under any agreement between Borrower and any creditor of Borrower that signed a subordination, intercreditor, or other similar agreement with Bank, or any creditor that has signed such an agreement with Bank breaches any terms of such agreement; or

8.10 Governmental Approvals. Any Governmental Approval shall have been (a) revoked, rescinded, suspended, modified in an adverse manner or not renewed in the ordinary course for a full term or (b) subject to any decision by a Governmental Authority that designates a hearing with respect to any applications for renewal of any of such Governmental Approval or that could result in the Governmental Authority taking any of the actions described in clause (a) above, and such decision or such revocation, rescission, suspension, modification or non-renewal (i) causes, or could reasonably be expected to cause, a Material Adverse Change, or (ii) adversely affects the legal qualifications of Borrower or any of its Subsidiaries to hold such Governmental Approval in any applicable jurisdiction and such revocation, rescission, suspension, modification or non-renewal could reasonably be expected to affect the status of or legal qualifications of Borrower or any of its Subsidiaries to hold any Governmental Approval in any other jurisdiction.

9. BANK'S RIGHTS AND REMEDIES

9.1 Rights and Remedies. Upon the occurrence and during the continuance of an Event of Default, Bank may, without notice or demand, do any or all of the following:

(a) declare all Obligations immediately due and payable (but if an Event of Default described in Section 8.5 occurs all Obligations are immediately due and payable without any action by Bank);

(b) stop advancing money or extending credit for Borrower's benefit under this Agreement or under any other agreement between Borrower and Bank;

(c) for any Letters of Credit, demand that Borrower (i) deposit cash with Bank in an amount equal to at least 105% (110% for Letters of Credit denominated in a Foreign Currency) of the Dollar Equivalent of the aggregate face amount of all Letters of Credit remaining undrawn (plus all interest, fees, and costs due or to become due in connection therewith (as estimated by Bank in its good faith business judgment)), to secure all of the Obligations relating to such Letters of Credit, as collateral security for the repayment of any future drawings under such Letters of Credit, and Borrower shall forthwith deposit and pay such amounts, and (ii) pay in advance all letter of credit fees scheduled to be paid or payable over the remaining term of any Letters of Credit;

(d) terminate any FX Contracts;

(e) verify the amount of, demand payment of and performance under, and collect any Accounts and General Intangibles, settle or adjust disputes and claims directly with Account Debtors for amounts on terms and in any order that Bank considers advisable, and notify any Person owing Borrower money of Bank's security interest in such funds;

(f) make any payments and do any acts it considers necessary or reasonable to protect the Collateral and/or its security interest in the Collateral. Borrower shall assemble the Collateral if Bank requests and make it available as Bank designates. Bank may enter premises where the Collateral is located, take and maintain possession of any part of the Collateral, and pay, purchase, contest, or compromise any Lien that appears to be prior or superior to its security interest and pay all expenses incurred. Borrower grants Bank a license to enter and occupy any of its premises, without charge, to exercise any of Bank's rights or remedies;

(g) apply to the Obligations (i) any balances and deposits of Borrower it holds, or (ii) any amount held by Bank owing to or for the credit or the account of Borrower;

(h) ship, reclaim, recover, store, finish, maintain, repair, prepare for sale, advertise for sale and sell the Collateral. For use solely while an Event of Default exists and solely to the extent necessary to exercise its rights with respect to the Collateral, Bank is hereby granted a non-exclusive, royalty-free license or other right to use, without charge, Borrower's labels, Patents, Copyrights, mask works, rights of use of any name, trade secrets, trade names, Trademarks, and advertising matter, or any similar property solely as it pertains to the Collateral, in completing production of, advertising for sale, and selling any Collateral and, in connection with Bank's exercise of its rights under this Section, Borrower's rights under all licenses and all franchise agreements inure to Bank's benefit;

(i) place a "hold" on any account maintained with Bank and/or deliver a notice of exclusive control, any entitlement order, or other directions or instructions pursuant to any Control Agreement or similar agreements providing control of any Collateral;

(j) demand and receive possession of Borrower's Books; and

(k) exercise all rights and remedies available to Bank under the Loan Documents or at law or equity, including all remedies provided under the Code (including disposal of the Collateral pursuant to the terms thereof).

9.2 Power of Attorney. Borrower hereby irrevocably appoints Bank as its lawful attorney-in-fact, exercisable upon the occurrence and during the continuance of an Event of Default, to: (a) endorse Borrower's name on any checks or other forms of payment or security; (b) sign Borrower's name on any invoice or bill of lading for any Account or drafts against Account Debtors; (c) settle and adjust disputes and claims about the Accounts directly with Account Debtors, for amounts and on terms Bank determines reasonable; (d) make, settle, and adjust all claims under Borrower's insurance policies; (e) pay, contest or settle any Lien, charge, encumbrance, security interest, and adverse claim in or to the Collateral, or any judgment based thereon, or otherwise take any action to terminate or discharge the same; and (f) transfer the Collateral into the name of Bank or a third party as the Code permits. Borrower hereby appoints Bank as its lawful attorney-in-fact to sign Borrower's name on any documents necessary to perfect or continue the perfection of Bank's security interest in the Collateral, regardless of whether an Event of Default has occurred, until all Obligations have been satisfied in full and Bank is under no further obligation to make Credit Extensions hereunder. Bank's foregoing appointment as Borrower's attorney in fact, and all of Bank's rights and powers, coupled with an interest, are irrevocable until all Obligations have been fully repaid and performed and Bank's obligation to provide Credit Extensions terminates.

9.3 Protective Payments. If Borrower fails to obtain the insurance called for by Section 6.5 or fails to pay any premium thereon or fails to pay any other amount which Borrower is obligated to pay under this Agreement or any other Loan Document or which may be required to preserve the Collateral, Bank may obtain such insurance or make such payment, and all amounts so paid by Bank are Bank Expenses and immediately due and payable, bearing interest at the then highest rate applicable to the Obligations, and secured by the Collateral. Bank will make reasonable efforts to provide Borrower with notice of Bank obtaining such insurance at the time it is obtained or within a reasonable time thereafter. No payments by Bank are deemed an agreement to make similar payments in the future or Bank's waiver of any Event of Default.

9.4 Application of Payments and Proceeds Upon Default. If an Event of Default has occurred and is continuing, Bank shall have the right to apply in any order any funds in its possession, whether from Borrower account balances, payments, proceeds realized as the result of any collection of Accounts or other disposition of the Collateral, or otherwise, to the Obligations. Bank shall pay any surplus to Borrower by credit to the Designated Deposit Account or to other Persons legally entitled thereto; Borrower shall remain liable to Bank for any deficiency. If Bank, directly or indirectly, enters into a deferred payment or other credit transaction with any purchaser at any sale of Collateral, Bank shall have the option, exercisable at any time, of either reducing the Obligations by the principal amount of the purchase price or deferring the reduction of the Obligations until the actual receipt by Bank of cash therefor.

9.5 Bank's Liability for Collateral. So long as Bank complies with reasonable banking practices regarding the safekeeping of the Collateral in the possession or under the control of Bank, Bank shall not be liable or responsible for: (a) the safekeeping of the Collateral; (b) any loss or damage to the Collateral; (c) any diminution in the value of the Collateral; or (d) any act or default of any carrier, warehouseman, bailee, or other Person. Borrower bears all risk of loss, damage or destruction of the Collateral.

9.6 No Waiver; Remedies Cumulative. Bank's failure, at any time or times, to require strict performance by Borrower of any provision of this Agreement or any other Loan Document shall not waive, affect, or diminish any right of Bank thereafter to demand strict performance and compliance herewith or therewith. No waiver hereunder shall be effective unless signed by the party granting the waiver and then is only effective for the specific instance and purpose for which it is given. Bank's rights and remedies under this Agreement and the other Loan Documents are cumulative. Bank has all rights and remedies provided under the Code, by law, or in equity. Bank's exercise of one right or remedy is not an election and shall not preclude Bank from exercising any other remedy under this Agreement or other remedy available at law or in equity, and Bank's waiver of any Event of Default is not a continuing waiver. Bank's delay in exercising any remedy is not a waiver, election, or acquiescence.

9.7 Demand Waiver. Borrower waives demand, notice of default or dishonor, notice of payment and nonpayment, notice of any default, nonpayment at maturity, release, compromise, settlement, extension, or renewal of accounts, documents, instruments, chattel paper, and guarantees held by Bank on which Borrower is liable.

10. NOTICES

All notices, consents, requests, approvals, demands, or other communication by any party to this Agreement or any other Loan Document must be in writing and shall be deemed to have been validly served, given, or delivered: (a) upon the earlier of actual receipt and three (3) Business Days after deposit in the U.S. mail, first class, registered or certified mail return receipt requested, with proper postage prepaid; (b) upon transmission, when sent by electronic mail or facsimile transmission; (c) one (1) Business Day after deposit with a reputable overnight courier with all charges prepaid; or (d) when delivered, if hand-delivered by messenger, all of which shall be addressed to the party to be notified and sent to the address, facsimile number, or email address indicated below. Bank or Borrower may change its mailing or electronic mail address or facsimile number by giving the other party written notice thereof in accordance with the terms of this Section 10.

If to Borrower: SINGULAR GENOMICS SYSTEMS, INC.
10931 N. Torrey Pines Road
La Jolla, CA 92037
Attn: Drew Spaventa, CEO
Fax: Email:

With a copy to, which shall not constitute notice to the Borrower:

Gunderson Dettmer Stough Villeneuve Franklin & Hachiagian, LLP
c/o Jeffrey Thacker
3570 Carmel Mountain Road
Suite 200
San Diego, CA 92130
Email: jthacker@gunder.com

If to Bank: Silicon Valley Bank
4370 La Jolla Village Drive, Suite 1050
San Diego, CA 92122
Attn: Igor DaCruz
Fax: (858) 622-1424
Email: idacruz@svb.com

11. CHOICE OF LAW, VENUE, JURY TRIAL WAIVER AND JUDICIAL REFERENCE

Except as otherwise expressly provided in any of the Loan Documents, California law governs the Loan Documents without regard to principles of conflicts of law. Borrower and Bank each submit to the exclusive jurisdiction of the State and Federal courts in Santa Clara County, California; provided, however, that nothing in this Agreement shall be deemed to operate to preclude Bank from bringing suit or taking other legal action in any other jurisdiction to realize on the Collateral or any other security for the Obligations, or to enforce a judgment or other court order in favor of Bank. Borrower expressly submits and consents in advance to such jurisdiction in any action or suit commenced in any such court, and Borrower hereby waives any objection that it may have based upon lack of personal jurisdiction, improper venue, or forum non conveniens and hereby consents to the granting of such legal or equitable relief as is deemed appropriate by such court. Borrower hereby waives personal service of the summons, complaints, and other process issued in such action or suit and agrees that service of such summons, complaints, and other process may be made by registered or certified mail addressed to Borrower at the address set forth in, or subsequently provided by Borrower in accordance with, Section 10 of this Agreement and that service so made shall be deemed completed upon the earlier to occur of Borrower's actual receipt thereof or three (3) days after deposit in the U.S. mails, proper postage prepaid.

TO THE FULLEST EXTENT PERMITTED BY APPLICABLE LAW, BORROWER AND BANK EACH WAIVE THEIR RIGHTS TO A JURY TRIAL OF ANY CLAIM OR CAUSE OF ACTION ARISING OUT OF OR BASED UPON THIS AGREEMENT, THE

LOAN DOCUMENTS OR ANY CONTEMPLATED TRANSACTION, INCLUDING CONTRACT, TORT, BREACH OF DUTY AND ALL OTHER CLAIMS. THIS WAIVER IS A MATERIAL INDUCEMENT FOR BOTH PARTIES TO ENTER INTO THIS AGREEMENT. EACH PARTY HAS REVIEWED THIS WAIVER WITH ITS COUNSEL.

WITHOUT INTENDING IN ANY WAY TO LIMIT THE PARTIES' AGREEMENT TO WAIVE THEIR RESPECTIVE RIGHT TO A TRIAL BY JURY, if the above waiver of the right to a trial by jury is not enforceable, the parties hereto agree that any and all disputes or controversies of any nature between them arising at any time shall be decided by a reference to a private judge, mutually selected by the parties (or, if they cannot agree, by the Presiding Judge of the Santa Clara County, California Superior Court) appointed in accordance with California Code of Civil Procedure Section 638 (or pursuant to comparable provisions of federal law if the dispute falls within the exclusive jurisdiction of the federal courts), sitting without a jury, in Santa Clara County, California; and the parties hereby submit to the jurisdiction of such court. The reference proceedings shall be conducted pursuant to and in accordance with the provisions of California Code of Civil Procedure §§ 638 through 645.1, inclusive. The private judge shall have the power, among others, to grant provisional relief, including without limitation, entering temporary restraining orders, issuing preliminary and permanent injunctions and appointing receivers. All such proceedings shall be closed to the public and confidential and all records relating thereto shall be permanently sealed. If during the course of any dispute, a party desires to seek provisional relief, but a judge has not been appointed at that point pursuant to the judicial reference procedures, then such party may apply to the Santa Clara County, California Superior Court for such relief. The proceeding before the private judge shall be conducted in the same manner as it would be before a court under the rules of evidence applicable to judicial proceedings. The parties shall be entitled to discovery which shall be conducted in the same manner as it would be before a court under the rules of discovery applicable to judicial proceedings. The private judge shall oversee discovery and may enforce all discovery rules and orders applicable to judicial proceedings in the same manner as a trial court judge. The parties agree that the selected or appointed private judge shall have the power to decide all issues in the action or proceeding, whether of fact or of law, and shall report a statement of decision thereon pursuant to California Code of Civil Procedure § 644(a). Nothing in this paragraph shall limit the right of any party at any time to exercise self-help remedies, foreclose against collateral, or obtain provisional remedies. The private judge shall also determine all issues relating to the applicability, interpretation, and enforceability of this paragraph.

This Section 11 shall survive the termination of this Agreement.

12. GENERAL PROVISIONS

12.1 Termination Prior to Maturity Date; Survival. All covenants, representations and warranties made in this Agreement continue in full force until this Agreement has terminated pursuant to its terms and all Obligations have been satisfied. So long as Borrower has satisfied the Obligations (other than inchoate indemnity obligations, any other obligations which, by their terms, are to survive the termination of this Agreement, and any Obligations under Bank Services Agreements that are cash collateralized in accordance with Section 4.1 of this Agreement), this Agreement may be terminated prior to the Growth Capital Maturity Date by Borrower in accordance with Section 2.1.1. Those obligations that are expressly specified in this Agreement as surviving this Agreement's termination shall continue to survive notwithstanding this Agreement's termination.

12.2 Successors and Assigns. This Agreement binds and is for the benefit of the successors and permitted assigns of each party. Borrower may not assign this Agreement or any rights or obligations under it without Bank's prior written consent (which may be granted or withheld in Bank's discretion). Bank has the right, without the consent of or notice to Borrower, to sell, transfer, assign, negotiate, or grant participation in all or any part of, or any interest in, Bank's obligations, rights, and benefits under this Agreement and the other Loan Documents (other than the Warrant, as to which assignment, transfer and other such actions are governed by the terms thereof).

12.3 Indemnification. Borrower agrees to indemnify, defend and hold Bank and its directors, officers, employees, agents, attorneys, or any other Person affiliated with or representing Bank (each, an "**Indemnified Person**") harmless against: (i) all obligations, demands, claims, and liabilities (collectively, "**Claims**") claimed or asserted by any other party in connection with the transactions contemplated by the Loan Documents; and (ii) all losses or expenses (including Bank Expenses) in any way suffered, incurred, or paid by such Indemnified Person as a result of, following from, consequential to, or arising from transactions between Bank and Borrower (including reasonable attorneys' fees and expenses), except for Claims and/or losses directly caused by such Indemnified Person's gross negligence or willful misconduct.

This Section 12.3 shall survive until all statutes of limitation with respect to the Claims, losses, and expenses for which indemnity is given shall have run.

12.4 Time of Essence. Time is of the essence for the performance of all Obligations in this Agreement.

12.5 Severability of Provisions. Each provision of this Agreement is severable from every other provision in determining the enforceability of any provision.

12.6 Correction of Loan Documents. Bank may correct patent errors and fill in any blanks in this Agreement and the other Loan Documents consistent with the agreement of the parties so long as Bank provides Borrower with written notice of such correction and allows Borrower at least ten (10) days to object to such correction. In the event of such objection, such correction shall not be made except by an amendment signed by both Bank and Borrower.

12.7 Amendments in Writing; Waiver; Integration. No purported amendment or modification of any Loan Document, or waiver, discharge or termination of any obligation under any Loan Document, shall be enforceable or admissible unless, and only to the extent, expressly set forth in a writing signed by the party against which enforcement or admission is sought. Without limiting the generality of the foregoing, no oral promise or statement, nor any action, inaction, delay, failure to require performance or course of conduct shall operate as, or evidence, an amendment, supplement or waiver or have any other effect on any Loan Document. Any waiver granted shall be limited to the specific circumstance expressly described in it, and shall not apply to any subsequent or other circumstance, whether similar or dissimilar, or give rise to,

or evidence, any obligation or commitment to grant any further waiver. The Loan Documents represent the entire agreement about this subject matter and supersede prior negotiations or agreements. All prior agreements, understandings, representations, warranties, and negotiations between the parties about the subject matter of the Loan Documents merge into the Loan Documents.

12.8 Counterparts. This Agreement may be executed in any number of counterparts and by different parties on separate counterparts, each of which, when executed and delivered, is an original, and all taken together, constitute one Agreement.

12.9 Confidentiality. In handling any confidential information, Bank shall exercise the same degree of care that it exercises for its own proprietary information, but disclosure of information may be made: (a) to Bank's Subsidiaries or Affiliates (such Subsidiaries and Affiliates, together with Bank, collectively, "**Bank Entities**") (provided, however, that any such Bank Entity shall be subject to provisions substantially the same as those in this Section 12.9); (b) to prospective transferees or purchasers of any interest in the Credit Extensions (provided, however, Bank shall use its best efforts to obtain any prospective transferee's or purchaser's agreement to the terms of this provision); (c) as required by law, regulation, subpoena, or other order; (d) to Bank's regulators or as otherwise required in connection with Bank's examination or audit; (e) as Bank considers reasonably appropriate in exercising remedies under the Loan Documents; and (f) to third-party service providers of Bank so long as such service providers have executed a confidentiality agreement with Bank with terms no less restrictive than those contained herein. Confidential information does not include information that is either: (i) in the public domain or in Bank's possession when disclosed to Bank, or becomes part of the public domain (other than as a result of its disclosure by Bank in violation of this Agreement) after disclosure to Bank; or (ii) disclosed to Bank by a third party, if Bank does not know that the third party is prohibited from disclosing the information.

Bank Entities may use anonymous forms of confidential information for aggregate datasets, for analyses or reporting, and for any other uses not expressly prohibited in writing by Borrower. The provisions of the immediately preceding sentence shall survive termination of this Agreement.

12.10 Attorneys' Fees, Costs and Expenses. In any action or proceeding between Borrower and Bank arising out of or relating to the Loan Documents, the prevailing party shall be entitled to recover its reasonable attorneys' fees and other costs and expenses incurred, in addition to any other relief to which it may be entitled.

12.11 Electronic Execution of Documents. The words "**execution,**" "**signed,**" "**signature**" and words of like import in any Loan Document shall be deemed to include electronic signatures or the keeping of records in electronic form, each of which shall be of the same legal effect, validity and enforceability as a manually executed signature or the use of a paper-based recordkeeping systems, as the case may be, to the extent and as provided for in any applicable law, including, without limitation, any state law based on the Uniform Electronic Transactions Act.

12.12 Captions. The headings used in this Agreement are for convenience only and shall not affect the interpretation of this Agreement.

12.13 Construction of Agreement. The parties mutually acknowledge that they and their attorneys have participated in the preparation and negotiation of this Agreement. In cases of uncertainty this Agreement shall be construed without regard to which of the parties caused the uncertainty to exist.

12.14 Relationship. The relationship of the parties to this Agreement is determined solely by the provisions of this Agreement. The parties do not intend to create any agency, partnership, joint venture, trust, fiduciary or other relationship with duties or incidents different from those of parties to an arm's-length contract.

12.15 Third Parties. Nothing in this Agreement, whether express or implied, is intended to: (a) confer any benefits, rights or remedies under or by reason of this Agreement on any persons other than the express parties to it and their respective permitted successors and assigns; (b) relieve or discharge the obligation or liability of any person not an express party to this Agreement; or (c) give any person not an express party to this Agreement any right of subrogation or action against any party to this Agreement.

13. DEFINITIONS

13.1 Definitions. As used in the Loan Documents, the word "**shall**" is mandatory, the word "**may**" is permissive, the word "**or**" is not exclusive, the words "**includes**" and "**including**" are not limiting, the singular includes the plural, and numbers denoting amounts that are set off in brackets are negative. As used in this Agreement, the following capitalized terms have the following meanings:

"**Account**" is any "**account**" as defined in the Code with such additions to such term as may hereafter be made, and includes, without limitation, all accounts receivable and other sums owing to Borrower.

"**Account Debtor**" is any "**account debtor**" as defined in the Code with such additions to such term as may hereafter be made.

"**Affiliate**" is, with respect to any Person, each other Person that owns or controls directly or indirectly the Person, any Person that controls or is controlled by or is under common control with the Person, and each of that Person's senior executive officers, directors, partners and, for any Person that is a limited liability company, that Person's managers and members.

"**Agreement**" is defined in the preamble hereof.

"**Authorized Signer**" is any individual listed in Borrower's Borrowing Resolution who is authorized to execute the Loan Documents, including making (and executing if applicable) any Credit Extension request, on behalf of Borrower.

"**Bank**" is defined in the preamble hereof.

"**Bank Entities**" is defined in Section 12.9.

"**Bank Expenses**" are all audit fees and expenses, costs, and expenses (including reasonable attorneys' fees and expenses) for preparing, amending, negotiating, administering, defending and enforcing the Loan Documents (including, without limitation, those incurred in connection with appeals or Insolvency Proceedings and those identified as Bank Expenses in Section 9.3 hereof) or otherwise incurred with respect to Borrower.

"**Bank Services**" are any products, credit services, and/or financial accommodations previously, now, or hereafter provided to Borrower or any of its Subsidiaries by Bank or any Bank Affiliate, including, without limitation, any letters of credit, cash management services (including, without limitation, merchant services, direct deposit of payroll, business credit cards, and check cashing services), interest rate swap arrangements, and foreign exchange services as any such products or services may be identified in Bank's various agreements related thereto (each, a "**Bank Services Agreement**").

"**Borrower**" is defined in the preamble hereof.

"**Borrower's Books**" are all Borrower's books and records including ledgers, federal and state tax returns, records regarding Borrower's assets or liabilities, the Collateral, business operations or financial condition, and all computer programs or storage or any equipment containing such information.

"**Borrowing Resolutions**" are, with respect to any Person, those resolutions substantially in the form attached hereto as Exhibit C.

"**Business Day**" is any day that is not a Saturday, Sunday or a day on which Bank is closed.

"**Cash Equivalents**" means (a) marketable direct obligations issued or unconditionally guaranteed by the United States or any agency or any State thereof having maturities of not more than one (1) year from the date of acquisition; (b) commercial paper maturing no more than one (1) year after its creation and having the highest rating from either Standard & Poor's Ratings Group or Moody's Investors Service, Inc.; and (c) Bank's certificates of deposit issued maturing no more than one (1) year after issue.

"**Change in Control**" means (a) at any time, any "**person**" or "**group**" (as such terms are used in Sections 13(d) and 14(d) of the Exchange Act) shall become, or obtain rights (whether by means of warrants, options or otherwise) to become, the "**beneficial owner**" (as defined in Rules 13(d)-3 and 13(d)-5 under the Exchange Act), directly or indirectly, of forty-nine percent (49%) or more of the ordinary voting power for the election of directors of Borrower (determined on a fully diluted basis) other than by the sale of Borrower's equity securities in a public offering or to venture capital or private equity investors so long as Borrower identifies to Bank the venture capital or private equity investors at least seven (7) Business Days prior to the closing of the transaction and provides to Bank a description of the material terms of the transaction; (b) during any period of twelve (12) consecutive months, a majority of the members of the Borrower's Board of Directors or other equivalent governing body of Borrower cease to be composed of individuals (i) who were members of that Board of Directors or equivalent governing body on

the first day of such period, (ii) whose election or nomination to that Board of Directors or equivalent governing body was approved by individuals referred to in clause (i) above constituting at the time of such election or nomination at least a majority of that Board of Directors or equivalent governing body or (iii) whose election or nomination to that Board of Directors or other equivalent governing body was approved by individuals referred to in clauses (i) and (ii) above constituting at the time of such election or nomination at least a majority of that Board of Directors or equivalent governing body; or (c) at any time, Borrower shall cease to own and control, of record and beneficially, directly or indirectly, one hundred percent (100%) of each class of outstanding capital stock of each Subsidiary of Borrower free and clear of all Liens (except Liens created by this Agreement).

"**Claims**" is defined in Section 12.3.

"**Code**" is the Uniform Commercial Code, as the same may, from time to time, be enacted and in effect in the State of California; provided, that, to the extent that the Code is used to define any term herein or in any Loan Document and such term is defined differently in different Articles or Divisions of the Code, the definition of such term contained in Article or Division 9 shall govern; provided further, that in the event that, by reason of mandatory provisions of law, any or all of the attachment, perfection, or priority of, or remedies with respect to, Bank's Lien on any Collateral is governed by the Uniform Commercial Code in effect in a jurisdiction other than the State of California, the term "**Code**" shall mean the Uniform Commercial Code as enacted and in effect in such other jurisdiction solely for purposes of the provisions thereof relating to such attachment, perfection, priority, or remedies and for purposes of definitions relating to such provisions.

"**Collateral**" is any and all properties, rights and assets of Borrower described on Exhibit A.

"**Collateral Account**" is any Deposit Account, Securities Account, or Commodity Account.

"**Commodity Account**" is any "**commodity account**" as defined in the Code with such additions to such term as may hereafter be made.

"**Compliance Certificate**" is that certain certificate in the form attached hereto as Exhibit D.

"**Contingent Obligation**" is, for any Person, any direct or indirect liability, contingent or not, of that Person for (a) any indebtedness, lease, dividend, letter of credit or other obligation of another such as an obligation, in each case, directly or indirectly guaranteed, endorsed, co-made, discounted or sold with recourse by that Person, or for which that Person is directly or indirectly liable; (b) any obligations for undrawn letters of credit for the account of that Person; and (c) all obligations from any interest rate, currency or commodity swap agreement, interest rate cap or collar agreement, or other agreement or arrangement designated to protect a Person against fluctuation in interest rates, currency exchange rates or commodity prices; but "**Contingent Obligation**" does not include endorsements in the ordinary course of business. The amount of a Contingent Obligation is the stated or determined amount of the primary obligation for which the Contingent Obligation is made or, if not determinable, the maximum reasonably anticipated liability for it determined by the Person in good faith; but the amount may not exceed the maximum of the obligations under any guarantee or other support arrangement.

"**Control Agreement**" is any control agreement entered into among the depository institution at which Borrower maintains a Deposit Account or the securities intermediary or commodity intermediary at which Borrower maintains a Securities Account or a Commodity Account, Borrower, and Bank pursuant to which Bank obtains control (within the meaning of the Code) over such Deposit Account, Securities Account, or Commodity Account.

"**Conversion Date**" is defined in Section 2.1.1(b)(ii).

"**Copyrights**" are any and all copyright rights, copyright applications, copyright registrations and like protections in each work of authorship and derivative work thereof, whether published or unpublished and whether or not the same also constitutes a trade secret.

"**Credit Extension**" is any Growth Capital Advance or any other extension of credit by Bank for Borrower's benefit under this Agreement.

"**Default Rate**" is defined in Section 2.2(b).

"**Deposit Account**" is any "**deposit account**" as defined in the Code with such additions to such term as may hereafter be made.

"**Designated Deposit Account**" is the multicurrency account denominated in Dollars, account number ********024, maintained by Borrower with Bank.

"**Division**" means, in reference to any Person which is an entity, the division of such Person into two (2) or more separate Persons, with the dividing Person either continuing or terminating its existence as part of such division, including, without limitation, as contemplated under Section 18-217 of the Delaware Limited Liability Company Act for limited liability companies formed under Delaware law, or any analogous action taken pursuant to any other applicable law with respect to any corporation, limited liability company, partnership or other entity.

"**Dollar Equivalent**" is, at any time, (a) with respect to any amount denominated in Dollars, such amount, and (b) with respect to any amount denominated in a Foreign Currency, the equivalent amount therefor in Dollars as determined by Bank at such time on the basis of the then-prevailing rate of exchange in San Francisco, California, for sales of the Foreign Currency for transfer to the country issuing such Foreign Currency.

"**Dollars,**" "**dollars**" or use of the sign "**$**" means only lawful money of the United States and not any other currency, regardless of whether that currency uses the "**$**" sign to denote its currency or may be readily converted into lawful money of the United States.

"**Effective Date**" is defined in the preamble hereof.

"**Equipment**" is all "**equipment**" as defined in the Code with such additions to such term as may hereafter be made, and includes without limitation all machinery, fixtures, goods, vehicles (including motor vehicles and trailers), and any interest in any of the foregoing.

"**ERISA**" is the Employee Retirement Income Security Act of 1974, and its regulations.

"**Event of Default**" is defined in Section 8.

"**Exchange Act**" is the Securities Exchange Act of 1934, as amended.

"**Final Payment**" is a payment (in addition to and not a substitution for the regular monthly payments of principal plus accrued interest) due in accordance with Section 2.1.1 above, equal to the original principal amount of the applicable Growth Capital Advance multiplied by the Final Payment Percentage. For the avoidance of doubt, the payment shall only be calculated based on the actual Growth Capital Advance or Growth Capital Advances actually drawn.

"**Final Payment Percentage**" is five and one-half percent (5.50%).

"**Foreign Currency**" means lawful money of a country other than the United States.

"**Funding Date**" is any date on which a Credit Extension is made to or for the account of Borrower, which shall be a Business Day.

"**FX Contract**" is any foreign exchange contract by and between Borrower and Bank under which Borrower commits to purchase from or sell to Bank a specific amount of Foreign Currency on a specified date.

"**GAAP**" is generally accepted accounting principles set forth in the opinions and pronouncements of the Accounting Principles Board of the American Institute of Certified Public Accountants and statements and pronouncements of the Financial Accounting Standards Board or in such other statements by such other Person as may be approved by a significant segment of the accounting profession, that are applicable to the circumstances as of the date of determination.

"**General Intangibles**" is all "**general intangibles**" as defined in the Code in effect on the date hereof with such additions to such term as may hereafter be made, and includes without limitation, all Intellectual Property, claims, income and other tax refunds, security and other deposits, payment intangibles, contract rights, options to purchase or sell real or personal property, rights in all litigation presently or hereafter pending (whether in contract, tort or otherwise), insurance policies (including without limitation key man, property damage, and business interruption insurance), payments of insurance and rights to payment of any kind.

"**Governmental Approval**" is any consent, authorization, approval, order, license, franchise, permit, certificate, accreditation, registration, filing or notice, of, issued by, from or to, or other act by or in respect of, any Governmental Authority.

"**Governmental Authority**" is any nation or government, any state or other political subdivision thereof, any agency, authority, instrumentality, regulatory body, court, central bank or other entity exercising executive, legislative, judicial, taxing, regulatory or administrative functions of or pertaining to government, any securities exchange and any self-regulatory organization.

"**Growth Capital Advance**" is defined in Section 2.1.1(a).

"**Growth Capital Commitment Termination Date**" is September 30, 2021.

"**Growth Capital Loan Commitment**" is Fifteen Million Dollars ($15,000,000).

"**Growth Capital Maturity Date is September 1, 2023.**

"**Guarantor**" is any Person providing a Guaranty in favor of Bank.

"**Guaranty**" is any guarantee of all or any part of the Obligations, as the same may from time to time be amended, restated, modified or otherwise supplemented.

"**Indebtedness**" is (a) indebtedness for borrowed money or the deferred price of property or services, such as reimbursement and other obligations for surety bonds and letters of credit, (b) obligations evidenced by notes, bonds, debentures or similar instruments, (c) capital lease obligations, and (d) Contingent Obligations.

"**Indemnified Person**" is defined in Section 12.3.

"**Insolvency Proceeding**" is any proceeding by or against any Person under the United States Bankruptcy Code, or any other bankruptcy or insolvency law, including assignments for the benefit of creditors, compositions, extensions generally with its creditors, or proceedings seeking reorganization, arrangement, or other relief.

"**Intellectual Property**" means, with respect to any Person, all of such Person's right, title, and interest in and to the following:

(a) any Copyrights, Trademarks and Patents;

(b) any and all trade secrets and trade secret rights, including, without limitation, any rights to unpatented inventions, know-how, operating manuals;

(c) any and all source code;

(d) any and all design rights which may be available to such Person;

(e) any and all claims for damages by way of past, present and future infringement of any of the foregoing, with the right, but not the obligation, to sue for and collect such damages for said use or infringement of the Intellectual Property rights identified above; and

(f) all amendments, renewals and extensions of any of the Copyrights, Trademarks or Patents.

"**Interest-Only Period**" means the period commencing on the first (1st) Business Day following a Funding Date and continuing through September 30, 2021.

"**Inventory**" is all "**inventory**" as defined in the Code in effect on the date hereof with such additions to such term as may hereafter be made, and includes without limitation all merchandise, raw materials, parts, supplies, packing and shipping materials, work in process and finished products, including without limitation such inventory as is temporarily out of Borrower's custody or possession or in transit and including any returned goods and any documents of title representing any of the above.

"**Investment**" is any beneficial ownership interest in any Person (including stock, partnership interest or other securities), and any loan, advance or capital contribution to any Person.

"**Key Person**" is any of (a) Borrower's Chief Executive Officer, who is Drew Spaventa as of the Effective Date, and (b) Borrower's Chief Scientific Officer, who is Eli Glezer as of the Effective Date.

"**Letter of Credit**" is a standby or commercial letter of credit issued by Bank upon request of Borrower based upon an application, guarantee, indemnity, or similar agreement.

"**Lien**" is a claim, mortgage, deed of trust, levy, charge, pledge, security interest or other encumbrance of any kind, whether voluntarily incurred or arising by operation of law or otherwise against any property.

"**Loan Documents**" are, collectively, this Agreement and any schedules, exhibits, certificates, notices, and any other documents related to this Agreement, the Warrant, any Bank Services Agreement, any subordination agreement, any note, or notes or guaranties executed by Borrower or any Guarantor, and any other present or future agreement by Borrower and/or any Guarantor with or for the benefit of Bank in connection with this Agreement or Bank Services, all as amended, restated, or otherwise modified.

"**Material Adverse Change**" is (a) a material impairment in the perfection or priority of Bank's Lien in the Collateral or in the value of such Collateral; (b) a material adverse change in the business, operations, or condition (financial or otherwise) of Borrower; or (c) a material impairment of the prospect of repayment of any portion of the Obligations.

"**Monthly Financial Statements**" is defined in Section 6.2(a).

"**Obligations**" are Borrower's obligation to pay when due any debts, principal, interest, fees, the Unused Line Fee, the Prepayment Fee, the Final Payment, the Bank Expenses, and other amounts Borrower owes Bank now or later, whether under this Agreement, the other Loan Documents (other than the Warrant), or otherwise, including, without limitation, any interest accruing after Insolvency Proceedings begin and debts, liabilities, or obligations of Borrower assigned to Bank, and the performance of Borrower's duties under the Loan Documents (other than the Warrant).

"**Operating Documents**" are, for any Person, such Person's formation documents, as certified by the Secretary of State (or equivalent agency) of such Person's jurisdiction of organization on a date that is no earlier than thirty (30) days prior to the Effective Date, and, (a) if such Person is a corporation, its bylaws in current form, (b) if such Person is a limited liability company, its limited liability company agreement (or similar agreement), and (c) if such Person is a partnership, its partnership agreement (or similar agreement), each of the foregoing with all current amendments or modifications thereto.

"**Patents**" means all patents, patent applications and like protections including without limitation improvements, divisions, continuations, renewals, reissues, extensions and continuations-in-part of the same.

"**Payment/Advance Form**" is that certain form attached hereto as Exhibit B.

"**Perfection Certificate**" is defined in Section 5.1.

"**Permitted Indebtedness**" is:

(a) Borrower's Indebtedness to Bank under this Agreement and the other Loan Documents;

(b) Indebtedness existing on the Effective Date and shown on the Perfection Certificate;

(c) Subordinated Debt;

(d) unsecured Indebtedness to trade creditors incurred in the ordinary course of business;

(e) Indebtedness incurred as a result of endorsing negotiable instruments received in the ordinary course of business;

(f) Indebtedness secured by Liens permitted under clauses (a) and (c) of the definition of "**Permitted Liens**" hereunder; and

(g) extensions, refinancings, modifications, amendments and restatements of any items of Permitted Indebtedness (a) through (f) above, provided that the principal amount thereof is not increased or the terms thereof are not modified to impose more burdensome terms upon Borrower or its Subsidiary, as the case may be.

"**Permitted Investments**" are:

(a) Investments shown on the Perfection Certificate and existing on the Effective Date;

(b) Investments consisting of Cash Equivalents;

(c) Investments consisting of the endorsement of negotiable instruments for deposit or collection or similar transactions in the ordinary course of Borrower;

(d) Investments consisting of deposit accounts in which Bank has a perfected security interest;

(e) Investments accepted in connection with Transfers permitted by Section 7.1;

(f) Investments consisting of the creation of a Subsidiary for the purpose of consummating a merger transaction permitted by Section 7.3 of this Agreement, which is otherwise a Permitted Investment;

(g) Investments by Borrower in Subsidiaries not to exceed One Hundred Thousand Dollars ($100,000) in the aggregate in any twelve (12) month period;

(h) Investments consisting of (i) travel advances and employee relocation loans and other employee loans and advances in the ordinary course of business, and (ii) loans to employees, officers or directors relating to the purchase of equity securities of Borrower or its Subsidiaries pursuant to employee stock purchase plans or agreements approved by Borrower's Board of Directors;

(i) Investments (including debt obligations) received in connection with the bankruptcy or reorganization of customers or suppliers and in settlement of delinquent obligations of, and other disputes with, customers or suppliers arising in the ordinary course of business; and

(j) Investments consisting of notes receivable of, or prepaid royalties and other credit extensions, to customers and suppliers who are not Affiliates, in the ordinary course of business; provided that this paragraph (j) shall not apply to Investments of Borrower in any Subsidiary.

"**Permitted Liens**" are:

(a) Liens existing on the Effective Date and shown on the Perfection Certificate or arising under this Agreement and the other Loan Documents;

(b) Liens for taxes, fees, assessments or other government charges or levies, either not due and payable or being contested in good faith and for which Borrower maintains adequate reserves on its Books, provided that no notice of any such Lien has been filed or recorded under the Internal Revenue Code of 1986, as amended, and the Treasury Regulations adopted thereunder;

(c) purchase money Liens securing no more than One Hundred Thousand Dollars ($100,000) in the aggregate amount outstanding (i) on Equipment acquired or held by Borrower incurred for financing the acquisition of the Equipment, or (ii) existing on Equipment when acquired, if the Lien is confined to the property and improvements and the proceeds of the Equipment;

(d) Liens of carriers, warehousemen, suppliers, or other Persons that are possessory in nature arising in the ordinary course of business so long as such Liens attach only to Inventory, securing liabilities in the aggregate amount not to exceed One Hundred Thousand Dollars ($100,000) and which are not delinquent or remain payable without penalty or which are being contested in good faith and by appropriate proceedings which proceedings have the effect of preventing the forfeiture or sale of the property subject thereto;

(e) Liens to secure payment of workers' compensation, employment insurance, old-age pensions, social security and other like obligations incurred in the ordinary course of business (other than Liens imposed by ERISA);

(f) Liens incurred in the extension, renewal or refinancing of the indebtedness secured by Liens described in (a) through (c); provided that any extension, renewal or replacement Lien must be limited to the property encumbered by the existing Lien and the principal amount of the indebtedness may not increase;

(g) leases or subleases of real property granted in the ordinary course of Borrower's business (or, if referring to another Person, in the ordinary course of such Person's business), and leases, subleases, non-exclusive licenses or sublicenses of personal property (other than Intellectual Property) granted in the ordinary course of Borrower's business (or, if referring to another Person, in the ordinary course of such Person's business), if the leases, subleases, licenses and sublicenses do not prohibit granting Bank a security interest therein;

(h) non-exclusive licenses of Intellectual Property granted to third parties in the ordinary course of business;

(i) Liens arising from attachments or judgments, orders, or decrees in circumstances not constituting an Event of Default under Sections 8.4 and 8.7; and

(j) Liens in favor of other financial institutions arising in connection with Borrower's deposit and/or securities accounts held at such institutions, provided that Bank has a perfected security interest in the amounts held in such deposit and/or securities accounts.

"**Person**" is any individual, sole proprietorship, partnership, limited liability company, joint venture, company, trust, unincorporated organization, association, corporation, institution, public benefit corporation, firm, joint stock company, estate, entity or government agency.

"**Prepayment Fee**" shall be an amount equal to (i) three percent (3%) of the outstanding principal balance of all Growth Capital Advances if the Growth Capital Advances are repaid prior to the first anniversary of the Effective Date, (ii) two percent (2%) of the outstanding principal balance of all Growth Capital Advances if the Growth Capital Advances are repaid on or after the first anniversary of the Effective Date but prior to the second anniversary of the Effective Date, or (iii) one percent (1%) of the outstanding principal balance of all Growth Capital Advances if the Growth Capital Advances are repaid on or after the second anniversary of the Effective Date, provided that the Prepayment Fee shall be waived if the Growth Capital Advances are refinanced with a new loan facility from Bank.

"**Prime Rate**" is the rate of interest per annum from time to time published in the money rates section of The Wall Street Journal or any successor publication thereto as the "**prime rate**" then in effect; provided that, in the event such rate of interest is less than zero, such rate shall be deemed to be zero for purposes of this Agreement; and provided further that if such rate of interest, as set forth from time to time in the money rates section of The Wall Street Journal, becomes unavailable for any reason as determined by Bank, the "**Prime Rate**" shall mean the rate of interest per annum announced by Bank as its prime rate in effect at its principal office in the State of California (such Bank announced Prime Rate not being intended to be the lowest rate of interest charged by Bank in connection with extensions of credit to debtors); provided that, in the event such rate of interest is less than zero, such rate shall be deemed to be zero for purposes of this Agreement.

"**Registered Organization**" is any "**registered organization**" as defined in the Code with such additions to such term as may hereafter be made.

"**Repayment Period**" is the period of time commencing on the Conversion Date and continuing through the Growth Capital Maturity Date.

"**Requirement of Law**" is as to any Person, the organizational or governing documents of such Person, and any law (statutory or common), treaty, rule or regulation or determination of an arbitrator or a court or other Governmental Authority, in each case applicable to or binding upon such Person or any of its property or to which such Person or any of its property is subject.

"**Responsible Officer**" is any of the Chief Executive Officer, President, Chief Financial Officer or Controller of Borrower.

"**Restricted License**" is any material license or other material agreement with respect to which Borrower is the licensee (a) that prohibits or otherwise restricts Borrower from granting a security interest in Borrower's interest in such license or agreement or any other property, or (b) for which a default under or termination of could interfere with Bank's right to sell any Collateral.

"**SEC**" shall mean the Securities and Exchange Commission, any successor thereto, and any analogous Governmental Authority.

"**Third Tranche Milestone**" means all of the following conditions have been met on or before September 30, 2021: (a) the First Tranche and the Second Tranche shall have been advanced in their entirety in an aggregate principal amount of Ten Million Dollars ($10,000,000); (b) Borrower shall have delivered its first beta prototype sequencer to a beta tester lab acceptable to Bank; and (c) Borrower shall have received a fully-executed term sheet for the sale and issuance of its equity securities in a bona fide equity financing for net cash proceeds of at least Sixty Million Dollars ($60,000,000), provided, (1) the proposed equity financing reflected on such term sheet shall be with investors, and on terms and conditions, reasonably acceptable to Bank, and (2) Bank shall have completed investor due diligence calls reasonably satisfactory to Bank.

"**Securities Account**" is any "**securities account**" as defined in the Code with such additions to such term as may hereafter be made.

"**Subordinated Debt**" is indebtedness incurred by Borrower subordinated to all of Borrower's now or hereafter indebtedness to Bank (pursuant to a subordination, intercreditor, or other similar agreement in form and substance satisfactory to Bank entered into between Bank and the other creditor), on terms acceptable to Bank.

"**Subsidiary**" is, as to any Person, a corporation, partnership, limited liability company or other entity of which shares of stock or other ownership interests having ordinary voting power (other than stock or such other ownership interests having such power only by reason of the happening of a contingency) to elect a majority of the board of directors or other managers of such corporation, partnership or other entity are at the time owned, or the management of which is otherwise controlled, directly or indirectly through one or more intermediaries, or both, by such Person. Unless the context otherwise requires, each reference to a Subsidiary herein shall be a reference to a Subsidiary of Borrower or Guarantor.

"**Trademarks**" means any trademark and servicemark rights, whether registered or not, applications to register and registrations of the same and like protections, and the entire goodwill of the business of Borrower connected with and symbolized by such trademarks.

"**Transfer**" is defined in Section 7.1.

"**UBS Account**" means Borrower's account (*******502) maintained with UBS as set forth on the Perfection Certificate as of the Effective Date.

"**Unused Line Fee**" is defined in Section 2.3(a).

"**Warrant**" is that certain Warrant to Purchase Stock dated as of the Effective Date executed by Borrower in favor of Bank, as amended, modified, supplemented or restated from time to time.

[Signature page follows.]

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be executed as of the Effective Date.

BORROWER:

SINGULAR GENOMICS SYSTEMS, INC.

By: /s/ Drew Spaventa
Name: Drew Spaventa
Title: Chief Executive Officer

BANK:

SILICON VALLEY BANK

By: /s/ Igor DaCruz
Name: Igor DaCruz
Title: Director

EXHIBIT A

The Collateral consists of all of Borrower's right, title and interest in and to the following personal property:

All goods, Accounts (including health-care receivables), Equipment, Inventory, contract rights or rights to payment of money, leases, license agreements, franchise agreements, General Intangibles, commercial tort claims, documents, instruments (including any promissory notes), chattel paper (whether tangible or electronic), cash, deposit accounts, fixtures, letters of credit rights (whether or not the letter of credit is evidenced by a writing), securities, and all other investment property, supporting obligations, and financial assets, whether now owned or hereafter acquired, wherever located; and

all Borrower's Books relating to the foregoing, and any and all claims, rights and interests in any of the above and all substitutions for, additions, attachments, accessories, accessions and improvements to and replacements, products, proceeds and insurance proceeds of any or all of the foregoing.

Notwithstanding the foregoing, the Collateral does not include any Intellectual Property; provided, however, the Collateral shall include all Accounts and all proceeds of Intellectual Property. If a judicial authority (including a U.S. Bankruptcy Court) would hold that a security interest in the underlying Intellectual Property is necessary to have a security interest in such Accounts and such property that are proceeds of Intellectual Property, then the Collateral shall automatically, and effective as of the Effective Date, include the Intellectual Property to the extent necessary to permit perfection of Bank's security interest in such Accounts and such other property of Borrower that are proceeds of the Intellectual Property.

Pursuant to the terms of a certain negative pledge arrangement with Bank, Borrower has agreed not to encumber any of its Intellectual Property without Bank's prior written consent.

EXHIBIT B

Loan Payment/Advance Request Form

DEADLINE FOR SAME DAY PROCESSING IS NOON Pacific Time.

Fax To: (858) 622-1424 Date:_____

LOAN PAYMENT:

SINGULAR GENOMICS SYSTEMS, INC.

From Account # _____ To Account # _____
(Deposit Account #) (Loan Account #)
Principal $ _____ and/or Interest $ _____
Authorized Signature: _____ Phone Number: _____
Print Name/Title: _____

LOAN ADVANCE:

Complete Outgoing Wire Request section below if all or a portion of the funds from this loan advance are for an outgoing wire.

From Account # _____ To Account # _____
(Loan Account #) _____ (Deposit Account #) _____
Amount of Advance $ _____

All Borrower's representations and warranties in the Loan and Security Agreement are true, correct and complete in all material respects on the date of the request for an advance; provided, however, that such materiality qualifier shall not be applicable to any representations and warranties that already are qualified or modified by materiality in the text thereof; and provided, further that those representations and warranties expressly referring to a specific date shall be true, accurate and complete in all material respects as of such date:

Authorized Signature: _____ Phone Number: _____
Print Name/Title: _____

OUTGOING WIRE REQUEST:

Complete only if all or a portion of funds from the loan advance above is to be wired.
Deadline for same day processing is noon, P.S.T.

Beneficiary Name: _____ Amount of Wire: $ _____
Beneficiary Bank: _____ Account Number: _____
City and State: _____
Beneficiary Bank Transit (ABA) #: _____ Beneficiary Bank Code (Swift, Sort, Chip, etc.): **(For International Wire Only)**
Intermediary Bank: _____ Transit (ABA) #: _____
For Further Credit to: _____

Special Instruction: _____

By signing below, I (we) acknowledge and agree that my (our) funds transfer request shall be processed in accordance with and subject to the terms and conditions set forth in the agreements(s) covering funds transfer service(s), which agreements(s) were previously received and executed by me (us).

Authorized Signature: _____ 2nd Signature (if required): _____
Print Name/Title: _____ Print Name/Title: _____
Telephone #: _____ Telephone #: _____

EXHIBIT C

BORROWING RESOLUTIONS

[omitted]

EXHIBIT D

COMPLIANCE CERTIFICATE

TO: SILICON VALLEY BANK Date: _____
FROM: SINGULAR GENOMICS SYSTEMS, INC.

The undersigned authorized officer of SINGULAR GENOMICS SYSTEMS, INC. ("**Borrower**") certifies that under the terms and conditions of the Loan and Security Agreement between Borrower and Bank (the "**Agreement**"), (1) Borrower is in complete compliance for the period ending with all required covenants except as noted below, (2) there are no Events of Default, (3) all representations and warranties in the Agreement are true and correct in all material respects on this date except as noted below; provided, however, that such materiality qualifier shall not be applicable to any representations and warranties that already are qualified or modified by materiality in the text thereof; and provided, further that those representations and warranties expressly referring to a specific date shall be true, accurate and complete in all material respects as of such date, (4) Borrower, and each of its Subsidiaries, has timely filed all required tax returns and reports, and Borrower has timely paid all foreign, federal, state and local taxes, assessments, deposits and contributions owed by Borrower except as otherwise permitted pursuant to the terms of Section 5.8 of the Agreement, and (5) no Liens have been levied or claims made against Borrower or any of its Subsidiaries relating to unpaid employee payroll or benefits of which Borrower has not previously provided written notification to Bank. Attached are the required documents supporting the certification. The undersigned certifies that these are prepared in accordance with GAAP consistently applied from one period to the next except as explained in an accompanying letter or footnotes. The undersigned acknowledges that no borrowings may be requested at any time or date of determination that Borrower is not in compliance with any of the terms of the Agreement, and that compliance is determined not just at the date this certificate is delivered. Capitalized terms used but not otherwise defined herein shall have the meanings given them in the Agreement.

Please indicate compliance status by circling Yes/No under "Complies" column.

Reporting Covenant	Required	Complies
Monthly financial statements with Compliance Certificate	Monthly within 30 days	Yes No
Annual financial statement (CPA Audited) + CC	FYE within 180 days	Yes No
Annual Board Approved Financial Projections	FYE within 30 days	Yes No

The following are the exceptions with respect to the certification above: (If no exceptions exist, state "**No exceptions to note.**")

SINGULAR GENOMICS SYSTEMS, INC.

By: _____
Name: _____
Title: _____

BANK USE ONLY

Received by: _____
AUTHORIZED SIGNER

Date: _____

Verified: _____
AUTHORIZED SIGNER

Date: _____

CERTAIN IDENTIFIED INFORMATION HAS BEEN OMITTED FROM THIS DOCUMENT BECAUSE IT IS BOTH NOT MATERIAL AND WOULD LIKELY CAUSE COMPETITIVE HARM TO THE REGISTRANT IF PUBLICLY DISCLOSED, AND HAS BEEN MARKED "[***]" TO INDICATE WHERE OMISSIONS HAVE BEEN MADE.

EXCLUSIVE LICENSE AGREEMENT

AGREEMENT, dated August 12, 2016 (the "Effective Date"), between THE TRUSTEES OF COLUMBIA UNIVERSITY IN THE CITY OF NEW YORK, a New York corporation ("Columbia"), and Singular Genomics Systems, Inc. , a Delaware corporation ("Company").

1. Definitions.

a. "Affiliate" shall mean any corporation or other entity that directly or indirectly controls, is controlled by, or is under common control with, another corporation or entity. Control means direct or indirect ownership of, or other beneficial interest in, fifty percent (50%) or more of the voting stock, other voting interest, or income of a corporation or other entity.

b. "Cover" or "Covered By" shall mean (i) infringes, in the case of a claim in an issued patent, or (ii) would infringe the claim if it existed in an issued patent, in the case of a claim in a pending application.

c. "Designee" shall mean a corporation or other entity that is under contract to, or in partnership with (i) Company, (ii) a Sublicensee, (iii) an Affiliate of Company or (iv) an Affiliate of a Sublicensee, wherein such corporation or other entity is granted the right to make, use, sell, distribute, import, or export Products. For avoidance of doubt, a Third Party reseller of Product that purchases Product at a fair market rate for a reseller from Company, a Sublicensee, or an Affiliate of Company or Sublicensee, for resale and takes title to such Products shall not be deemed a Designee.

d. "Field" shall mean all fields of use.

e. "License Year" shall mean the one year period from the Effective Date of this Agreement or an anniversary thereof to the next anniversary of the Effective Date.

f. "Materials" shall mean the tangible physical material, if any, delivered to Company hereunder. Any Materials delivered to Company hereunder shall be listed in an Exhibit B hereto which may be amended from time to time upon mutual agreement of the parties.

g. "Net Sales" shall mean [***] to Company, Sublicensees, Designees, or any Affiliates of the foregoing for the sale, rental, lease or other transfer of the Product less the following deductions, in each case to the extent actually allowed and taken by such Third Party customer and not otherwise recovered by or reimbursed to Company, Sublicensees, Designees, or any Affiliates of the foregoing in connection with such Product ("Permitted Deductions"): [***].

For ease of administration, Net Sales by Sublicensees may be calculated using the deductions set forth in the applicable sublicense agreement instead of the deductions set forth above, so long as such deductions are commercially reasonable and do not result in any deductions or decreases significantly greater than those permitted herein.

In the case of transfers of Products between any of Company, Sublicensees, Designees, and Affiliates of any of the foregoing, for subsequent sale, rental, lease or other transfer of such Products to Third Parties, Net Sales shall be the greater of (i) [***] for the transfer of the Product between any of Company, Sublicensees, Designees, and Affiliates of any of the foregoing and (ii) [***] to the Third Party customer for that Product in an arms-length transaction.

At Columbia's option, in the case of transfers of Products between any of Company, Sublicensees, Designees, and Affiliates of any of the foregoing, for use by Company, Sublicensees, Designees, and Affiliates of any of the foregoing such that the Product is consumed or used, and is not incorporated into a product or service subsequently sold to a Third Party customer, Net Sales shall mean the greater of: (1) [***] for the transfer of the Product between any of Company, Sublicensees, Designees, and Affiliates of any of the foregoing, and (2) [***].

In the event that a Product is sold in combination with one or more other products or components that are not Products (a "Combination Product"), Net Sales, for the purposes of determining royalty payments on the Combination Product, shall mean the gross amount collected for the Combination Product less the deductions set forth in clauses (i) – (iv) above, multiplied by a proration factor that is determined as follows:

(i) If all components of the Combination Product were sold separately during the same or immediately preceding calendar quarter, the proration factor shall be determined by the formula [A / (A+B)], where A is the average gross sales price of all Product components during such period when sold separately from the other component(s), and B is the average gross sales price of the other component(s) during such period when sold separately from Product components; or

(ii) If all components of the Combination Product were not sold separately during the same or immediately preceding calendar quarter, the proration factor shall be determined by the parties in good faith negotiations based on the relative value contributed by each component.

h. "Other Product" shall mean any (i) product (or component thereof), other than a Patent Product, the development, manufacture, use, sale, offering for sale, importation, exportation, distribution, rental or lease of which involves the direct use of or incorporation, in whole or in part, of Materials or Technical Information, or (ii) service (or component thereof), other than a Patent Product, the performance of which involves the direct use of or incorporation, in whole or in part, of Materials or Technical Information.

i. "Patent" or "Patents" shall mean: (i) the United States and foreign patents and/or patent applications listed in Exhibit A hereto; (ii) any non-provisional patent applications that claim priority to any provisional patent applications listed in Exhibit A hereto; (iii) any and

all claims of continuation-in-part applications that claim priority to the United States patent applications listed in Exhibit A, but only where such claims are directed to inventions disclosed in the manner provided in the first paragraph of 35 U.S.C. Section 112 in the United States patent applications listed in Exhibit A, and such claims in any patents issuing from such continuation-in-part applications; (iv) any and all foreign patent applications, foreign patents or related foreign patent documents that claim priority to the patents and/or patent applications listed in Exhibit A; (v) any and all divisionals, continuations, reissues, re-examinations, renewals, substitutions, and extensions of the foregoing; and (vi) any and all patents issuing from the foregoing. Notwithstanding the preceding definition, Patent and Patents shall not include any patents or patent applications based on research conducted after the Effective Date, except as otherwise agreed in a separate writing.

j. “Patent Product” shall mean any (i) product (or component thereof) the manufacture, use, sale, offering for sale, or importation of which is Covered By a Valid Claim of a Patent, or (ii) service (or component thereof), the performance of which is Covered By a Valid Claim of a Patent.

k. “Product” or “Products” shall mean a Patent Product and/or an Other Product.

l. “Sublicensee” shall mean any third party to whom Company has granted a sublicense pursuant to this Agreement. An Affiliate of Company exercising rights hereunder shall not be considered a Sublicensee.

m. “Technical Information” shall mean any know-how, technical information and data developed by Columbia by or under the direction of [***] prior to the Effective Date and provided to or received by Company, which know-how, technical information and data, including, without limitation, any know-how, technical information and data disclosed in any Patent, (i) are necessary or useful for the discovery, development, manufacture, use, sale, offering for sale, importation, exportation, distribution, rental or lease of a Product, (ii) are specifically identified on Exhibit C hereto which may be amended from time to time upon mutual agreement of the parties, and (iii) has not become a matter of public information or publicly available prior to the Effective Date. For the avoidance of doubt, Technical Information shall not, however, include any know-how, technical information or data that (i) is in the possession of Company prior to the time such know-how, technical information or data was developed by Columbia; or (ii) is independently developed by Company or a Third Party from which Company rightfully obtains such know-how, technical information or data, without use of any such know-how, technical information or data from Columbia as evidenced by Company’s corroborating written documentation.

n. “Territory” shall mean worldwide.

o. “Third Party” shall mean any entity or person other than Company, Sublicensees, Designees, or their Affiliates.

p. “Valid Claim” shall mean a claim of (i) an issued Patent or (ii) in the case of a claim in a pending application of a Patent, a claim that has not been pending for the longer of (A) [***] from the date of the first binding examination on the merits of the claims in such pending application by a national patent office or (B) [***] from the date of first filing of the

applicable provisional patent application, or if no provisional patent application is filed, the date of first filing of the applicable non-provisional or international patent application, unless and until such claim becomes an issued claim of an issued Patent, which in either case of (i) or (ii) has not lapsed or been revoked, abandoned or held unenforceable or invalid by a final decision of a court or governmental or supra-governmental agency of competent jurisdiction, unappealable or unappealed within the time allowed for appeal.

2. License Grant.

a. Columbia grants to the Company and any Affiliate thereof, upon and subject to all the terms and conditions of this Agreement (including Section 3 hereof):

(i) an exclusive license under the Patents to discover, develop, manufacture, have made, use, sell, offer to sell, have sold, import, export, distribute, rent or lease Products in the Field and throughout the Territory;

(ii) an exclusive license to use Technical Information to discover, develop, manufacture, have made, use, sell, offer to sell, have sold, import, export, distribute, rent or lease Products in the Field and throughout the Territory, until such time as Technical Information is published or otherwise publicly distributed and thereafter, the license granted hereunder shall automatically convert to a non-exclusive license, provided however, that Columbia and its faculty and employees shall have the right to publish, disseminate or otherwise disclose the Technical Information in accordance with Section 3.b.; and

(iii) an exclusive license to use Materials to discover, develop, manufacture, have made, use, sell, offer to sell, have sold, import, export, distribute, rent or lease Products in the Field and throughout the Territory.

b. Columbia grants to Company the right to grant sublicenses, provided that: (i) the sublicense agreement must be consistent with the terms and provisions of this Agreement applicable to the Company; (ii) the Sublicensee shall have no further right to grant sublicenses under this Agreement without the prior written consent of Columbia, not to be unreasonably withheld; (iii) in the event any Sublicensee (or any entity or person acting on its behalf) initiates any proceeding or otherwise asserts any claim challenging the validity or enforceability of any Patent in any court, administrative agency or other forum, Company shall, upon written request by Columbia and to the extent permitted by applicable laws, terminate forthwith the sublicense agreement with such Sublicensee, and the sublicense agreement shall provide for such right of termination by Company; (iv) the Sublicensee will submit quarterly reports to Company consistent with the reporting provision of Section 5a herein; (v) Company remains fully liable for the performance of its and its Sublicensee's obligations hereunder; (vi) Company notifies Columbia of any proposed grant of a sublicense and provides to Columbia a copy of any sublicense agreement within thirty (30) days following execution thereof; provided such sublicense agreement may be redacted for information not necessary to determine compliance with this Agreement, and (vii) no such sublicense or attempt to obtain a sublicensee shall relieve Company of its obligations under Section 6 hereof to exercise its own commercially reasonable efforts, directly or through a sublicense, to discover, develop and market Products, nor relieve Company of its obligations to pay Columbia any and all license fees, royalties and other payments due under the Agreement, including but not limited to under Sections 4, 5 and 11 of the Agreement. Company may not enter into a sublicense agreement prior to the first anniversary of the Effective Date, without Columbia's prior written consent, not to be unreasonably withheld.

c. Columbia will use reasonable efforts to promptly notify the Company of any Improvements to the Patents in the Field reported to Columbia Technology Ventures [***], or those working under his direction, within one (1) year of the effective date of the license agreement and agrees to enter into good faith discussions with Company about the possibility of exclusively licensing such Improvements subject to the following: (i) any commitments or obligations to any third party undertaken by Columbia, whether undertaken before or after the Effective Date; (ii) any limitations imposed by law, rule or regulation or by the terms of any government grant, contract or cooperative agreement; (iii) 35 U.S.C Section 200 et seq. and implementing regulations and policies; and (iv) any requirements imposed on Columbia to maintain any particular tax status, standing or exemption. For purposes of the license agreement, "Improvements" means any discovery, development, invention, enhancement or modification (i) on which [***] is an inventor or developer, individually or with others in his laboratory employed by Columbia, (ii) that is not included in the Patents, and (iii) that claims inventions for which manufacture, use or sale would necessarily infringe a Valid Claim of a Patent. Any disclosures by Columbia to Company under this Section 2(c) shall be subject to Section 7 and sufficiently detailed for Company to assess the commercial viability of the Improvements.

d. All rights and licenses granted by Columbia to Company under this Agreement are subject to applicable requirements of 35 U.S.C. Sections 200 et seq., as amended, and implementing regulations and policies. Without limitation of the foregoing, Company agrees that, to the extent required under 35 U.S.C. Section 204, any Product used, sold, distributed, rented or leased by Company, Sublicensees, Designees, and their Affiliates in the United States will be manufactured substantially in the United States unless Company obtains written permission from the United States government to manufacture such Product outside of the United States, and Columbia will cooperate in good faith with Company's attempts to obtain such permission. In addition, Company agrees that, to the extent required under 35 U.S.C. Section 202(c)(4), the United States government is granted a nonexclusive, nontransferable, irrevocable, paid-up license to practice or have practiced for or on behalf of the United States any Patent throughout the world.

e. All rights not specifically granted herein are reserved to Columbia. Except as expressly provided under this Section 2, no right or license is granted (expressly or by implication or estoppel) by Columbia to Company or its Affiliates or Sublicensees under any tangible or intellectual property, materials, patent, patent application, trademark, copyright, trade secret, know-how, technical information, data or other proprietary right.

3. Reservation of Rights for Research Purposes; Freedom of Publication.

a. Columbia reserves the right to practice the Patents and use Materials, to the extent Patents and Materials are exclusively licensed hereunder, for academic research (which for avoidance of doubt does not include sponsored research for for-profit entities under

agreements that would grant rights that are inconsistent with the rights granted to Company hereunder) and educational purposes in the Field and to permit other non-profit entities or individuals to practice and use such Patents and Materials for academic research and educational purposes in the Field. Columbia shall obtain from all entities or individuals who are given permission to practice and use such Patents and Materials an agreement in writing to limit such use to academic research and educational purposes. Nothing in this Agreement shall be interpreted to limit in any way the right of Columbia and its faculty or employees to practice and use such Patents and Materials for any purpose outside the Field or to license or permit such use outside the Field by third parties.

b. Company acknowledges that Columbia is dedicated to free scholarly exchange and to public dissemination of the results of its scholarly activities. Columbia and its faculty and employees shall have the right to publish, disseminate or otherwise disclose any information relating to its research activities, including Technical Information.

4. Fees, Royalties and Payment.

a. Importance of Technical Information and Materials. Company has requested, and Columbia has agreed, to grant certain rights to Technical Information and Materials. Because of the importance of Technical Information and Materials, Company has agreed to pay certain royalties to Columbia on Other Products, as specified below, even if it is not Covered By a Patent, in order to obtain rights to Technical Information and Materials. Company has agreed to these payments because of the commercial value of Technical Information and Materials, separate and distinct from the commercial value of the Patents. Company further acknowledges that licenses to Technical Information, Materials, and each patent and application within the definition of Patents were separately available from a license to the Patents, and that for convenience and because of the preference of Company, the parties executed a combined license to the Patents, Technical Information, and Materials.

b. In consideration of the licenses granted under Section 2a of this Agreement, the Company shall pay to Columbia as follows:

(i) License Fee: A nonrefundable, non-recoverable and non-creditable license fee in the sum of [***], payable within 50 days following the execution of this Agreement. The Company acknowledges that Columbia, in its sole discretion, may use such funds to offset any all fees and expenses associated with filing, prosecution and maintenance of the Patents.

(ii) Annual Fee: A nonrefundable and non-recoverable annual license fee payable on January 1 of each calendar year, or the first business day thereafter as follows:

- [***] for the 1st and 2nd License Years;
- [***] payable on the 3rd License Year (i.e., January 1, 2019);
- [***] payable on the 4th License Year;
- [***] payable on the 5th License Year and each License Year thereafter.

Annual license fees shall be creditable against earned royalties accrued in the calendar year with respect to which such fee applies (e.g., the fee payable January 1, 2019, shall be creditable against earned royalties accrued in calendar year 2019) ; and

(iii) Royalties:

With respect to sales of Products by Company, Sublicensees, Designees or their Affiliates, in the Territory, a nonrefundable and non-recoverable royalty of:

(1) [***] on Net Sales of Patent Products that are chemicals, reagents or consumables ("Consumable");

(2) [***] on Net Sales of Patent Products that are services including but not limited to diagnostic, genotyping, and sequencing services ("Services);

(3) [***] on Net Sales of Patent Products that are instruments, systems or devices ("System"); and

(4) [***] on Net Sales of Other Products that are Consumables;

(5) [***] on Net Sales of Other Products that are Services; and

(6) [***] on Net Sales of Other Products that are Systems.

In the event Company or its Affiliate, Sublicensee or Designee enters into a license agreement with a Third Party for intellectual property rights which Company (or its Affiliate, Sublicensee or Designee) reasonably deem are necessary to manufacture, use, sell or import Products or that add material value to the development, manufacture or commercialization of Products, then Company may deduct from the royalties due to Columbia on such Products pursuant to Section 4(b)(iii) [***] of any payments actually paid to any such Third Party as consideration solely for any such license to such intellectual property rights; provided that in no event shall the royalties due to Columbia for a given calendar quarter be reduced under Section 4(b)(iii) by more than (i) with respect to Patent Products, [***] or (ii) with respect to Other Products, [***]. Notwithstanding the foregoing, the royalty rate on Net Sales of Other Products that are [***], as set forth in Section 4(b)(iii)(6) above, [***].

c. In consideration of Company's right to sublicense third parties granted under Section 2b of this Agreement, Company shall pay to Columbia the following nonrefundable, non-recoverable and non-creditable amounts (the intention of the parties being that Columbia shall receive consideration equivalent to a full pass-through royalty on all sales of Products by Sublicensees):

(i) Royalties:

(A) With respect to sales of Products by Sublicensees, their Designees or their Affiliates, in the Territory, a nonrefundable and non-recoverable royalty [***].

(ii) Other Payments: a percentage of any and all other gross revenues (excluding royalties), fees, payments and consideration (including any premium above fair market value for debt and/or equity securities or instruments, or the market value in an arm's length transaction of any cross-licensing rights granted by Sublicensee to Company), including

without limitation, any upfront, milestone or lump sum payments, received by Company from Sublicensees, their Designees or their Affiliates as full or partial consideration for the grant of any sublicense by Company pursuant to Section 2b of this Agreement (collectively, "Sublicense Revenue") as follows:

(1) [***] prior to the first anniversary of the Effective Date unless Columbia has given prior written consent;

(2) [***] of Sublicense Revenue received by Company after the first anniversary of the Effective Date and prior to the second anniversary of the Effective Date;

(3) [***] of Sublicense Revenue received by Company after the second anniversary of the Effective Date until the later of (i) the third anniversary of the Effective Date or (ii) the first commercial sale of a Product;

(4) [***] of Sublicense Revenue received by Company thereafter.

For avoidance of doubt, Sublicense Revenue shall not include the following: (i) royalties on Net Sales, (ii) funds that are paid for bona-fide research and development of Products that occurs after the actual date of execution of the sublicense agreement, but not to exceed fair market rates, (iii) fair market value payments for equity or securities of Company, or payments for an acquisition of all or substantially all of its assets that includes the assignment of this Agreement, and (iv) reimbursement for patent prosecution, defense, enforcement or maintenance or other related expenses.

For avoidance of doubt, Sublicense Revenue shall not include fees, payments or consideration received by Company attributable to the grant of licenses or sublicenses by Company to intellectual property other than the Patents, Technical Information and Materials. Company may apportion without discrimination a commercially reasonable percentage of sublicensing payments made to Columbia, which shall not be less than [***] of the total Sublicense Revenue otherwise payable under 4(c)(ii). Upon request of either Party, Columbia and Company will meet to discuss such proposed apportionment if in such Party's opinion the apportionment does not reasonably reflect the value of the sublicensed Patents, Technical Information or Materials. If there is a dispute between the Parties as to reasonable apportionment, such dispute shall be subject to Section 26(a).

d. Development Milestone Payments: In the event that the Company, Sublicensees, or their Affiliates (collectively "Developer") develops a Product for potential commercial sale in the Territory, the following nonrefundable, non-recoverable and non-creditable milestone payments shall be made by Company to Columbia with respect to milestones 1-3, the first Product to reach such milestones, as follows:

(1) [***] on the [***] on a Company proprietary system using a Product;

(2) [***] on first commercial sale of a Product that is a Consumable;

(3) [***] on first commercial sale of a Patent Product that is a System;

(4) [***] on achievement of [***] in cumulative gross sales of Products, payable [***] (for clarity, this payment shall be made only once based on sales of all Products);

For avoidance of doubt, each of the above milestones shall be payable only once.

In the event one or more of the above milestones are achieved in conjunction with, or solely by, a Sublicensee, Company will pay Columbia the greater of: (a) the applicable Development Milestone Payment or (b) the Sublicense Revenue payment pursuant to Section 4(c)(ii), but not both.

e. Duration of Other Product Royalties. Royalties on Other Products shall be payable on Net Sales on a country-by-country basis, and shall apply in the case of an Other Product that is a System, Consumable or Service, until the twelfth (12^{th}) anniversary of the first bona fide commercial sale of each of the first Product (whether Patent Product or Other Product at the time of such first commercial sale) that is a (i) System, (ii) Consumable, and (iii) Service in such country, respectively, but in any event shall not extend beyond the [***] anniversary of this Agreement (the "Other Product Royalty Term").

f. Highest Royalty Due. If a Product is covered by both the definition of Patent Product and Other Product, Columbia shall be entitled to the Patent Product royalty rate on the Product. Columbia shall not be entitled to more than one royalty payment on the same Product sale under Section 4. To the extent a Product ceases being a Patent Product, but is still an Other Product, Columbia shall be entitled to the Other Product royalty rate on the Product, but only for such time as specified in Section 4e. By way of example, but not by way of limitation, if the manufacture of a Product is Covered by a Valid Claim of a Patent, and the manufacture of that Product also incorporates in part Technical Information, Company must pay the royalty specified in Section 4b(iii)(1)-(3). If, after some period of time (for example, five years) of paying the royalties specified in Section 4b(iii)(1)-(3) on the Product, the Product ceases to be a Patent Product, Company must continue to pay royalties on the Product pursuant to Section 4b(iii)(4)-(6) for the duration specified in Section 4e.

g. No Non-Monetary Consideration. Without Columbia's prior written consent, Company, Sublicensees, Designees, and Affiliates of the foregoing, shall not solicit or accept any material consideration for the sale of any Product other than as will be accurately reflected in Net Sales. Furthermore, Company shall not enter into any transaction with any Affiliate that would circumvent its monetary or other obligations under this Agreement.

h. Rate Adjustment on Challenge; Payment of Costs and Expenses.

(i) In the event Company (or any entity or person acting on its behalf) initiates any proceeding or otherwise asserts any claim challenging the validity or enforceability of any Patent in any court, administrative agency or other forum ("Challenge"), all royalty rates, and other payment rates set forth in Sections 4b(iii) and 4c for Patent Products shall [***] on and after the date of such challenge for the remaining term of this Agreement.

(ii) Company shall pay all reasonable out-of-pocket costs and expenses incurred by Columbia (including reasonable attorneys' fees) in connection with defending a Challenge. Columbia may bill Company on a quarterly basis with respect to such costs and expenses, and Company shall make payment within thirty (30) days after receiving an invoice from Columbia.

(iii) In the event at least one claim of a Patent that is subject to a Challenge survives the Challenge by not being found invalid or unenforceable regardless of whether the claim is amended as part of the Challenge, all royalty rates, and other payment rates set forth in Sections 4b(iii) and 4c for Patent Products shall [***] (but, for clarity, not in addition to the doubling under clause (i) above) on and after the date of such finding for the remaining term of this Agreement.

Company acknowledges and agrees that the provisions set forth in this Section 4h reasonably reflect the value derived from the Agreement by Company in the event of a Challenge. In addition, Company acknowledges and agrees that any payments made under this Section 4h shall be nonrefundable and non-recoverable for any reason whatsoever.

i. Sale Below Fair Market Value. In the event that Company, Sublicensees, Designees or their Affiliates sell Product to a Third Party to whom it also sells other products, the price for Licensed Product shall not be established such that Net Sales is below fair market value with the intent of increasing market share for other products sold by Company, Sublicensees, Designees or their Affiliates to such Third Party or for the purpose of reducing the amount of royalties payable on the Net Sales of Product. If the sale of Product under such circumstances results in Net Sales below the fair market value of Product, then the Net Sales of Product in such transaction shall be deemed to be the fair market value for purposes of calculating payments owed to Columbia under this Agreement.

j. Equity: Company shall provide equity in the Company to Columbia as specified in the stock purchase agreement to be executed in association with the License Agreement. A breach of the stock purchase agreement shall be deemed a breach of this Agreement. The stock purchase agreement shall include the equivalent of the following provisions:

i) Company shall grant to Columbia shares of the common stock of Company representing [***] of the common stock outstanding as of the date of this Agreement. Promptly following closing on cumulative institutional or non-institutional equity investments (i.e., exclusive of grants and loans) of at least [***], Company shall grant to Columbia additional shares of the common stock of Company such that the total shares granted pursuant to this Agreement represents [***] of shares outstanding after giving effect to closing on [***] of such investment.

ii) [***]

5. Reports and Payments.

a. Within forty-five (45) days or (if all or some royalties for such calendar quarter are based on sales by Sublicensees or Designees) sixty (60) days after the first business day of each calendar quarter of each License Year of this Agreement, Company shall submit to Columbia a written report with respect to the preceding calendar quarter (the “Payment Report”) stating:

(i) Gross and Net Sales of Products by Company, Sublicensees, Designees and their Affiliates during such quarter, together with detailed information sufficient to permit Columbia to verify the accuracy of reported Net Sales, including Product names, country where manufactured, country where sold, actual selling price, units sold, and identification whether the Product is a Patent Product or Other Product;

(ii) Sublicense Revenue received by Company from its Sublicensees during such quarter together with the respective payment reports (which may be redacted for information not relevant to the calculation of the Sublicense Revenue payment) received by Company from any Sublicensees; and

(iii) A calculation under Section 4 of the amounts due to Columbia.

b. Simultaneously with the submission of each Payment Report, Company shall make payments to Columbia of the amounts due for the calendar quarter covered by the Payment Report. Payment shall be by check payable to The Trustees of Columbia University in the City of New York and sent to the following address:

The Trustees of Columbia University in the City of New York
Columbia Technology Ventures
[***]
[***]

or to such other address as Columbia may specify by notice hereunder, or if requested by Columbia, by wire transfer of immediately available funds by Company to:

[***]

or to such other bank and account identified by notice to Company by Columbia. Company is required to send the quarterly royalty statement whether or not royalty payments are due.

c. Within thirty (30) days after the date of termination or expiration of this Agreement, Company shall pay Columbia any and all amounts that are due pursuant to this Agreement as of the date of such termination or expiration, together with a Payment Report for such payment in accordance with Section 5a hereof, except that such Payment Report shall cover the period from the end of the last calendar quarter prior to termination or expiration to the date of termination or expiration. Nothing in the foregoing shall be deemed to satisfy any of Company's other obligations under this Agreement upon termination or expiration.

d. With respect to revenues obtained by Company in foreign countries, Company shall make royalty payments to Columbia in the United States in United States Dollars. In the event that Company sublicenses Patents to a Sublicensee that does not qualify as a United States taxpayer, and payments to Company for such sublicense will be reduced by withholding taxes, the parties intend that Columbia will share proportionally and equitably with respect to such reductions in payment to Company. In such event, the parties will discuss in good faith a reasonable and fair apportionment of such responsibility and mechanism for such

apportionment. Royalty payments for transactions outside the United States shall first be determined in the currency of the country in which they are earned, and then converted to United States dollars using the buying rates of exchange quoted by The Wall Street Journal (or its successor) in New York, New York for the last business day of the calendar quarter in which the royalties were earned. Any and all loss of exchange value, taxes, or other expenses incurred in the transfer or conversion of foreign currency into U.S. dollars and any income, remittance, or other taxes on such royalties required to be withheld at the source shall be the exclusive responsibility of Company, and shall not be used to decrease the amount of royalties due to Columbia. Company and Columbia will cooperate reasonably in completing and filing documents required under provisions of any applicable tax Laws or under any other applicable Laws in connection with the making of or exemption from any required tax payment or withholding payment, or in connection with any claim to a refund of or credit for any such payment. Royalty statements shall show sales both in the local currency and US dollars, with the exchange rate used clearly stated.

e. Company shall maintain at its principal office usual books of account and records showing its actions under this Agreement, and sufficient to determine Company's compliance with its obligations hereunder. Upon reasonable notice, but not more than once per calendar year, Columbia may have a certified public accountant or auditor, and an attorney (each as to whom Company has no reasonable objection) inspect and copy such books and records for purposes of verifying the accuracy of the amounts paid under this Agreement. The review may cover a period of not more than five (5) years before the first day of the calendar quarter in which the review is requested. In the event that such review shows that Company has underpaid royalties by an amount exceeding the lesser of (i) [***] or more with respect to any calendar quarter or (ii) [***] for any calendar quarter or an aggregate of [***] or more for any calendar year, Company shall pay, within ten days after demand by Columbia, the reasonable out-of-pocket costs and expenses of such review (including the fees charged by Columbia's accountant and attorney involved in the review), in addition to amount of any underpayment and any interest thereon. Columbia may not inspect any period more than once, unless such period is subject to a dispute. Company agrees to cooperate fully with Columbia's accountant or auditor and attorney in connection with any such review. During the review, Company shall provide Columbia's accountant or auditor and attorney with all information reasonably requested to audit and test for completeness, including without limitation, to the extent relevant, information relating to sales, inventory, manufacturing, purchasing, transfer records, customer lists, invoices, purchase orders, sales orders, shipping documentation, third-party royalty reports, pricing policies, and agreements with third parties (including Sublicensees, Designees, Affiliates of Company, Sublicensees and Designees, and customers).

f. Notwithstanding anything to the contrary in this Agreement (including Section 15b), and without limiting any of Columbia's rights and remedies hereunder, any payment required hereunder that is made late (including unpaid portions of amounts due) shall bear interest, compounded monthly, either at the rate of [***]. Any interest charged or paid in excess of the maximum rate permitted by applicable New York State Law shall be deemed the result of a mistake and interest paid in excess of the maximum rate shall be credited or refunded (at the Company's option) to Company.

g. Company shall reimburse Columbia for any reasonable costs and expenses incurred in connection with collecting on any arrears of Company with respect to its undisputed payment and reimbursement obligations under this Agreement (such as Section 11b of this Agreement), including the reasonable costs of engaging any collection agency for such purpose.

6. Diligence.

a. Company shall use its commercially reasonable efforts to research, discover, develop and market Products for commercial sale and distribution in the Territory, and to such end, such efforts will include the following (each, a "Milestone Event"):

(1) Securing [***] in total gross cash financing proceeds within [***] of the Effective Date;

(2) Achieve [***] on a Company proprietary system that is or uses a Patent Product within [***] of the Effective Date; and

(3) First commercial sale of a Patent Product within [***] of the Effective Date.

b. If Company believes that it will not achieve a Milestone Event, and provided Company is in compliance with all other material terms and obligations of this Agreement, Company may notify Columbia in writing in advance of the relevant deadline. Company shall include with such notice (a) a reasonable explanation of the reasons for such failure (and lack of finances will not constitute reasonable basis for such failure) ("Explanation") and (b) a reasonable, detailed, written plan for promptly achieving a reasonable extended and/or amended milestone ("Plan"). If Company so notifies Columbia and provides Columbia with an Explanation and Plan, both of which are reasonably acceptable to Columbia, then Section 6a will be amended to incorporate the extended and/or amended milestone set forth in the Plan. If Company so notifies Columbia and provides Columbia with an Explanation and Plan, but the Explanation is not reasonably acceptable to Columbia, then Company will have the option to extend the deadline for such Milestone Event for a [***] or other agreed upon period by paying to Columbia an extension fee of [***]. If Company does not make such payment or, if after the extension, on a milestone-by-milestone basis, Company fails to achieve the milestone, Columbia shall have the option, in its sole discretion, to terminate this Agreement or convert any or all of such exclusive licenses to nonexclusive licenses with no right to sublicense and no right to initiate legal proceedings pursuant to Section 11.

c. No less often than every twelve (12) months after the Effective Date of this Agreement, Company shall report in writing to Columbia on progress made toward the diligence objectives set forth above.

7. Confidentiality.

a. Except to the extent required to discover, develop, manufacture, use, sell, have sold, distribute, rent or lease Products in the Field, or to grant a sublicense under this Agreement, Company will treat as confidential the Patents and Technical Information disclosed hereunder, and will not disclose or distribute the same to any third party (other than Sublicensees and Designees) without Columbia's written permission; provided that Company may use the Technical Information in a good faith manner to conduct development and commercialization activities.

b. The obligations of confidentiality under this Section 7 do not apply to any Patents, Materials or Technical Information that Company can demonstrate:

(i) was known to Company prior to receipt thereof from Columbia;

(ii) was or becomes a matter of public information or publicly available through no act or failure to act on the part of Company;

(iii) is acquired by Company from a third party entitled to disclose it to Company; or

(iv) Company discovers, develops independently without reference to or use of such Patents, Materials or Technical Information, as evidenced by contemporaneous written records.

8. Disclaimer of Warranty; Limitations of Liability.

a. Columbia hereby represents to Company that, as of the Effective Date:

1. all Columbia inventors listed on the Patents have assigned or have an obligation to assign all right, title and interest that they have in the Patents to Columbia; and

2. Columbia is not in receipt of written notification of any claim, action, case, suit, litigation, arbitration, inquiry or proceeding pending or threatened by any Third Party that seeks to challenge Columbia's ownership of Patents or the ability of Columbia to grant the licenses hereunder.

b. COLUMBIA IS LICENSING THE PATENTS, MATERIALS, TECHNICAL INFORMATION, AND THE SUBJECT OF ANY OTHER LICENSE HEREUNDER, ON AN "AS IS" BASIS. EXCEPT AS SET FORTH IN SECTION 8a, COLUMBIA MAKES NO WARRANTIES EITHER EXPRESS OR IMPLIED OF ANY KIND, AND HEREBY EXPRESSLY DISCLAIMS ANY WARRANTIES, REPRESENTATIONS OR GUARANTEES OF ANY KIND AS TO THE PATENTS, MATERIALS, TECHNICAL INFORMATION, PRODUCTS AND/OR ANYTHING DISCOVERED, DEVELOPED, MANUFACTURED, USED, SOLD, OFFERED FOR SALE, IMPORTED, EXPORTED, DISTRIBUTED, RENTED, LEASED OR OTHERWISE DISPOSED OF UNDER ANY

LICENSE GRANTED HEREUNDER, INCLUDING BUT NOT LIMITED TO: ANY WARRANTIES OF MERCHANTABILITY, TITLE, FITNESS, ADEQUACY OR SUITABILITY FOR A PARTICULAR PURPOSE, USE OR RESULT; ANY WARRANTIES AS TO THE VALIDITY OF ANY PATENT; AND ANY WARRANTIES OF FREEDOM FROM INFRINGEMENT OF ANY DOMESTIC OR FOREIGN PATENTS, COPYRIGHTS, TRADE SECRETS OR OTHER PROPRIETARY RIGHTS OF ANY PARTY.

b. In no event shall Columbia, or its trustees, officers, faculty members, students, employees and agents, have any liability to Company, Sublicensees, Designees, or Affiliates of the foregoing, or any Third Party arising out of the use, operation or application of the Patents, Technical Information, Materials, Products, or anything discovered, developed, manufactured, used, sold, offered for sale, imported, exported, distributed, rented, leased or otherwise disposed of under any license granted hereunder by Company, Sublicensees, Designees or Affiliates of the foregoing, or any Third Party for any reason, including but not limited to, the unmerchantability, inadequacy or unsuitability of the Patents, Materials, Technical Information, Products and/or anything discovered, developed, manufactured, used, sold, offered for sale, imported, exported, distributed, rented, leased or otherwise disposed of under any license granted hereunder for any particular purpose or to produce any particular result, or for any latent defects therein.

c. In no event will Columbia, or its trustees, officers, faculty members, students, employees and agents, be liable to the Company, Sublicensees, Designees or Affiliates of the foregoing, or any Third Party, for any consequential, incidental, special or indirect damages (including, but not limited to, from any destruction to property or from any loss of use, revenue, profit, time or good will) based on activity arising out of or related to this Agreement, whether pursuant to a claim of breach of contract or any other claim of any type.

d. Except in the case of willful misconduct as determined by a court of competent jurisdiction, in no event shall Columbia's liability to Company exceed the payments made to Columbia by Company under this Agreement.

e. The parties hereto acknowledge that the limitations and exclusions of liability and disclaimers of warranty set forth in this Agreement form an essential basis of the bargain between the parties.

9. Prohibition Against Use of Columbia's Name.

Company will not use the name, insignia, or symbols of Columbia, its faculties or departments, or any variation or combination thereof, or the name of any trustee, faculty member, other employee, or student of Columbia for any purpose whatsoever without Columbia's prior written consent. Notwithstanding the foregoing, Company may use the name of Columbia faculty members and employees who are also officers, employees or consultants of Company so long as their names are used only in corporate (including marketing) materials which factually describe their relationship with Company with no implication of endorsement or sponsorship, and are used only with the permission of such individuals.

10. Compliance with Governmental Obligations.

a. Notwithstanding any provision in this Agreement, Columbia disclaims any obligation or liability arising under the license provisions of this Agreement if Company or its Affiliates is charged in a governmental action for not complying with or fails to comply with governmental regulations in the course of taking steps to bring any Product to a point of practical application.

b. Company and its Affiliates shall comply upon reasonable notice from Columbia with all governmental requests directed to Columbia and provide all information and assistance necessary to comply with the governmental requests.

c. Company and its Affiliates shall use commercially reasonable efforts to ensure that research, development, manufacturing and marketing under this Agreement complies with all government regulations in force and effect including, but not limited to, Federal, state, and municipal legislation.

11. Patent Prosecution and Maintenance; Litigation.

a. Columbia, by counsel it selects to whom Company has no reasonable objection, in consultation with Company and any counsel appointed by the Company, will file, prosecute and maintain all Patents in Columbia's name and in countries designated by the Company. As an accommodation to Company, Columbia and its counsel shall not prepare any work product for filing in the first instance. Instead, Company and its counsel shall prepare all work product for filing in the first instance and provide same to Columbia and its counsel in a timely manner prior to any filing deadline for review and filing. In the event that Company and its counsel does not provide work product for filing in a timely manner, Columbia and its counsel shall prepare same. Columbia shall instruct its patent counsel (1) to copy Company on all correspondence related to Patents (including copies of each patent application, office action, response to office action, request for terminal disclaimer, and request for reissue or reexamination of any patent or patent application) and provide copies of all such items to Company counsel as soon as reasonably practicable, and (2) as requested by Company, to provide an update as to the current status of all Patents. The parties agree that consultation between the parties relating to the Patents under this Section 11 shall be pursuant to a common interest in the validity, enforceability and scope of the Patents. Each party shall treat such consultation, along with any information disclosed by each party in connection therewith (including any information concerning patent expenses), on a strictly confidential basis, and shall not disclose such consultation or information to any party without the other party's prior written consent. If Company seeks to challenge the validity, enforceability or scope of any Patent, Columbia's consultation obligation under this Section 11a shall automatically terminate; for the avoidance of doubt, any such termination shall not affect Company's confidentiality and nondisclosure obligations with respect to consultation or disclosure of information prior to such termination, and shall not affect any other provisions of this Agreement (including Company's reimbursement obligation under Section 11b).

b. Except as expressly set forth below, Company will reimburse Columbia for the actual fees, costs, and expenses that Columbia has incurred [***] and that Institution incurs following [***] in preparing, filing, prosecuting and maintaining the Patents, including without limitation, attorneys' fees, the costs of any interference proceedings, oppositions, reexaminations, or any other ex parte or inter partes administrative proceeding before patent offices, taxes, annuities, issue fees, working fees, maintenance fees and renewal charges (collectively, "Patent Expenses"); provided that Columbia shall consult with Company, and the parties shall agree in good faith on a strategy, before incurring any significant expenses related to interference proceedings, oppositions, reexaminations, or any other ex parte or inter partes administrative proceeding that could generate significant costs. Patent Expenses incurred [***] in connection with the Patents set forth in Exhibit A are "Past Patent Expenses," and Columbia, using reasonable efforts, estimates Past Patent Expenses to be [***]. To the extent that the license fee paid by Company under Section 4b(i) is less than the Past Patent Expenses, such difference shall be reimbursed in full by Company to Columbia within sixty (60) days after the Effective Date.

Patent Expenses incurred by Columbia [***] ("Future Patent Expenses") shall be reimbursed to Columbia by Company within thirty (30) days of receiving an invoice from Columbia. Upon failure of Company to pay any Past Patent Expenses or Future Patent Expenses as required by this Section 11b within 30 days from Columbia's notice to Company of such failure, Columbia may, in its sole discretion, take either of the following actions:

i) Abandon the Patents, and in such event, Columbia will provide notice of such abandonment to Company, or

ii) In the event Columbia notifies Company that Columbia will continue to prosecute such Patents at its expense, Company will have no further rights to such Patents under this Agreement.

With respect to non-US and non-PCT Patent Expenses, Columbia will send to Company a brief description of anticipated actions by country or region (e.g., conversion to applications in specific countries or regionals such as the EPO), when the action is due, and the associated expense for such actions on a county or regional basis in advance of such action due dates (hereinafter a "Patent Expense Estimate"). For avoidance of doubt, Company's Patent Expense reimbursement obligation for non-US countries shall cover only those it designates in which to file, prosecute and maintain Patents. The parties shall discuss same in good faith. Within the later of one month prior to the action due dates or 30 days of Company receipt of the Patent Expense Estimate, Company shall determine whether it desires for Columbia to proceed with such actions on a country-by-country basis. Failure by Company to make the associated advance payment as described for a particular action for a non-US country selected/approved by Company will be considered an election not to secure the rights associated with the specific action, and Columbia may, in its sole discretion, abandon the Patents in such country, or in the event Columbia notifies Company that Columbia will continue to prosecute such Patents at its expense in such country ("Returned Patents"), Company will have no further rights to such Returned Patents under this Agreement, effective immediately upon Company receipt of Columbia's notification to Company. Any over-payment will be applied to future Patent Expenses. Upon Company request, any over-payment not used for future Patent Expenses within 12 months will be returned to the company promptly. Any expenses in excess of the Patent Expense estimate will be invoiced to the company.

c. Each party shall promptly notify the other in writing of any actual, alleged or threatened challenge to the validity or enforceability of the Patents of which it becomes aware. Columbia shall have the first right to defend, control and settle any such validity or enforceability challenges. Columbia shall consult with Company before taking any such actions, and the parties shall agree in good faith on a strategy before incurring any significant costs. In the event Columbia does not defend any such validity or enforceability challenge within ninety days of becoming aware of the same, or if its ceases to defend such challenge, then Company shall have the right to defend, control and settle such validity or enforceability challenge, provided that the terms of any settlement shall be subject to Columbia's prior written consent.

d. In the event that Columbia or Company becomes aware of any Third Party who is selling a product that does or will compete with a Product sold or being developed by Company or any of its Affiliates (but not a Sublicensee, or Sublicensee Affiliate) and has a good faith belief that such Third Party is infringing an issued patent falling within the definition of Patents ("Third Party Infringer"), that Party will notify the other Party. Company shall have the right to initiate legal proceedings against any such Third-Party Infringer in its own name and at Company's sole expense. Columbia may initiate legal proceedings against such Third Party Infringer if Company fails within [***] of receipt of such notice to either (i) cause such infringement to cease or (ii) initiate legal proceedings against the Third-Party Infringer or engage in substantive discussions with such Third-Party Infringer with respect to abating such infringement or a sublicense to such Third-Party Infringer; provided, however, that if Company reasonably determines that there are good faith, strategic reasons not to initiate legal proceedings at that time, then the Parties shall discuss same in good faith and Company's first right to enforce shall be tolled for the period determined by the Parties for postponement of initiation of legal proceedings. Any proposed disposition or settlement of a legal proceeding filed by Company pursuant to this Section 11c to enforce any issued patent falling within the definition of Patents against any Third-Party Infringer shall be subject to Columbia's prior written approval, which approval shall not be unreasonably withheld or delayed. Notwithstanding the foregoing, Company's rights under this Section 11c shall apply only to claims of Patents that are exclusively licensed to Company under this Agreement and only in the Field and Territory that are exclusively licensed to Company under this Agreement. The party that initiates legal proceedings against such Third Party Infringer (the "Initiating Party") shall provide the other party (the "Non-Initiating Party") with advance written notice, as early as practicable, of its intent to file any such suit or take any such action, and shall provide the Non-Initiating Party with an opportunity to make suggestions and comments regarding such suit or action, which the Initiating Party shall consider in good faith. Thereafter, at the Non-Initiating Party's request and from time to time during the course of such suit or action, the Initiating Party shall keep the Non-Initiating Party informed, shall consult with the Non-Initiating Party regarding the status and direction of any such suit or action, and shall provide the Non-Initiating Party with copies of all material documents filed in, or otherwise relating to, such suit or action as early as practicable in advance of any filing thereof to allow the Non-Initiating Party to comment thereon, which comments Columbia shall consider in good faith.

e. The Non-Initiating Party will provide all assistance reasonably requested by the "Initiating Party", at the Initiating Party's expense, and will not make any admission or assert any position in any legal or administrative proceeding that is inconsistent with or adverse to any position asserted by the Initiating Party in any proceedings against the Third Party Infringer, without the Initiating Party's prior written consent. Any recovery, whether by way of settlement or judgment, from a third party pursuant to a legal proceeding initiated in accordance with Section 11d shall first be used to reimburse the Initiating Party and the Non-Initiating Party for its actual fees, costs and expenses incurred in connection with such proceeding. Any remaining amounts from any such settlement or judgment shall be divided as follows: (A) Columbia shall retain or receive, as applicable, the royalty that it would have otherwise received under Section 4b(iii) had such activities been performed by Company, (B) subject to clause (A), Company shall retain or receive, as applicable, all damages awarded based on lost sales of Product, and (C) all other such amounts (including any punitive or exemplary damages) shall be divided [***] to the party who initiated or carried on the proceedings and [***] to the other party.

f. In the event a party initiates or defends a legal proceeding concerning any Patent pursuant to Section 11, the other party shall cooperate fully with and supply all assistance reasonably requested by the party initiating such proceeding, including without limitation, joining the proceeding as a party if requested. The party that institutes any legal proceeding concerning any Patent pursuant to Section 11 shall have sole control of that proceeding.

12. Indemnity and Insurance.

a. Company will indemnify, defend, and hold harmless Columbia, its trustees, officers, faculty, employees, students and agents, from and against any and all third party actions, suits, claims, demands, prosecutions, liabilities, costs, expenses, damages, deficiencies, losses or obligations (including attorneys' fees) based on, arising out of, or relating to: (i) the discovery, development, manufacture, packaging, use, sale, offering for sale, importation, exportation, distribution, rental or lease of Products, even if altered for use for a purpose not intended, (ii) the use of Patents, Materials or Technical Information by Company, Sublicensees, Designees, or their Affiliates or customers, (iii) any representation made or warranty given by Company, Sublicensees, Designees, or their Affiliates with respect to Products, Patents, Materials or Technical Information, (iv) any infringement claims relating to Products, Patents, Materials or Technical Information, and (v) any asserted violation of the Export Laws (as defined in Section 14 hereof) by Company, Sublicensees, Designees, or their Affiliates, except in each case to the extent attributable to the gross negligence or willful misconduct of Columbia as determined by a court of competent jurisdiction. Except as separately provided for under Sections 11(c)-(f), Columbia will promptly notify Company in writing any action, suit, claims, demands or prosecutions ("Claim") for which it will be seeking indemnification and grant Company control of the defense and settlement of the Claim, provided that the failure of Columbia to give notice as provided above shall not relieve Company of its defense or indemnification obligations, except to the extent that the failure results in actual prejudice or damage to Company. Company will direct the defense and settlement of any such Claim with counsel of its choosing who are reasonably acceptable to Columbia. Company shall not settle any such action without the written consent of Columbia, which consent shall not be unreasonably withheld. Company will not consent to the entry of any judgment or enter into any settlement that does not include as an unconditional term thereof the giving by the claimant or plaintiff to the indemnified entities a release from all liability with respect to the Claim.

b. Commencing at least five (5) business days prior to the first Product being offered for sale or entering human clinical trials, Company shall obtain and maintain during the term of this Agreement, Commercial General Liability insurance including product liability and contractual liability coverage applicable to Company's indemnity obligations under Section 12a) with reputable and financially secure insurance carriers reasonably acceptable to Columbia to cover the activities of Company, Sublicensees, Designees, and their Affiliates, for minimum limits of $5,000,000 combined single limit for personal injury and property damage per occurrence and in the aggregate. Such insurance shall include Columbia as additional insureds. Company shall furnish a certificate of insurance evidencing such coverage, with thirty days' written notice to Columbia of cancellation or material change in coverage. The minimum amounts of insurance coverage required herein shall not be construed as creating any limitation on the Company's indemnity obligation under Section 12a of this Agreement.

c. Company's insurance shall be primary coverage; any insurance Columbia may purchase shall be excess and noncontributory. The Company's insurance shall be written to cover claims incurred, discovered, manifested, or made during or after the expiration of this Agreement.

d. Company shall at all times comply with all statutory workers' compensation and employers' liability requirements covering its employees with respect to activities performed under this Agreement.

13. Marking.

Prior to the issuance of patents falling within the definition of Patents, Company shall mark all Patent Products made, sold, offered for sale, imported, or otherwise disposed of by Company under the license granted in this Agreement with the words "Patent Pending," and following the issuance of one or more patents, with the numbers of such patents. The Company shall cause its Affiliates, and use reasonable efforts to cause its Sublicensees and Designees and their Affiliates, to comply with the marking requirements of this Section 13.

14. Export Control Laws.

Company agrees to comply with U.S. export laws and regulations pertaining to the export of technical data, services and commodities, including the International Traffic in Arms Regulations (22 C.F.R. § 120 et seq.), the Export Administration Regulations (15 C.F.R. § 730 et seq.), the regulations administered by the Treasury Department's Office of Foreign Assets Control (31 C.F.R. § 500, et seq.), and the Anti-Boycott Regulations (15 C.F.R. § 760). The parties shall cooperate with each other to facilitate compliance with these laws and regulations.

Company understands that sharing controlled technical data with non-U.S. persons is an export to that person's country of citizenship that is subject to U.S. export laws and regulations, even if the transfer occurs in the United States. Company shall obtain any necessary U.S. government license or other authorization required pursuant to the U.S. export control laws and regulations for the export or re-export of any commodity, service or technical data covered by this Agreement, including technical data acquired from Columbia pursuant to this Agreement and products created as a result of that data.

15. Breach and Cure.

a. In addition to applicable legal standards, Company shall be deemed to be in material breach of this Agreement for: (i) failure to pay fully and promptly amounts due pursuant to Section 4 (including without limitation any payments required under subsection h thereof) and payable pursuant to Section 5; (ii) failure of Company to meet any of its obligations under Section 6 of this Agreement; (iii) failure to comply with governmental requests directed to Columbia pursuant to Section 10b; (iv) failure to reimburse Columbia for or pay fully and promptly the costs of prosecuting and maintaining Patents pursuant to Section 11; (v) failure to obtain and maintain insurance in the amount and of the type provided for in Section 12; and (vi) failure to comply with the Export Laws under Section 14.

b. Either party shall have the right to cure its material breach. The cure shall be effected within a reasonable period of time but in no event later than [***] after notice of any breach given by the non-breaching party.

16. Term of Agreement.

a. This Agreement shall be effective as of the Effective Date and shall continue in full force and effect until its expiration or termination in accordance with this Section 16.

b. Unless terminated earlier under any provision of this Agreement, the term of the licenses granted hereunder shall extend, on a country-by-country and product-by-product basis, until the later of (i) the date of expiration of the last to expire of the issued patents falling within the definition of Patents, or (ii) the expiration of the Other Product Royalty Term for such product in such country.

c. Columbia may terminate this Agreement: (i) upon [***] days written notice to Company if Columbia elects to terminate in accordance with [***]; (ii) upon written notice to Company for Company's material breach of the Agreement and Company's failure to cure such material breach in accordance with Section 15b; (iii) in the event Company becomes insolvent or is generally not paying its debts as such debts become due, unless Company can provide adequate assurance of future performance, including diligent development and sales of Product; (iv) in the event Company ceases to conduct business as a going concern; and (v) in the event Company (or any entity or person acting on its behalf) initiates any proceeding or otherwise asserts any claim challenging the validity or enforceability of any Patent in any court, administrative agency or other forum. Termination under (ii) – (v) shall be effective upon date of notice sent pursuant to Section 17. If the Company disputes in good faith such material breach or its failure to cure such breach by written notice to Columbia within such [***] period, then such dispute shall be submitted to the dispute resolution procedures set forth in Article 26(a). In that event, the notifying Party does not have the right to terminate until it has been determined, pursuant to the procedures set forth in Article 26(a), that Company is in material breach of this Agreement, and such breaching Party further fails to cure such breach within [***] after the conclusion of any proceedings under Article 26(a).

d. Company shall have the right to terminate this Agreement for any reason upon thirty (30) days prior written notice.

e. Upon any termination of this Agreement other than under Section 16d, if the license granted to Company under this Agreement is sublicensed, then each Sublicensee that is not at such time in material breach of its sublicense shall have the right to obtain a license from Columbia on the same terms and conditions as set forth herein, which shall not impose any representations, warranties, obligations or liabilities on Columbia that are not included in this Agreement and (i) the scope of the license granted directly by Columbia to such sublicensee shall be co-extensive with the scope of the sublicense granted by Company to such sublicensee, and (ii) if the sublicense granted to such sublicensee was non-exclusive, such sublicensee shall not have the right to participate in the prosecution or enforcement of the Patents under the license granted to it directly by Columbia. Any sublicense granted by Company will contain provisions corresponding to those of this paragraph respecting termination and the conditions of continuance of sublicenses.

f. Upon expiration of the term of this Agreement as set forth in Section 16(b), Company shall have a non-exclusive, perpetual, license to use the Technical Information and Materials.

g. Sections 5c, 5e, 5f, 5g, 7, 8, 9, 10, 12, 14, 16e, 16f, 16g, 16h, 16i, 17, 19, 22, 23, and 25, 26 will survive any termination or expiration of this Agreement.

h. Any termination of this Agreement shall not adversely affect any rights or obligations that may have accrued to either party prior to the date of termination, including without limitation, Company's obligation to pay all amounts due and payable under Sections 4 (including any payments required under subsection h thereof), 5 and 11 hereof.

i. Upon any termination of this Agreement for any reason other than the expiration of this Agreement under Section 16b or Company's failure to cure a material breach of this Agreement under Section 16c(ii), Company, Sublicensees, Designees, and their Affiliates shall have the right, for [***] or such longer period as the parties may reasonably agree, to dispose of Products or substantially completed Products then on hand, and to complete orders for Products then on hand, and royalties shall be paid to Columbia with respect to such Products as though this Agreement had not terminated. If this Agreement expires under Section 16b, then the Company shall thereafter be free to use the Technical Information and Materials without any further obligation to Columbia.

h. Notwithstanding anything to the contrary in the Agreement, to the extent the manufacture of a Product is Covered By an issued patent within the definition of Patents and occurs prior to the expiration of such issued patent, the sale of that Product after the expiration date of the issued patent shall still constitute a royalty-bearing sale under Section 4.

17. Notices. Any notice required or permitted to be given under this Agreement shall be sufficient if in writing and shall be considered given (i) when mailed by certified mail (return receipt requested), postage prepaid, or (ii) on the date of actual delivery by hand or overnight delivery, with receipt acknowledged,

if to Columbia, to:	Executive Director Columbia Technology Ventures Columbia University [***]
copy to:	General Counsel Columbia University [***]
if to the Company, to:	Singular Genomics, Inc. (c/o Seed General Council) 1201 Camino Del Mar, Suite 202 Del Mar, California 92014 Attn: Drew Spaventa
copy to:	Singular Genomics, Inc. (c/o Seed General Council) 1201 Camino Del Mar, Suite 202 Del Mar, California 92014 Attn: Seed General Council

or to such other address as a party may specify by notice hereunder.

18. Assignment. This Agreement and all rights and obligations hereunder may not be assigned by either party without the written consent of the other party, except that Company may assign this Agreement, without the written consent of Columbia, to an entity that acquires all or substantially all of its business or assets, whether through merger, reorganization or otherwise, provided that the party to which this Agreement is assigned expressly agrees in writing to assume and be bound by all obligations of the assigning party under this Agreement. Company shall provide Columbia with written notice of any such assignment. Any attempt to assign without compliance with this provision shall be void.

19. Waiver and Election of Remedies. The failure of any party to insist upon strict adherence to any term of this Agreement on any occasion shall not be considered a waiver or deprive that party thereafter of the right to insist upon strict adherence to that term or any other term of this Agreement. All waivers must be in writing and signed by an authorized representative of the party against which such waiver is being sought. The pursuit by either party of any remedy to which it is entitled at any time or continuation of the Agreement despite a breach by the other shall not be deemed an election of remedies or waiver of the right to pursue any other remedies to which it may be entitled.

20. Binding on Successors. This Agreement shall be binding upon and inure to the benefit of the parties and their respective successors and assigns to the extent assignment is permitted under this Agreement.

21. Independent Contractors. It is the express intention of the parties that the relationship of Columbia and the Company shall be that of independent contractors and shall not be that of agents, partners or joint venturers. Nothing in this Agreement is intended or shall be construed to permit or authorize either party to incur, or represent that it has the power to incur, any obligation or liability on behalf of the other party.

22. Entire Agreement; Amendment. This Agreement, together with the Exhibits, sets forth the entire agreement between the parties concerning the subject matter hereof and supersedes all previous agreements, written or oral, concerning such subject matter. This Agreement may be amended only by written agreement duly executed by the parties.

23. Severability. In the event that any provision of this Agreement is held by a court of competent jurisdiction to be unenforceable because it is invalid, illegal or unenforceable, the validity of the remaining provisions shall not be affected, and the rights and obligations of the parties shall be construed and enforced as if the Agreement did not contain the particular provisions held to be unenforceable, unless such construction would materially alter the meaning of this Agreement. By way of example, but not by way of limitation, Sections 4h(i), 4h(ii) and 4h(iii) are intended by Company and Columbia to be severable from each other, such that if one clause is found to be unenforceable, the other clauses remain operative and in effect.

24. No Third-Party Beneficiaries. Except as expressly set forth herein, the parties hereto agree that there are no third-party beneficiaries of any kind to this Agreement.

25. Governing Law. This Agreement shall be governed by and construed in accordance with the internal substantive laws of the State of New York as applicable to agreements made and wholly performed within the State of New York, and without reference to the conflict or choice of laws principles of any jurisdiction.

26. Dispute Resolution:

(a) Internal Resolution. The Parties shall discuss in good faith for a period of no less than thirty (30) days any disputes arising between the Parties in connection with this Agreement. In the event such a dispute between the Parties is not settled within thirty (30) days, the issue shall be referred to the Executive Director of Columbia Technology Ventures, or his/her designee, and an officer of Company, or his/her designee, for discussions in good faith for a period of no less than thirty (30) days. If no agreement is reached by the executives within such additional thirty (30) day period, then either Party may initiate dispute resolution procedures pursuant to Section 26(b).

(b) Unless otherwise separately agreed in writing, the parties agree that any and all claims arising under or related to this Agreement shall be heard and determined only in either the United States District Court for the Southern District of New York or in the courts of the State of New York located in the City and County of New York, and the parties irrevocably agree to submit themselves to the exclusive and personal jurisdiction of those courts and irrevocably waive any and all rights any such party may now or hereafter have to object to such jurisdiction or the convenience of the forum.

27. Execution in Counterparts; Facsimile or Electronic Transmission. This Agreement may be executed in counterparts, and by facsimile or electronic transmission. This Agreement is not binding on the parties until it has been signed below on behalf of each party.

IN WITNESS WHEREOF, Columbia and the Company have caused this Agreement to be executed by their duly authorized representatives as of the day and year first written above.

THE TRUSTEES OF COLUMBIA UNIVERSITY IN THE CITY OF NEW YORK

By: /s/ Orin Herskowitz
Name: Orin Herskowitz
Title: Exec Dir, CTV

SINGULAR GENOMICS SYSTEMS, INC.

By: /s/ Andrew Spaventa
Name: Andrew Spaventa
Title: Chief Executive Officer

EXHIBIT A
Patents

[***]

EXHIBIT B
Materials

[***]

EXHIBIT C
Technical Information

[***]

CERTAIN IDENTIFIED INFORMATION HAS BEEN OMITTED FROM THIS DOCUMENT BECAUSE IT IS BOTH NOT MATERIAL AND WOULD LIKELY CAUSE COMPETITIVE HARM TO THE REGISTRANT IF PUBLICLY DISCLOSED, AND HAS BEEN MARKED "[***]" TO INDICATE WHERE OMISSIONS HAVE BEEN MADE.

FIRST AMENDMENT
TO
LICENSE AGREEMENT

This FIRST AMENDMENT TO LICENSE AGREEMENT (this "Amendment") is made and entered into as of September 7, 2016 ("Amendment Effective Date") by and between Singular Genomics Systems Inc. ("Company") and The Trustees of Columbia University in the City of New York ("Columbia").

W I T N E S S E T H:

WHEREAS, Company and Columbia are parties to that certain License Agreement dated August 12, 2016 (the "Agreement"). Each capitalized term used herein, and not otherwise defined herein, shall have the meaning set forth in the Agreement;

WHEREAS, Company and the Columbia wish to amend the Agreement in certain respects to add intellectual property licensed to Company under the Agreement and additional diligence milestones and payments in consideration for such intellectual property;

NOW, THEREFORE, in consideration of the premises and the mutual covenants herein set forth, the parties hereto hereby agree as follows:

1. Replacement of Exhibit A with Exhibit A-1 (Patents). Exhibit A is hereby deleted in its entirety and replaced with Exhibit A-1 attached as Appendix 1 hereto. Each mention in the Agreement of "Exhibit A" will now be deemed to be a reference to "Exhibit A-1".

2. Replacement of Exhibit C with Exhibit C-1 (Technical Information). Exhibit C is hereby deleted in its entirety and replaced with Exhibit C-1 attached as Appendix 2 hereto. Each mention in the Agreement of "Exhibit C" will now be deemed to be a reference to "Exhibit C-1".

3. Section 4d shall be amended by adding the following language after subsection (4):

   "(5) [***] on first commercial sale of a Patent Product Covered by a Valid Claim of a Patent resulting from [***]."

4. Section 6a shall be amended by adding the following language to the end of the provision:

   "(4) First commercial sale of a Patent Product Covered by a Valid Claim of a Patent resulting from [***];

   (5) Within [***] of the Effective Date, the Company shall have commenced and be engaged in active, bona fide development for a Patent Product Covered by a Valid Claim of a Patent resulting from [***]."

5. Section 6b shall be amended by deleting the last sentence of Section 6(b) and replacing it with the following:

"If Company does not make such payment or, if after the extension, on a milestone-by-milestone basis, Company fails to achieve the milestone, then: (1) [***], Columbia shall have the option, in its sole discretion, to terminate this Agreement or convert any or all of such exclusive licenses to nonexclusive licenses with no right to sublicense and no right to initiate legal proceedings pursuant to Section 11; and (2) for [***], Columbia shall have the option, in its sole discretion of terminating this Agreement solely with respect to Patents resulting from [***] and its associated Technical Information or converting the exclusive licenses to [***] and its associated Technical Information to nonexclusive licenses with no right to sublicense and no right to initiate legal proceedings pursuant to Section 11."

6. Except as expressly set forth in this Amendment, the Agreement shall remain in full force and effect. If there is any inconsistency or conflict between this Amendment and the Agreement, the provisions of this Amendment shall govern and control. This Amendment may be executed in any number of counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument. This Amendment shall be binding upon, and shall inure to the benefit of, the parties hereto and their respective successors and assigns.

IN WITNESS WHEREOF, the parties hereto have causes this Amendment to Agreement to be executed as of the date first above written.

THE TRUSTEES OF COLUMBIA UNIVERSITY IN THE CITY OF NEW YORK

By: /s/ Orin Herskowitz
Name: Orin Herskowitz
Title: Exec Dir, CTV

[***]

SINGULAR GENOMICS SYSTEMS, INC.

By: /s/ Andrew Spaventa
Name: Andrew Spaventa
Title: Chief Executive Officer

Appendix 1

EXHIBIT A-1: Patents

[***]

Appendix 2

EXHIBIT C-1: Technical Information

[***]

CERTAIN IDENTIFIED INFORMATION HAS BEEN OMITTED FROM THIS DOCUMENT BECAUSE IT IS BOTH NOT MATERIAL AND WOULD LIKELY CAUSE COMPETITIVE HARM TO THE REGISTRANT IF PUBLICLY DISCLOSED, AND HAS BEEN MARKED "[***]" TO INDICATE WHERE OMISSIONS HAVE BEEN MADE.

SECOND AMENDMENT TO LICENSE AGREEMENT

This SECOND AMENDMENT TO LICENSE AGREEMENT (this "Amendment") is made and entered into as of November 4, 2016 ("Amendment Two Effective Date") by and between Singular Genomics Systems Inc. ("Company") and The Trustees of Columbia University in the City of New York ("Columbia").

W I T N E S S E T H:

WHEREAS, Company and Columbia are parties to that certain License Agreement dated August 12, 2016, as amended by the First Amendment dated September 7, 2017 (the "Agreement"). Each capitalized term used herein, and not otherwise defined herein, shall have the meaning set forth in the Agreement;

WHEREAS, Company and the Columbia wish to amend the Agreement in certain respects to add intellectual property licensed to Company under the Agreement and amend the diligence milestones and payments in consideration for such intellectual property;

NOW, THEREFORE, in consideration of the premises and the mutual covenants herein set forth, the parties hereto hereby agree as follows:

1. Replacement of Exhibit A-1 with Exhibit A-2 (Patents). Exhibit A-1 is hereby deleted in its entirety and replaced with Exhibit A-2 attached as Appendix 1 hereto. Each mention in the Agreement of "Exhibit A" or "Exhibit A-1" will now be deemed to be a reference to "Exhibit A-2".

2. Replacement of Exhibit B with Exhibit B-2 (Materials). Exhibit B is hereby deleted in its entirety and replaced with Exhibit B-2 attached as Appendix 2 hereto. Each mention in the Agreement of "Exhibit B" will now be deemed to be a reference to "Exhibit B-2".

3. Replacement of Exhibit C-1 with Exhibit C-2 (Technical Information). Exhibit C-1 is hereby deleted in its entirety and replaced with Exhibit C-2 attached as Appendix 3 hereto. Each mention in the Agreement of "Exhibit C" or "Exhibit C-1" will now be deemed to be a reference to "Exhibit C-2".

4. Section 4b(ii) shall be amended by deleting, in its entirety, the second bullet point which reads as follows:

    - [***]

5. Sections 4d(1)-(3) shall be amended by deleting it entirely and adding the following as the new Sections 4d(1)-(3):

   (1) [***] payable on the 6 month anniversary of the achievement date of [***];

   (2) [***] payable on the 6 month anniversary of the achievement date of the first commercial sale of a Product that is a Consumable;

   (3) [***] payable on the 6 month anniversary of the achievement date of the first commercial sale of a Patent Product that is a System;

6. Section 4d shall be amended by adding the following language after subsection (5):

   "(6) The parties will within six (6) months of the Amendment Two Effective Date enter into good faith discussions for the addition of one (1) development milestone payment to be added as Section 4d(6) per a separate written amendment.

7. Section 11b shall be amended by adding the following language to the end of the first (1st) paragraph:

   Solely with respect to Past Patent Expenses for Patents from [***], payment of such [***] shall be deferred until a time to be negotiated in good faith between the parties and recorded per a separate written amendment within [***]. Company's obligation to pay to Columbia the [***] shall survive (1) termination of this Agreement, or (2) termination of the licenses granted under Section 2 with respect to Patents from [***], provided either of these termination events occurs more than [***]. For the avoidance of doubt, payment of Future Patent Expenses for [***] shall be in accordance with the next paragraph of this Section 11b.

8. Within [***], Company may terminate [***] upon written notice to Columbia. Upon Columbia's receipt of Company's notice of termination of the [***] shall be deleted from this Amendment, the Patents related to [***] shall be deleted from Exhibit A-2, the Technical Information related to [***] shall be deleted from Exhibit C-2 and, subject to Section 16h, the Company shall have no further rights, liability or obligation relating thereto.

9. Except as expressly set forth in this Amendment, the Agreement shall remain in full force and effect. If there is any inconsistency or conflict between this Amendment and the Agreement, the provisions of this Amendment shall govern and control. This Amendment may be executed in any number of counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument. This Amendment shall be binding upon, and shall inure to the benefit of, the parties hereto and their respective successors and assigns.

IN WITNESS WHEREOF, the parties hereto have caused this Amendment to Agreement to be executed as of the date first above written.

THE TRUSTEES OF COLUMBIA UNIVERSITY IN THE CITY OF NEW YORK

By: /s/ Orin Herskowitz
Name: Orin Herskowitz
Title: Executive Director
Columbia Technology Ventures

[***]

SINGULAR GENOMICS SYSTEMS, INC.

By: /s/ Andrew Spaventa
Name: Andrew Spaventa
Title: Chief Executive Officer

EXHIBIT A-2: Patents

[***]

EXHIBIT B-2: Materials

[***]

EXHIBIT C-2: Technical Information

[***]

CERTAIN IDENTIFIED INFORMATION HAS BEEN OMITTED FROM THIS DOCUMENT BECAUSE IT IS BOTH NOT MATERIAL AND WOULD LIKELY CAUSE COMPETITIVE HARM TO THE REGISTRANT IF PUBLICLY DISCLOSED, AND HAS BEEN MARKED "[***]" TO INDICATE WHERE OMISSIONS HAVE BEEN MADE.

THIRD AMENDMENT
TO
LICENSE AGREEMENT

This THIRD AMENDMENT TO LICENSE AGREEMENT (this "Amendment") is made and entered into as of June 20, 2017 ("Amendment Three Effective Date") by and between Singular Genomics Systems Inc. ("Company") and The Trustees of Columbia University in the City of New York ("Columbia").

W I T N E S S E T H:

WHEREAS, Company and Columbia are parties to that certain License Agreement dated August 12, 2016, as amended on September 7, 2016 and November 4, 2016 (collectively, the "Agreement"). Each capitalized term used herein, and not otherwise defined herein, shall have the meaning set forth in the Agreement;

WHEREAS, Company and the Columbia wish to amend the Agreement in certain respects to add intellectual property licensed to Company under the Agreement and amend the diligence milestones and payments in consideration for such intellectual property;

NOW, THEREFORE, in consideration of the premises and the mutual covenants herein set forth, the parties hereto hereby agree as follows:

1. Replacement of Exhibit A -2 (Patents) with Exhibit A-3. Exhibit A-2 is hereby deleted in its entirety and replaced with Exhibit A-3 attached as Appendix 1 hereto. Each mention in the Agreement of "Exhibit A-2" will now be deemed to be a reference to "Exhibit A-3".

2. Replacement of Exhibit C-2 (Technical Information) with Exhibit C-3. Exhibit C-2 is hereby deleted in its entirety and replaced with Exhibit C-3 attached as Appendix 2 hereto. Each mention in the Agreement of "Exhibit C-2" will now be deemed to be a reference to "Exhibit C¬3".

3. Section 4b(iii)(1) shall be deleted in its entirety and replaced with the following language:

   "(1) [***] on Net Sales of Patent Products that are chemicals, reagents or consumables ("Consumable") [***] in Net Sales of Products upon which the royalty on Net Sales of Consumables will [***] of Net Sales of Consumables;"

4. The Company and Columbia acknowledge that the Company gave Columbia notice that terminated Section 5 (including the Amendment Two version of Section 4d(6) of the Agreement) and 6 of Amendment Two. Section 4d shall be amended by adding the following language after subsection (5):

   "(6) [***] on first commercial sale of a Product that [***]."

5. Section 6(a) shall be amended by adding the following language to the end of the provision: "(6) Conduct good faith due diligence on opportunities to develop and commercialize Products that (i) use or incorporate any information, data, or subject matter disclosed in [***] or (ii) are Covered by a Valid Claim of a Patent resulting from [***], including assessing the market opportunity and technical feasibility, and shall share such results with Columbia [***] of Amendment Three Effective Date."

6. Except as expressly set forth in this Third Amendment, the Agreement shall remain in full force and effect. If there is any inconsistency or conflict between this Third Amendment and the Agreement, the provisions of this Third Amendment shall govern and control. This Third Amendment may be executed in any number of counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument. This Third Amendment shall be binding upon, and shall inure to the benefit of, the parties hereto and their respective successors and assigns.

IN WITNESS WHEREOF, the parties hereto have caused this Third Amendment to Agreement to be executed as of the date first above written.

THE TRUSTEES OF COLUMBIA UNIVERSITY IN THE CITY OF NEW YORK

By: /s/ Orin Herskowitz
Name: Orin Herskowitz
Title: Executive Director
Columbia Technology Ventures

[***]

SINGULAR GENOMICS SYSTEMS INC.

By: /s/ Andrew Spaventa
Name: Andrew Spaventa
Title: Chief Executive Officer

Appendix I

EXHIBIT A-3: Patents

[***]

Appendix 2

EXHIBIT C-3: Technical Information

[***]

Exhibit 23.1

Consent of Independent Registered Public Accounting Firm

We consent to the reference to our firm under the caption “Experts” and to the use of our report dated March 19, 2021, in the Registration Statement (Form S-1) and related Prospectus of Singular Genomics Systems, Inc. for the registration of shares of its common stock.

/s/ Ernst & Young LLP

San Diego, California
May 7, 2021