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

FORM 10-Q

☒ QUARTERLY REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the quarterly period ended June 30, 2021

☐ TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the transition period from _____ to _____.

Commission File Number: 001-40443

SINGULAR GENOMICS SYSTEMS, INC.

(Exact name of Registrant as specified in its charter)

Delaware	**81-2948451**
(State or other jurisdiction of incorporation or organization)	**(I.R.S. Employer Identification Number)**
10931 N. Torrey Pines Road, Suite #100 La Jolla, California	**92037**
(Address of principal executive offices)	**(Zip Code)**

(858) 333-7830
(Registrant's telephone number, including area code)

Securities registered pursuant to Section 12(b) of the Act:

Title of each class	Trading Symbol	Name of each exchange on which registered
Common Stock, $0.0001 par value per share	OMIC	The Nasdaq Global Market LLC (Nasdaq Global Select Market)

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes ☐ No ☒

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files).
Yes ☐ No ☐

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. ☐

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes ☐ No ☐

71,556,026 shares of common stock, $0.0001 par value, outstanding as of July 31, 2021.

SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This filing contains forward-looking statements. All statements other than statements of historical facts contained in this report, 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 report 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;
- the impact of COVID-19 on our business;
- 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 our initial public offering;
- the impact of local, regional, and national and international economic conditions and events;
- 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 report. 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 report 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. We undertake no obligation to update publicly any forward-looking statements for any reason after the date of this report to conform these statements to actual results or to changes in our expectations.

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

Summary of Material Risks Associated with Our Business

Our business is subject to a number of risks that if realized could materially affect our business, prospects, operating results and financial condition. These risks are discussed more fully in the “Risk Factors” section of this Quarterly Report on Form 10-Q. These risks include the following:

- 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 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.
- 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.
- 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.
- 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.
- 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.

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PART I-FINANCIAL INFORMATION

Item 1. Financial Statements

SINGULAR GENOMICS SYSTEMS, INC.

Condensed Balance Sheets

(In thousands, except share and par value amounts)

	June 30, 2021 (Unaudited)	December 31, 2020
Assets		
Current assets:		
Cash and cash equivalents	$ 257,268	$ 11,688
Short-term investments	114,400	15,231
Prepaid expenses and other assets	7,201	652
Total current assets	378,869	27,571
Property and equipment, net	$ 3,434	$ 2,368
Restricted cash	687	482
Other long-term assets	990	81
Total assets	$ 383,980	$ 30,502
Liabilities, Convertible Preferred Stock and Stockholders' Equity (Deficit)		
Current liabilities:		
Accounts payable	$ 2,698	$ 427
Accrued expenses	1,809	1,592
Current portion of long term debt, net of issuance costs	3,473	926
Warrant liability	-	451
Other short-term liabilities	172	294
Total current liabilities	8,152	3,690
Long-term debt, net of issuance costs	6,082	8,469
Other long-term liabilities	3,168	714
Total liabilities	17,402	12,873
Commitment and contingencies (Note 7)		
Convertible preferred stock, $0.0001 par value;		
Series Seed, 6,520,790 shares authorized, 0 and 6,520,790 issued and outstanding at June 30, 2021 and December 31, 2020; liquidation preference of $0 and $4,499,998 at June 30, 2021 and December 31, 2020	-	4,486
Series A, 12,932,429 shares authorized, 0 and 12,932,429 issued and outstanding at June 30, 2021 and December 31, 2020; liquidation preference of $0 and $20,000,002 at June 30, 2021 and December 31, 2020	-	19,908
Series B, 19,566,903 shares authorized, 0 and 19,373,169 issued and outstanding at June 30, 2021 and December 31, 2020; liquidation preference of $0 and $44,999,997 at June 30, 2021 and December 31, 2020	-	44,790
Stockholders' Equity (Deficit):		
Common stock, $0.0001 par value; 400,000,000 and 60,272,685 shares authorized, 71,526,327 and 10,816,937 of shares outstanding at June 30, 2021 and December 31, 2020, respectively	7	1
Additional paid-in capital	481,079	1,552
Accumulated other comprehensive gain	17	17
Accumulated deficit	(114,525)	(53,125)
Total stockholders' equity (deficit)	366,578	(51,555)
Total liabilities, convertible preferred stock and stockholders' equity (deficit)	$ 383,980	$ 30,502

See accompanying notes to these unaudited condensed financial statements.

SINGULAR GENOMICS SYSTEMS, INC.

Condensed Statements of Operations and Comprehensive Loss
(Unaudited)
(In thousands, except share and per share amounts)

	Three Months Ended June 30,		Six Months Ended June 30,	
	2021	2020	2021	2020
Operating expenses:				
Research and development	$ 7,682	$ 5,325	$ 14,289	$ 9,351
General and administrative	$ 6,201	$ 1,443	$ 9,855	$ 2,820
Total operating expenses	$ 13,883	$ 6,768	$ 24,144	$ 12,171
Loss from operations	(13,883)	(6,768)	(24,144)	(12,171)
Other income (expense):				
Interest and other income	$ 413	$ 156	$ 543	$ 372
Interest expense	$ (232)	$ (235)	$ (420)	$ (301)
Change in fair value of convertible promissory notes	$ (23,799)	$ -	$ (35,199)	$ -
Change in fair value of warrant liability	$ 22	$ -	$ (2,180)	$ -
Net loss	$ (37,479)	$ (6,847)	$ (61,400)	$ (12,100)
Other comprehensive loss:				
Unrealized (loss) gain on available-for-sale securities	$ 49	$ 572	$ -	$ 30
Comprehensive loss	$ (37,430)	$ (6,275)	$ (61,400)	$ (12,070)
Basic and diluted net loss per share	$ (1.18)	$ (0.65)	$ (2.83)	$ (1.17)
Weighted-average shares used to compute basic and diluted net loss per share	31,628,921	10,572,148	21,696,142	10,382,036

See accompanying notes to these unaudited condensed financial statements.

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SINGULAR GENOMICS SYSTEMS, INC.

Condensed Statements of Preferred Stock and Stockholders' Equity / (Deficit)

(Unaudited)

(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	Accumulated Other Comprehensive	Accumulated	Total Stockholders'
	Shares	Amount	Shares	Amount	Shares	Amount	Shares	Amount	Capital	Gain / (Loss)	Deficit	Equity / (Deficit)
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	-	-	-	-	-	-	151,343	-	92	-	-	92
Issuance of common stock in connection with exercise of stock options	-	-	-	-	-	-	1,855,904	-	995	-	-	995
Stock-based compensation	-	-	-	-	-	-	-	-	1,096	-	-	1,096
Unrealized loss on available- for-sale marketable securities	-	-	-	-	-	-	-	-	-	(49)	-	(49)
Net loss	-	-	-	-	-	-					(23,921)	(23,921)
Balance at March 31, 2021	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)
Conversion of preferred stock into common stock	(6,520,790)	(4,486)	(12,932,429)	(19,90) 8	(19,373,16) 9	(44,79) 0	38,826,388	4	69,180	-	-	69,184
Conversion of the 2021 Notes into common stock	-	-	-	-	-	-	7,531,777	1	165,698	-	-	165,699
Issuance of common stock upon initial public offering, net of issuance costs	-	-	-	-	-	-	11,730,000	1	237,198	-		237,199
Cashless exercise of common stock warrant	-	-	-	-	-	-	117,088	-	2,631			2,631
Vesting of common stock issued for early exercise of stock options	-	-	-	-	-	-	378,146	-	230	-	-	230
Issuance of common stock in connection with exercise of stock options	-	-	-	-	-	-	118,744	-	66	-	-	66
Stock-based compensation	-	-	-	-	-	-	-	-	2,341	-	-	2,341
Unrealized gain on available- for-sale marketable securities	-	-	-	-	-	-	-	-	-	49	-	49
Net loss	-	-	-	-	-	-	-	-	-	-	(37,479)	(37,479)
Balance at June 30, 2021	-	$ -	-	$ -	-	$ -	71,526,327	$ 7	$ 481,079	$ 17	$ (114,525)	$ 366,578

	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	Gain / (Loss)	Deficit	Equity / (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)
Vesting of restricted common stock	-	-	-	-	-	-	420,833	-	-	-	-	-
Vesting of common stock issued for early exercise of stock options	-	-	-	-	-	-	6,445	-	8	-	-	8
Issuance of common stock in connection with exercise of stock options	-	-	-	-	-	-	18,124	-	4	-	-	4
Stock-based compensation	-	-	-	-	-	-	-	-	239	-	-	239
Unrealized loss on available-for-sale marketable securities	-	-	-	-	-	-	-	-	-	(542)	-	(542)
Net loss	-	-	-	-	-	-					(5,253)	(5,253)
Balance at March 31, 2020	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)
Vesting of restricted common stock	-	-	-	-	-	-	229,167	-	-	-	-	-
Vesting of common stock issued for early exercise of stock options	-	-	-	-	-	-	8,143	-	7	-	-	7
Issuance of common stock in connection with exercise of stock options	-	-	-	-	-	-	3,330	-	2	-	-	2
Stock-based compensation	-	-	-	-	-	-	-	-	260	-	-	260
Unrealized gain on available-for-sale marketable securities	-	-	-	-	-	-	-	-	-	572	-	572
Net loss	-	-	-	-	-	-	-	-	-	-	(6,847)	(6,847)
Balance at June 30, 2020	6,520,790	$ 4,486	12,932,429	$ 19,908	19,373,169	$ 44,820	10,749,065	$ 1	$ 960	$ 44	$ (37,280)	$ (36,275)

See accompanying notes to these unaudited condensed financial statements.

SINGULAR GENOMICS SYSTEMS, INC.
Condensed Statements of Cash Flows
(Unaudited)
(In thousands)

	Six Months Ended June 30, 2021	Six Months Ended June 30, 2020
Operating activities		
Net loss	$ (61,400)	$ (12,100)
Adjustments to reconcile net loss to net cash used in operating activities:		
Depreciation	466	270
Stock-based compensation	3,437	499
Change in fair value of convertible promissory notes	35,199	-
Change in fair value of warrant liability	2,180	-
Amortization of discount on short term investments	540	46
Accretion of debt issuance cost	160	105
Changes in operating assets and liabilities:		
Prepaid expenses and other assets	(5,903)	(417)
Other long-term assets	(909)	-
Accounts payable	766	(69)
Accrued expenses	217	467
Other short-term liabilities	(122)	20
Other long-term liabilities	343	(43)
Net cash used in operating activities	(25,026)	(11,222)
Investing activities		
Purchases of short-term investments	(122,655)	(2,037)
Maturities of short-term investments	22,301	12,259
Purchases of property and equipment	(1,473)	(419)
Net cash (used in) / provided by investing activities	(101,827)	9,803
Financing activities		
Proceeds from initial public offering, net of issuance cost	238,644	-
Proceeds from exercise of stock options, net of repurchases	3,494	10
Proceeds from issuance of convertible promisorry notes	130,500	-
Proceeds from long-term debt	-	7,500
Net cash provided by financing activities	372,638	7,510
Increase in cash and cash equivalents and restricted cash	245,785	6,091
Cash and cash equivalents and restricted cash, beginning of year	12,170	5,523
Cash and cash equivalents and restricted cash, end of period	$ 257,955	$ 11,614
Supplemental disclosure for cash activities		
Interest paid	$ 260	$ 161
Supplemental disclosure for non-cash activities		
Vesting of restricted stock	$ 322	$ 15
Warrants issued in connection with issuance of long-term debt	$ -	$ 189
Conversion of preferred stock to common stock	$ 69,184	$ -
Conversion of 2021 Notes to common stock	$ 165,699	$ -
Deferred offering costs in accounts payable	$ 1,445	$ -
Purchase of property plant and equipment included in accounts payable	$ 60	$ 264

See accompanying notes to these unaudited condensed financial statements.

SINGULAR GENOMICS SYSTEMS, INC.
Notes to Condensed Financial Statements
(Unaudited)

1. Description of Business and Basis of Presentation

Description of 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 bench top 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'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 was incorporated in the state of Delaware in June 2016 and has its principal operations in La Jolla, California.

Initial Public Offering

On June 1, 2021, the Company completed its initial public offering ("IPO") in which it sold 11,730,000 shares of common stock (which included 1,530,000 shares that were sold pursuant to the full exercise of the IPO underwriters' option to purchase additional shares) at a public offering price of $22.00 per share. The Company received net proceeds of approximately $237.2 million after deducting offering costs, underwriting discounts, and commissions of $20.9 million.

Concurrent with the completion of the IPO:

- 38,826,388 outstanding shares of convertible preferred stock converted into an equivalent number of shares of common stock;
- outstanding principal and interest amount of convertible promissory notes (the "2021 Notes") converted into 7,531,777 shares of the Company's common stock;
- a warrant to purchase 129,156 shares of convertible preferred stock was adjusted into a warrant to purchase an equivalent number of shares of the Company's common stock.

Liquidity and Capital Resources

The Company has experienced net losses since inception and, as of June 30, 2021 and December 31, 2020, had an accumulated deficit of $114.5 million and $53.1 million, respectively. The Company has a limited operating history and the revenue and income potential of the Company's business are unproven. From incorporation in June 2016 through June 30, 2021, substantially all of the Company's operations have been funded by the sales of equity securities and issuances of debt. As of June 30, 2021, the Company had cash and cash equivalents and short-term investments totaling, in aggregate, $371.7 million. Management expects to continue to incur significant expenses for the foreseeable future and to incur operating losses in the near term while the Company makes investments to support its anticipated growth. 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. The Company believes that its cash and cash equivalents balance as of June 30, 2021 provides sufficient capital resources to continue its operations for at least 12 months from the issuance date of the accompanying unaudited condensed financial statements.

Basis of Presentation and Use of Estimates

The accompanying unaudited condensed financial statements have been prepared in accordance with U.S. generally accepted accounting principles ("GAAP"), for interim financial information and with the instructions to Form 10-Q and Article 10 of Regulation S-X. Accordingly, certain information and disclosures required by GAAP for annual financial statements have been omitted. In the opinion of management, all adjustments, consisting of normal recurring adjustments, considered necessary for a fair presentation have been included. Interim financial results are not necessarily indicative of results anticipated for the full year.

The preparation of the Company's unaudited condensed financial statements 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 unaudited condensed 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.

Impact of the COVID-19 Pandemic

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

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 three 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 the cash flows as of June 30, 2021 and December 31, 2020 (in thousands):

	June 30, 2021	December 31, 2020
Cash and cash equivalents	$ 257,268	$ 11,688
Restricted cash	687	482
Total	$ 257,955	$ 12,170

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 June 30, 2021 and December 31, 2020, short-term investments primarily consisted of corporate debt securities, and asset backed 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 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 June 30, 2021 and December 31, 2020 (in thousands):

	June 30, 2021		
	Amortized Cost	Gross Unrealized Gains (Losses)	Estimated Fair Value
Asset backed securities	38,042	(8)	38,034
Corporate debt securities	76,341	25	76,366
	$ 114,383	$ 17	$ 114,400

	December 31, 2020		
	Amortized Cost	Gross Unrealized Gains (Losses)	Estimated Fair Value
Asset backed securities	3,938	5	3,943
Corporate debt securities	11,276	12	11,288
	$ 15,214	$ 17	$ 15,231

The following table summarizes contractual maturities of available-for-sale debt securities held at June 30, 2021 and December 31, 2020 (in thousands):

	June 30, 2021	December 31, 2020
	Estimated Fair Value	Estimated Fair Value
Due within one year	$ 62,981	$ 9,559
After one but within five years	$ 51,419	5,672
Total	$ 114,400	$ 15,231

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 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 had deferred offering costs consisting of legal and accounting fees directly attributable to its initial public offering. In June, 2021 the Company completed its initial public offering and offset $2.8 million of IPO costs against the proceeds. As of June 30, 2021, $1.4 million of deferred IPO costs were included in accounts payable on the Company's 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 six months ended June 30, 2021 and June 30, 2020, respectively.

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 2021 Notes and warrant to purchase convertible preferred stock. Changes in fair value of the warrant to purchase convertible preferred stock and the 2021 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 2021 Notes were recognized as incurred and not deferred. In June 2021 in connection with the IPO completion, the 2021 Notes converted into the Company's common stock and a warrant to purchase shares of convertible preferred stock was adjusted into a warrant to purchase an equivalent number of shares of the Company's common stock.

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.

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 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 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.

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.

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***— For grants prior to the Company's IPO in June 2021, when there was no public market for the Company's common stock, the Company's grant date fair market value 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, 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 for that period. For all grants subsequent to the IPO, the fair value of common stock was determined by using the closing price per share of the Company's common stock on the grant date as reported on the Nasdaq Global Select Market.
- ***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***— The Company had no publicly available stock price information prior to its IPO and limited publicly available stock price information subsequent to its IPO and therefore the Company has used the historical volatility of the stock price of similar publicly traded peer companies. The historical volatility is calculated based on a period of time commensurate with the expected term assumptions.
- ***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.

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.

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, without consideration for potentially dilutive securities. For periods prior to the IPO, 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.

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 interim periods within fiscal years beginning after December 15, 2022 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, and interim periods within fiscal years beginning after December 15, 2021. 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, 2021, 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 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). The fair value of these warrants was remeasured at each financial reporting period with any changes in fair value being recognized as a component of other income (expense) in the statements of operations and comprehensive loss. In connection with completion of the initial public offering in June 2021, we performed the final remeasurement of the warrant liability. The value for the warrant liability balance was based on significant inputs not observable in the market, which represents a Level 3 measurement within the fair value hierarchy. None of the Company's assets or liabilities are recorded at fair value on a recurring basis, except for short-term investments and 2021 Notes and the warrant prior to the conversion. No transfers between levels have occurred during the periods presented.

The following tables summarize the Company's assets and liabilities measured at fair value on a recurring basis as of June 30, 2021 and December 31, 2020 and (in thousands):

	June 30, 2021			
Assets:	**Level 1**	**Level 2**	**Level 3**	**Total**
Money market funds (cash equivalents)	$ 4,036	$ -	$ -	$ 4,036
Asset backed securities		38,042	-	38,042
Corporate debt securities	$ -	$ 72,304	$ -	$ 72,304
Total Assets	$ 4,036	$ 110,346	$ -	$ 114,382

	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 liability	$ -	$ -	$ 451	451
Total liabilities	$ -	$ -	$ 451	$ 451

The following table provides reconciliation for all liabilities measured at fair value using significant unobservable inputs (Level 3) for the six months ended June 30, 2021 (in thousands):

Balance at December 31, 2020	$	451
Change in fair value of warrant through conversion	$	2,180
Reclassification of warrant liability into equity	$	(2,631)
Balance at June 30, 2021	$	-

Balance at December 31, 2020	$	-
Fair value of convertible promissory notes at issuance	$	130,500
Change in fair value of convertible promissory notes through conversion	$	35,199
Conversion of convertible promissory notes	$	(165,699)
Balance at June 30, 2021	$	-

In March 2020 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 for the six months ended June 30, 2021 and June 30, 2020 was $2.2 million and $0 million, respectively. In connection with the completion of the Company's IPO in June 2021, in accordance with the original terms the warrant instrument, the Company adjusted the SVB warrant into a warrant to purchase common stock of the Company (Note 10).

Below are the assumptions used for the Black-Scholes option pricing valuation model for the fair value of the warrant liability as of the conversion date and December 31, 2020:

Assumption	At conversion date	December 31, 2020
Fair Value	22.00	4.59
Expected volatility	62.00%	60.00%
Expected term (years)	8.47	8.99
Expected dividend yield	0.00%	0.00%
Risk-free interest rate	1.62%	0.93%

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 2021 Notes in a private placement transaction. The 2021 Notes accrued 6% interest per annum. 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 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 through the conversion of the 2021 Notes. The Company 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, 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. In June, in connection with the completion of the Company's IPO, the 2021 Notes converted into 7,531,777 shares of the Company's common stock. Based on the terms of the agreement, the 2021 Notes converted at a 20% discount from the actual offering price. Prior to the conversion, the Company recorded a final fair value adjustment of the 2021 Notes using the Company's common stock price at the IPO.

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.

As of June 30, 2021, the derivative liabilities no longer exist as a result of the automatic conversion of the convertible preferred stock upon the Company's IPO and the warrant liabilities have been reclassified into equity after the warrant became exercisable for common stock in connection with the Company's IPO.

4. Property and Equipment, Net

Property and equipment, net, consisted of the following (in thousands):

	Useful Life	June 30, 2021	December 31, 2020
Equipment	5 years	$ 3,480	$ 2,642
Computers and software	3 years	1,545	851
Furniture and fixtures	3 years	80	80
Leasehold improvements	4 years or less	35	35
		5,140	3,608
Less: Accumulated depreciation		(1,706)	(1,240)
Total property and equipment, net		$ 3,434	$ 2,368

5. Accrued Expenses

	June 30, 2021	December 31, 2020
Accrued compensation	$ 1,247	$ 1,234
Accrued professional fees	206	74
Accrued research and development costs	18	44
Accrued other liabilities	338	240
Total accrued liabilities	$ 1,809	$ 1,592

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. In connection with the completion of the Company's IPO in June 2021, in accordance with the original terms the warrant instrument, the Company adjusted the SVB warrant into a warrant to purchase common stock of the Company. As of June 30, 2021, the warrants were net exercised into 117,088 shares of common stock of the Company.

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 June 30, 2021 and December 31, 2020 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 June 30, 2021 and December 31, 2020, the debt issuance costs related to the Loan were $0.5 million and $0.6 million, respectively, 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.

The long-term debt and unamortized discount balances as of June 30, 2021 and December 31, 2020 are shown below (in thousands):

	June 30, 2021	December 31, 2020
Total long-term debt	$ 10,000	$ 10,000
Less unamortized discount	(445)	(605)
Total long-term debt, net	9,555	9,395
Less current portion of long-term debt	(3,473)	(926)
Long-term debt, net of current portion	$ 6,082	$ 8,469

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 June 30, 2021 and December 31, 2020, the Company was in compliance with all covenants under the Loan Agreement and there had been no material adverse change in its business.

Future minimum payments of outstanding principal and interest under the outstanding draw-down of $10.0 million on the Loan consist of the following:

As of June 30, 2021	
2021 (six months remaining)	1,544
2022	5,386
2023	4,393
Total future minimum payments	11,323
Less: Interest payments	(1,323)
Long-term debt	10,000

In February 2021, the Company issued the 2021 Notes to various investors, in the aggregate principal amount of $130.5 million. The 2021 Notes accrued interest at 6% per annum. 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 six months ended June 30, 2021, the Company recognized $35.2 million of change in fair value of convertible promissory notes in the statements of operations and

comprehensive loss related to increases in the fair value of the 2021 Notes. In June 2021, in connection with the completion of the Company's IPO, the Notes were converted into 7,531,777 shares of the Company's common stock.

7. Commitments and Contingencies

Columbia License Agreement and Sponsored Research Agreement

In 2016, the Company entered into an exclusive license agreement (the "License Agreement") with The Trustees of Columbia University ("Columbia"). Under the License Agreement, the Company acquired the exclusive right to use certain patents, materials and information. The License Agreement includes a number of diligence obligations that require the Company to use commercially reasonable efforts to research, discover, develop and market products covered by the patents, materials and information licensed by Columbia by certain dates. The License Agreement provides for the potential payment to Columbia of development milestones and royalties on net sales of products covered by the licensed patents, materials or information. The license fee was immaterial for all periods presented. The Company does not believe that its G4 or PX Instruments or the associated consumables, as the Company presently intends to commercialize them, fit within the definitions in the License Agreement that would require the Company to make milestone payments or pay royalties on sales of these products and as a result no amounts have been accrued to date. However, there is no assurance that Columbia will agree with the Company's interpretation of the License Agreement or its payment obligations thereunder or agree that the Company has complied with its other obligations under the License Agreement.

In addition to the License Agreement, the Company entered into a sponsored research agreement (the "Research Agreement") to fund a research program with Columbia. 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 San Diego, 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.

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.

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.

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 gained access to the leased space in June 2021 and began recognizing rent expense under this lease at that time.

In April 2021, the Company amended its current lease for an office space in La Jolla, California. The lease amendment includes extension of the current lease expiration date by 24-months subsequent to commencement of new HQ lease, expansion of the existing premises for additional space and certain rent escalations.

The Company recorded rent expense of $0.8 million and $0.3 million for the six months ended June 30, 2021 and June 30, 2020, respectively.

Future minimum payments under the Company's non-cancelable operating leases are as follows (in thousands):

As of June 30, 2021	Operating Lease
2021 (six months remaining)	1,166
2022	6,265
2023	7,892
2024	6,394
2025 and thereafter	42,122
	$ 63,839

As permitted under Delaware law and in accordance with our bylaws, we indemnify our officers and directors for certain events or occurrences while the officer or director is or was serving in such capacity. We are also party to indemnification agreements with our officers and directors. We believe the fair value of the indemnification rights and agreements is minimal. Accordingly, we have not recorded any liabilities for these indemnification rights and agreements as of June 30, 2021.

8. Convertible Preferred Stock

Prior to its conversion to common stock in connection with the Company's IPO, the convertible preferred stock was classified as temporary, or mezzanine, equity on the accompanying condensed balance sheets since the shares contained certain redemption features that were not solely within the control of the Company. The Company had not previously accreted the convertible preferred stock to its redemption value since the shares were not redeemable and redemption was not deemed to be probable.

	As of June 30, 2021				
	Shares Authorized	Shares issued and Converted	Issue Period	Price Per Share	Aggregate Liquidation Preference
Series Seed	6,520,790	6,520,790	2016	$ 0.6901	$ 4,500,000
Series A	12,932,429	12,932,429	2017	1.5465	20,000,000
Series B	19,566,903	19,373,169	2019	2.3228	45,000,000
	39,020,122	38,826,388			$ 69,500,000

In connection with the completion of the Company's IPO in June 2021, all of the outstanding shares of convertible preferred stock were automatically converted into 38,826,388 shares of the Company's common stock.

9. Common Stock

The Company is authorized to issue up to 400,000,000 shares of its common stock, each having a par value of $0.0001 per share.

Common stock reserved for future issuance consisted of the following:

Stock options issued and outstanding	4,746,538
Authorized for future option grants	7,911,083
Authorized for issuance under the ESPP Plan	730,000
Balance at June 30, 2021	13,387,621

10. Common Stock Warrant

As discussed in Note 6, the Company issued a warrant to SVB concurrently with the Loan Agreement, which warrant was later amended. Upon the closing of the Company's IPO in June 2021, warrants to purchase shares of Series B Preferred Stock automatically converted into warrants to purchase shares of our Common Stock. The preferred stock warrant liability was reclassified from current liabilities to equity, as the warrants met the definition of an equity instrument. As a result, the fair value of the preferred stock warrants as of June 1, 2021, estimated to be $2.6 million using the Black-Scholes option-pricing model, was reclassified to additional paid-in

capital. At that time the warrant became exercisable for 129,156 shares of common stock of the Company at $2.3228 per share. As of June 30, 2021 the warrant has been net exercised into 117,088 shares of common stock of the Company.

11. Stock Incentive Plan

2021 and 2016 Equity Incentive Plans

The Company's Board of Directors and stockholders adopted and approved the Company's 2021 Equity Incentive Plan (the "2021 Plan") in May 2021. The 2021 Plan replaced the Company's 2016 Equity Incentive Plan adopted in September 2016 (the "2016 Plan"), however, awards outstanding under the 2016 Plan will continue to be governed by their existing terms. The number of shares of the Company's common stock that were initially available for issuance under the 2021 Plan equaled the initial sum of 7,500,000 shares plus 832,980 shares that were then available for issuance under the 2016 Plan. The 2021 Plan provides for the following types of awards: incentive and non-statutory stock options, stock appreciation rights, restricted shares, and restricted stock units.

The number of shares of common stock reserved for issuance under the 2021 Plan are increased automatically on the first business day of each fiscal year, commencing in 2022 and ending in 2031, by a number equal to the *lesser of*: (i) 5% of the shares of common stock outstanding on the last business day of the prior fiscal year; or (ii) the number of shares determined by the Company's Board of Directors. In general, to the extent that any awards under the 2021 Plan are forfeited, terminate, expire or lapse without the issuance of shares, or if the Company reacquires the shares subject to awards granted under the 2021 Plan, those shares will again become available for issuance under the 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.

Stock-based awards are governed by agreements between the Company and the recipients. Incentive stock options and nonqualified stock options may be granted under the 2021 Plan (and previously the 2016 Plan) at an exercise price of not less than 100% of the fair market value of common stock on the respective date of grant. The grant date is the date the terms of the award are formally approved by the Company's Board of Directors or its designee.

The following table summarizes stock option activity under the Plan since December 31, 2020:

	Number of Options	Weighted average exercise price (per share)	Weighted average remaining contract term (in years)
Outstanding at December 31, 2020	7,274,953	$ 0.57	8.81
Exercisable at December 31, 2020	7,274,953	$ 0.57	8.81
Granted	2,855,700	$ 8.62	
Exercised	(5,381,217)	$ 0.65	
Canceled / Forfeited	(70,398)	$ 3.43	
Outstanding at June 30, 2021	4,679,038	$ 5.35	8.88
Exercisable at June 30, 2021	3,335,363	$ 2.41	8.52

The 2016 Plan allows for the early exercise of awards to plan participants 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 June 30, 2021 and December 31, 2020, the Company has a liability for the cash received from the early exercise of stock options in the amount of $2.2 million and $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 June 30, 2021 and December 31, 2020, there were 2,958,410 and 141,955 respectively, of early exercised stock options that remain subject to the Company's repurchase right.

ESPP Shares

In May 2021, the Company's Board of Directors approved the 2021 Employee Stock Purchase Plan (the "ESPP"). A total of 730,000 shares of common stock was initially reserved for issuance under the ESPP. The price at which common stock is purchased

under the ESPP is equal to 85% of the fair market value of the common stock on the first day of the offering period or purchase date, whichever is lower.

During the six months ended June 30, 2021, no shares of common stock were issued under the ESPP.

Stock-Based Compensation Summary

The classification of equity-based compensation expense is summarized as follows (in thousands):

	Three Months Ended June 30,		Six Months Ended June 30,	
	2021	2020	2021	2020
Research and development	$ 581	$ 55	$ 806	$ 93
General and administrative	1,760	205	2,631	406
Total equity-based compensation expense	$ 2,341	$ 260	$ 3,437	$ 499

As of June 30, 2021 and June 30, 2020, total unrecognized stock-based compensation expense was $32.1 and $3.1 million and is expected to be recognized over the weighted average period of approximately 2.95 and 3.22 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 June 30, 2021 and June 30, 2020:

	Six Months Ended June 30,	
Assumption	**2021**	**2020**
Expected volatility	78.68%	60.00%
Expected term (years)	5.5 - 6.1	5.3 - 6.1
Expected dividend yield	0.00%	0.00%
Risk-free interest rate	0.90%	0.72%
Forfeiture rate	0.00%	1.00%

12. Net Loss Per Share

The following table sets forth the computation of basic and diluted net loss per share for the periods indicated (in thousands, except share and per share data):

	Three Months Ended June 30,		Six Months Ended June 30,	
	2021	2020	2021	2020
Net loss attributable to common stockholders	$ (37,479)	$ (6,847)	$ (61,400)	$ (12,100)
Weighted average shares used in computing net loss per share attributable to common stockholders, basic and diluted	31,628,921	10,572,148	21,696,142	10,382,036
Net loss per share attributable to common stockholders, basic and diluted	$ (1.18)	$ (0.65)	$ (2.83)	$ (1.17)

The following outstanding shares of common stock equivalents were excluded from the computation of diluted net loss per share for the periods presented because including them would have had an anti-dilutive effect:

	June 30,	
	2021	2020
Employee stock options	4,746,538	7,015,851
Warrants for Series B convertible preferred stock	-	129,156
Series Seed convertible preferred stock	-	6,520,790
Series A convertible preferred stock	-	12,932,429
Series B convertible preferred stock	-	19,373,169
	4,746,538	45,971,395

Item 2. 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 report. 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 report. See the section titled "Special Note Regarding Forward-Looking Statements" elsewhere in this report.

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 have initiated an early access program and anticipate 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 June 30, 2021, we had 124 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.

Corporate and Financial Overview

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 six months ended June 30, 2021, we incurred a net loss of $61.4 million and used $25.0 million of cash in our 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. As of June 30, 2021, we had an accumulated deficit of $114.5 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.

On June 1, 2021, we completed our initial public offering in which we sold 11,730,000 shares of its common stock (which includes 1,530,000 shares that were offered and sold pursuant to the full exercise of the underwriters' option to purchase additional shares) at a public offering price of $22.00 per share, resulting in net proceeds of approximately $237.2 million after deducting offering costs, underwriting discounts and commissions of $20.9 million.

From the date of our incorporation through June 30, 2021, we have financed our operations primarily through private placements of convertible preferred stock and convertible promissory notes and the net proceeds from our IPO. We have raised aggregate net proceeds of approximately $436.7 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 June 30, 2021, we had cash and cash equivalents and short-term investments totaling $371.7 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.

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 License Agreement) with the Trustees of Columbia University in the City of New York (Columbia). The License Agreement includes a number of diligence obligations that require us to use commercially reasonable efforts to research, discover, develop and market Patent Products and/or Other Products (as defined in the License Agreement) by certain dates. Under the License Agreement, we pay an annual license fee that increases each year, until it reaches a low six digit fee for the fifth year, and for each subsequent year, for so long as the License Agreement remains in force. For any products within the scope of the 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 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 License Agreement. As of June 30, 2021, we have paid an aggregate of $0.1 million to Columbia pursuant to the terms of the License Agreement.

We do not believe that our G4 or PX Instruments or the associated consumables, as we presently intend to commercialize them, fit within the definitions of Patent Products or Other Products as defined in the License Agreement. As a result, we do not believe that we will be required to make milestone payments or pay royalties on sales of these products. However, in the future, we may decide to incorporate features covered by one or more licensed patent(s) or directly use or incorporate materials and/or technical information provided by Columbia, such that we would incur milestone and royalty obligations under the License Agreement.

We are currently in discussions with Columbia related to the application of the License Agreement to our G4 and PX Integrated Solutions and our efforts to satisfy the diligence obligations under the License Agreement.

There is no assurance that Columbia will agree with our interpretation of the License Agreement or our payment obligations thereunder or agree that we have complied with our other obligations under the License Agreement.

In addition to the License Agreement, the Company entered into a sponsored research agreement (the Research Agreement) to fund a research program with Columbia. 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.

COVID-19 Pandemic

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 we could be adversely impacted by health epidemics such as COVID-19.

Revenue

We have not generated any revenue from product sales to date and may not do so in the near future.

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 and payroll tax credit received related to our research and development activities.

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 2021 Notes

Prior to the IPO, we accounted 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 adjusted the carrying value of such notes liability to its estimated fair value at the end of each reporting period through conversion, with increases in fair value recorded as other income or expense in the statements of operations.

Change in Fair Value of Warrant Liability

Prior to the IPO, we accounted 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 adjusted the carrying value of such warrant liability to its estimated fair value at the end of each reporting period through conversion, 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 June 30, 2021 And 2020

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

	Three Months Ended June 30,			
	2021	2020	$ Change	% Change
	(in thousands)			
Operating expenses:				
Research and development	$ 7,682	$ 5,325	$ 2,357	44.3%
General and administrative	6,201	1,443	4,758	329.7%
Loss from operations	$ (13,883)	$ (6,768)	$ 7,115	-105.1%
Interest and other income	413	156	(257)	-164.7%
Interest expense	(232)	(235)	(3)	1.3%
Change in fair value of convertible promissory notes	(23,799)	-	23,799	100.0%
Change in fair value of warrant liability	22	-	(22)	-100.0%
Net loss	$ (37,479)	$ (6,847)	$ 30,632	-447.4%

Research and Development Expenses

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

	Three Months Ended June 30,			
	2021	2020	$ Change	% Change
	(in thousands)			
Research and development	$ 7,682	$ 5,325	2,357	44.3%

Research and development expenses increased by $2.4 million, or 44.3%, from the three months ended June 30, 2020 to the three months ended June 30, 2021. The increase was primarily due to an increase in product development efforts related to our G4 Integrated Solution and PX Beta development, including $1.6 million in employee compensation costs, stock-based compensation and other related costs as a result of an increase in research and development personnel, $0.8 million related to product testing and supplies used for in-house research, $0.3 million related to the expansion of facilities and maintenance and $0.2 million in professional and consulting fees. These amounts were offset by a decrease in other product research and development areas of $0.9 million.

General and Administrative Expenses

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

	Three Months Ended June 30,			
	2021	2020	$ Change	% Change
	(in thousands)			
General and administrative	$ 6,201	$ 1,443	4,758	329.7%

General and administrative expenses increased by $4.8 million, or 329.7%, from the three months ended June 30, 2020 to the three months ended June 30, 2021. The increase was primarily due to a $3.8 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 to support the growth of the Company. Other increases include $0.6 million in professional and consulting fees related to insurance, accounting and audit services and corporate legal matters.

Other Income (Expense)

	Three Months Ended June 30,			
	2021	2020	$ Change	% Change
	(in thousands)			
Interest and other income	$ 413	$ 156	$ 257	164.7%
Interest expense	(232)	(235)	3	-1.3%
Change in fair value of convertible promissory notes	(23,799)	-	(23,799)	100.0%
Change in fair value of warrant liability	22	-	22	-100.0%

Other expense increased by $23.5 million for the three months ended June 30, 2021 compared to the three months ended June 30, 2020, primarily due to increase in the fair value of our convertible promissory notes by $23.8 million.

Comparison of the Six Months Ended June 30, 2021 And 2020

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

	Six Months Ended June 30,			
	2021	2020	$ Change	% Change
	(in thousands)			
Operating expenses:				
Research and development	$ 14,289	$ 9,351	$ 4,938	52.8%
General and administrative	9,855	2,820	7,035	249.5%
Loss from operations	$ (24,144)	$ (12,171)	$ 11,973	-98.4%
Interest and other income	543	372	(171)	-46.0%
Interest expense	(420)	(301)	119	-39.5%
Change in fair value of convertible promissory notes	(35,199)	-	35,199	100.0%
Change in fair value of warrant liability	(2,180)	-	2,180	100.0%
Net loss	$ (61,400)	$ (12,100)	$ 49,300	-407.4%

Research and Development Expenses

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

	Six Months Ended June 30,			
	2021	2020	$ Change	% Change
	(in thousands)			
Research and development	$ 14,289	$ 9,351	4,938	52.8%

Research and development expenses increased by $4.9 million, or 52.8%, from the six months ended June 30, 2020 to the six months ended June 30, 2021. The increase was primarily due to an increase in product development efforts related to our G4 Integrated Solution, including $2.7 million in employee compensation costs, stock-based compensation and other related costs as a result of an increase in research and development personnel, $0.6 million in laboratory materials, supplies and reagents used for in-house research, $0.4 million related to the expansion of facilities and maintenance and $0.3 million in professional and consulting fees.

General and Administrative Expenses

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

	Six Months Ended June 30,			
	2021	2020	$ Change	% Change
	(in thousands)			
General and administrative	$ 9,855	$ 2,820	7,035	249.5%

General and administrative expenses increased by $7.04 million, or 249.5%, from the six months ended June 30, 2020 to the six

months ended June 30, 2021. The increase was primarily due to a $4.9 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 to support the growth of the company. Other increases include $1.1 million in professional and consulting fees related to insurance, accounting and audit services and corporate legal matters.

Other Income (Expense)

	Six Months Ended June 30,			
	2021	2020	$ Change	% Change
	(in thousands)			
Interest and other income	$ 543	$ 372	$ 171	46.0 %
Interest expense	(420)	(301)	(119)	39.5 %
Change in fair value of convertible promissory notes	(35,199)	-	(35,199)	100.0 %
Change in fair value of warrant liability	(2,180)	-	(2,180)	100.0 %

Other expense increased by $37.3 million for the six months ended June 30, 2021 compared to the six months ended June 30, 2020, primarily due to increase in the fair value of our convertible promissory notes by $35.2 million in fair value of warrant liabilities by $2.2 million.

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. Since inception our operations have been funded primarily through the sale and issuance of convertible preferred stock, convertible promissory notes and proceeds. 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 six months ended June 30, 2021, we incurred a net loss of $61.4 million and used $25.0 million of cash in 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. As of June 30, 2021, we had an accumulated deficit of $114.5 million. As of June 30, 2021, we had cash and cash equivalents and short-term investments totaling, in aggregate, $371.7 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 report. 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 sets forth the primary sources and uses of cash, cash equivalents and restricted cash for each of the periods presented below:

	Six Months Ended June 30,	
	2021	2020
	(in thousands)	
Net cash provided by (used in)		
Operating activities	$ (25,026)	$ (11,222)
Investing activities	(101,827)	9,803
Financing activities	372,638	7,510
Net increase in cash and cash equivalents	$ 245,785	$ 6,091

Operating Activities

During the six months ended June 30, 2021, cash used in operating activities was $25.0 million, attributable to a net loss of $61.4 million, offset by non-cash charges of $42.0 million and by a net change in our net operating assets and liabilities of $5.6 million. Non-cash charges primarily consisted of $35.2 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 $3.4 million.

During the six months ended June 30, 2020, cash used in operating activities was $11.2 million, attributable to a net loss of $6.8 million, offset by non-cash charges of $0.9 million. Non-cash charges primarily consisted of stock-based compensation expense of $0.5 million and $0.3 million of depreciation.

Investing Activities

During the six months ended June 30, 2021, cash used in investing activities was $101.8 million, which related to purchases of available-for-sale securities of $122.7 million, net of proceeds from maturities of available-for-sale securities of $22.3 million, in addition to $1.5 million in payments related to purchases of property and equipment.

During the six months ended June 30, 2020, cash provided by investing activities was $9.8 million, which related to maturities of available-for-sale securities of $12.3 million, net of purchases of $2.0 million, in addition to $0.4 million in payments related to purchases of property and equipment.

Financing Activities

During the six months ended June 30, 2021, cash provided by financing activities was $372.6 million, which was primarily related to the net proceeds from the IPO of $238.6 million, proceeds from the issuance of the 2021 Notes of $130.5 million and cash received related to exercise of stock options of $3.5 million.

During the six months ended June 30, 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. In connection with the completion of our IPO in June 2021, we adjusted the SVB warrant into a warrant to purchase common stock of the Company. As of June 30, 2021, the warrants were net exercised into 117,088 shares of our common stock.

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 June 30, 2021 and December 31, 2020 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 accrued interest at 6% per annum. . In connection with the completion of the our IPO the 2021 Notes converted into 7,531,777 shares of our common stock.

Critical Accounting Policies, Significant Judgments and Use of Estimates

Our management’s discussion and analysis of our financial condition and results of operations is based on our financial statements, which have been prepared in accordance with GAAP. The preparation of financial statements requires us to make estimates and judgements that affect the reported amounts of assets, liabilities, costs and expenses and related disclosures. We base our estimates on historical experience and on various other assumptions that we believe to be reasonable under the circumstances. Change sin estimates are reflected in reported results for the period in which they become known. Actual results could differ significantly from the estimates made by our management.

There have been no material changes to our critical accounting policies and estimates from those disclosed in our financial statements and the related notes and other financial information included in our Prospectus for our IPO filed pursuant to Rule 424(b)(4) under the Securities Act with the SEC on May 24, 2021.

Recent Accounting Pronouncements

A description of changes in 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 report.

Off-Balance Sheet Arrangements

Since our inception, we have not engaged in any off-balance sheet arrangements, as defined in the rules and regulations of the SEC.

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 report 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 report, 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.

Item 3. 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 $371.7 million and $26.9 million as of June 30, 2021 and December 31, 2020, respectively, which came from the net proceeds from our IPO, 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 report.

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 three months ended June 30, 2021 and year ended December 31, 2020. 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 report.

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 report.

Item 4. Controls and Procedures

Evaluation of Disclosure Controls and Procedures

Our management, with the participation of our Principal Executive Officer and our Principal Financial Officer, has evaluated the effectiveness of our disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act of 1934, as amended ("Exchange Act")) as of the end of the period covered by this report. Based upon that evaluation, our Principal Executive Officer and Principal Financial Officer concluded that, as of the end of the period covered by this report, our disclosure controls and procedures were effective to provide reasonable assurance that information required to be disclosed by us in the reports that we file or submit under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the SEC's rules and forms and to provide reasonable assurance that such information is accumulated and communicated to our management, including our Principal Executive Officer and Principal Financial Officer, as appropriate, to allow timely decisions regarding required disclosure.

Changes in Internal Control Over Financial Reporting

There were no changes in our internal control over financial reporting (as defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act) that occurred during the period covered by this report that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting. Only a small number of our employees are working remotely and we have not experienced any material impact on our internal control over financial reporting due to the COVID-19 pandemic. We are continually monitoring and assessing the COVID-19 situation on our internal controls to minimize the impact on their design and operating effectiveness.

Inherent Limitations on Effectiveness of Controls

Our management, including our Principal Executive Officer and Principal Financial Officer, do not expect that our disclosure controls or our internal control over financial reporting will prevent all errors and all fraud. A control system, no matter how well conceived and operated, can provide only reasonable, not absolute, assurance that the objectives of the control system are met. Further, the design of a control system must reflect the fact that there are resource constraints, and the benefits of controls must be considered relative to their costs. Because of the inherent limitations in all control systems, no evaluation of controls can provide absolute assurance that all control issues and instances of fraud, if any, have been detected. These inherent limitations include the realities that judgments in decision-making can be faulty, and that breakdowns can occur because of a simple error or mistake. Additionally, controls can be circumvented by the individual acts of some persons, by collusion of two or more people or by management override of the controls. The design of any system of controls is also based in part upon certain assumptions about the likelihood of future events, and there can be no assurance that any design will succeed in achieving its stated goals under all potential future conditions, over time, controls may become inadequate because of changes in conditions, or the degree of compliance with policies or procedures may deteriorate. Because of the inherent limitations in a cost-effective control system, misstatements due to error or fraud may occur and not be detected.

PART II—OTHER INFORMATION

Item 1. Legal Proceedings

We are not currently a party to any material legal proceedings. 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.

Item 1A. Risk Factors

Investing in our common stock is speculative and involves a high degree of risk. You should consider and read carefully all of the risks and uncertainties described below, together with the all of the other information contained in this report, including the section titled "Management's Discussion and Analysis of Financial Condition and Results of Operations" and our financial statements and the related notes, before investing in our common stock. The risks and uncertainties described below are on the only ones we face. Additional risks and uncertainties not currently known to us or that we currently deem to be immaterial also may materially adversely affect our business, financial condition and/or operating results. 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 report 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. See "Special Note Regarding Forward-Looking Statements."

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 six months ended June 30, 2021 was $61.4 million and for year ended December 31, 2020 was $27.9 million. As of June 30, 2021, we had an accumulated deficit of $114.5 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 have initiated an early access program and anticipate 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., 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 have initiated an early access program and anticipate 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 June 30, 2021, we had an accumulated deficit of $114.5 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 were previously 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 have initiated an early access program and anticipate 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;

- the continued effect and lasting impact of the COVID-19 pandemic;
- 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.

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 report and, (ii) with the additional funds from the net proceeds of our IPO, 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 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 report.

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 June 30, 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 June 30, 2020 to June 30, 2021, the number of our full-time employees increased from 100 to 169. 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. As a public company, 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 or other actions by Columbia, which could harm our business, results of operations and financial condition.

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 License Agreement). Under the 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 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 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 License Agreement.

We do not believe that our G4 or PX Instruments or the associated consumables, as we presently intend to commercialize them, fit within the definitions of Patent Products or Other Products as defined in the License Agreement. As a result, we do not believe that we will be required to make milestone payments or pay royalties on sales of these products or any associated consumables or services based on our current commercialization plans. However, in the future, we may decide to incorporate features covered by one or more licensed patent(s) or directly use or incorporate materials and/or technical information provided by Columbia, such that we would incur milestone and royalty obligations under the License Agreement.

The License Agreement includes a number of diligence obligations that require us to use commercially reasonable efforts to research, discover, develop and market Patent Products and/or Other Products by certain dates. To the extent that we do not commercialize a Patent Product or Other Product, Columbia may contend that we have not complied with our diligence obligations under the License Agreement. In such case, Columbia could take the position that the License Agreement should convert to a non-exclusive license or pursue actions to terminate the License Agreement alleging that we have not satisfied our diligence obligations. Columbia could also file additional claims to the pending patent applications they licensed to us to attempt to cause our products to become Patent Products. Columbia could also disagree with our interpretation of our milestone and royalty obligations under the License Agreement and contend that a failure to make milestone payments or pay royalties constitutes a breach of the License Agreement. We are currently engaged in discussions with Columbia regarding the application of the License Agreement to our products and our efforts to satisfy the diligence obligations under the License Agreement. There is no assurance that Columbia will agree with our interpretation of the License Agreement or our payment obligations thereunder or agree that we have complied with our diligence obligations.

Columbia has a right to pursue a termination of the License Agreement in the event we become insolvent or otherwise cease operations, in the event we materially breach our obligations under the 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 License Agreement. For example, Columbia may assert that we have breached the License Agreement if it disagrees with our determination that our G4 and PX Instruments and the associated consumables do not fit within the definitions of Patent Products or Other Products. In addition, to the extent that we do not commercialize a Patent or Other Product, Columbia may take the position that we have not complied with our diligence obligations under the License Agreement. There is no assurance that we can satisfy our obligations under the License Agreement, or that we and Columbia will agree on whether or not we have satisfied our obligations under the License Agreement, including whether any royalty or milestones, or the amount thereof, are payable under the terms of the License Agreement or whether we have satisfied our diligence obligations. 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 License Agreement, Columbia could exercise its right to assert a breach of contract, convert the License Agreement to a non-exclusive license and/or pursue actions to terminate the License Agreement. Further, Columbia could seek to file additional claims to the pending patent applications they licensed to us to attempt to cause our products to become Patent Products. If we are required to defend against breach of contract or other claims and actions asserted by Columbia or if Columbia is successful in terminating the License Agreement or converting the License Agreement to a non-exclusive license, our business may be adversely affected. Further, if we are required to make additional milestone payments or pay Columbia royalties on our G4 and PX Instruments, and the consumables we have developed to date, our resulting operations and financial condition may 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 Ownership of our Common Stock

There has been no prior public market for our common stock, and we have a limited market for our common stock. The stock price of our common stock has been and may continue to be volatile or may decline regardless of our operating performance.

There has been no public market for our common stock prior to our IPO and we currently have a limited trading market for our common stock. An active or liquid market in our common stock may not develop 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.

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. All of the shares of common stock sold in our IPO are available for sale in the public market, unless purchased by our affiliates or existing stockholders. Substantially all of our existing 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 subject to certain exceptions. These shares will become available to be sold on November 23, 2021. 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.

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.

Immediately following our IPO, our officers, directors and the holders of more than 5% of our outstanding stock collectively beneficially own approximately 51.3% of our common stock. 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 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 our IPO, (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 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 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 could make a merger, tender offer or proxy contest difficult, thereby depressing the trading price of our common stock.

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 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.

Our amended and restated certificate of incorporation provides 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 provides 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 further provides 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.

We are subject to the reporting requirements of the Exchange Act, or the other rules and regulations of 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.

We are subject to the reporting requirements of the Exchange Act, the Sarbanes-Oxley Act and the rules and regulations of the Nasdaq Global Select 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 the completion of our IPO, 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 our IPO, 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.

Item 2. Unregistered Sales of Equity Securities and Use of Proceeds

Unregistered Sales of Equity Securities

The following sets forth information regarding all unregistered securities sold by us from March 31, 2021 through June 30, 2021. 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 March 31, 2021 through May 06, 2021, we granted to our directors, officers, employees, consultants and other service providers stock options to purchase an aggregate of 320,800 shares of common stock upon the exercise of options under our 2016 Plan at exercise prices per share of $22.43, for an aggregate exercise price of approximately $7.2 million.

(b) From March 31, 2021 through May 25, 2021, we issued 257,552 shares of common stock upon the exercise of options under our 2016 Plan at exercise prices per share ranging from $0.63 to $8.95, for an aggregate exercise price of approximately $0.9 million.

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.

Use of Proceeds from Public Offering of Common Stock

On May 26, 2021, our Registration Statement on Form S-1 (File No. 333-255912) ("Registration Statement") relating to the initial public offering of our common stock ("IPO") was declared effective by the SEC. Pursuant to such Registration Statement, we sold an aggregate of 11,730,000 shares of our common stock, which includes 1,530,000 shares sold pursuant to the underwriters' full exercise of their option to purchase additional shares, at a price to the public of $22.00 per share. The aggregate offering price for shares sold in the offering was $258.1 million. On June 1, 2021, we closed the sale of such shares, resulting in aggregate cash proceeds to us of approximately $237.2 million, net of underwriting discounts, commissions and offering expenses paid or payable by us. No offering expenses were paid or are payable, directly or indirectly, to our directors or officers, to persons owning 10% or more of any class of our equity securities or to any of our affiliates. There has been no material change in the planned use of proceeds from our IPO as described in the final prospectus, dated May 26, 2021, filed with the SEC on May 28, 2021, pursuant to Rule 424(b) of the Securities Act.

Item 3. Defaults upon Senior Securities.

None.

Item 4. Mine Safety Disclosures.

None.

Item 5. Other Information.

None.

Item 6. Exhibits.

Exhibit Number	Description	Incorporated by Reference				Filed Herewith
		Form	File No.	Exhibit	Filing Date	
3.1	Amended and Restated Certificate of Incorporation of Registrant.	8-K	001-40443	3.1	June 1, 2021	
3.2	Amended and Restated Bylaws of Registrant.	8-K	001-40443	3.2	June 1, 2021	
4.2	Amended and Restated Investors' Rights Agreement, dated June 27, 2019, as amended, by and among the Registrant and the other parties thereto.	S-1	333-255912	4.2	May 7, 2021	
10.1	Form of Indemnification Agreement between the Registrant and each of its directors and executive officers	S-1/A	333-255912	10.1	May 24, 2021	
10.2#	Singular Genomics Systems, Inc. 2016 Stock Plan, as amended and forms of agreements thereunder.	S-1	333-255912	10.2	May 7, 2021	
10.3#	Singular Genomics Systems, Inc. 2021 Equity Incentive Plan and form of agreements thereunder.	S-1/A	333-255912	10.3	May 24, 2021	
10.4#	Singular Genomics Systems, Inc. 2021 Employee Stock Purchase Plan.	S-1/A	333-255912	10.4	May 24, 2021	
10.5	Lease Agreement, dated November 1, 2017, by and between ARE-10933 North Torrey Pines, LLC and the Registrant.	S-1	333-255912	10.5	May 7, 2021	
10.6	Lease Agreement, dated June 26, 2020, by and between ARE-SD Region No. 27, LLC and the Registrant.	S-1	333-255912	10.6	May 7, 2021	
10.7	Sublease, dated June 15, 2020, by and between the Registrant and Gossamer Bio, Inc.	S-1	333-255912	10.7	May 7, 2021	
10.8#	Amended and Restated Offer Letter, dated January 7, 2020, by and between the Registrant and Andrew Spaventa.	S-1	333-255912	10.8	May 7, 2021	
10.9#	Amended and Restated Offer Letter, dated January 11, 2020, by and between the Registrant and Eli Glezer.	S-1	333-255912	10.9	May 7, 2021	
10.10#	Offer Letter, dated September 25, 2019, by and between the Registrant and Dalen Meeter.	S-1	333-255912	10.10	May 7, 2021	
10.11	Loan Agreement, dated November 19, 2019, by and between the Registrant and Silicon Valley Bank.	S-1	333-255912	10.11	May 7, 2021	
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.	S-1	333-255912	10.12	May 7, 2021	
10.13#	Management Cash Incentive Plan.	S-1/A	333-255912	10.13	May 24, 2021	
10.14#	Executive Severance Plan.	S-1/A	333-255912	10.14	May 24, 2021	
31.1*	Certification of Principal Executive Officer Pursuant to Rules 13a-14(a) and 15d-14(a) under the Securities Exchange Act of 1934, as Adopted Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.					
31.2*	Certification of Principal Financial Officer Pursuant to Rules 13a-14(a) and 15d-14(a) under the Securities Exchange Act of 1934, as Adopted Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.					X
32.1*	Certification of Principal Executive Officer Pursuant to 18 U.S.C. Section 1350, as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.					X

32.2*	Certification of Principal Financial Officer Pursuant to 18 U.S.C. Section 1350, as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.	X
101.INS	Inline XBRL Instance Document - The instance document does not appear in the interactive data file because its XBRL tags are embedded within the inline XBRL document.	X
101.SCH	Inline XBRL Taxonomy Extension Schema Document.	X
101.CAL	Inline XBRL Taxonomy Extension Calculation Linkbase Document.	X
101.DEF	Inline XBRL Taxonomy Extension Definition Linkbase Document.	X
101.LAB	Inline XBRL Taxonomy Extension Label Linkbase Document.	X
101.PRE	Inline XBRL Taxonomy Extension Presentation Linkbase Document.	X
104	Cover Page Interactive Data File (formatted as Inline XBRL and contained in Exhibit 101).	X

† Pursuant to Item 601(b)(10) of Regulation S-K, certain confidential portions 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.

# Indicates a management contract or compensatory plan.

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, as amended, the Registrant has duly caused this Quarterly Report on Form 10-Q to be signed on its behalf by the undersigned, thereunto duly authorized.

SINGULAR GENOMICS SYSTEMS, INC.

Date: August 2, 2021

/s/ Andrew Spaventa

Andrew Spaventa

Chief Executive Officer

(Principal Executive Director)

Date: August 2, 2021

/s/ Dalen Meeter

Dalen Meeter

Senior Vice President, Finance

(Principal Financial Officer and Principal Accounting Officer)

Exhibit 31.1

CERTIFICATION PURSUANT TO RULES 13a-14(a) AND 15d-14(a) UNDER THE SECURITIES EXCHANGE ACT OF 1934, AS ADOPTED PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

I, Andrew Spaventa, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of Singular Genomics Systems, Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) for the registrant and have:

   (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   (b) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

   (c) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

   (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

   (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: August 2, 2021

By: /s/ Andrew Spaventa

Andrew Spaventa
Chief Executive Officer
(Principal Executive Officer)

Exhibit 31.2

CERTIFICATION PURSUANT TO RULES 13a-14(a) AND 15d-14(a) UNDER THE SECURITIES EXCHANGE ACT OF 1934, AS ADOPTED PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

I, Dalen Meeter, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of Singular Genomics Systems, Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) for the registrant and have:

   (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   (b) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

   (c) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

   (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

   (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: August 2, 2021

By: /s/ Dalen Meeter

Dalen Meeter

Senior Vice President, Finance

(Principal Financial Officer and Principal Accounting Officer)

Exhibit 32.1

CERTIFICATIONS OF PRINCIPAL EXECUTIVE OFFICER PURSUANT TO
18 U.S.C. SECTION 1350, AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

In connection with the Quarterly Report of Singular Genomics Systems, Inc. (the "Company") on Form 10-Q for the period ended June 30, 2021 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, Andrew Spaventa, hereby certify, pursuant to 18 U.S.C. § 1350, as adopted pursuant to § 906 of the Sarbanes-Oxley Act of 2002, that:

(1) The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended; and

(2) The information contained in the Report fairly presents, in all material respects, the financial condition and result of operations of the Company.

Date: August 2, 2021

By: /s/ Andrew Spaventa

Andrew Spaventa
Chief Executive Officer
(Principal Executive Officer)

Exhibit 32.2

CERTIFICATIONS OF PRINCIPAL FINANCIAL OFFICER PURSUANT TO
18 U.S.C. SECTION 1350, AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

In connection with the Quarterly Report of Singular Genomics Systems, Inc. (the "Company") on Form 10-Q for the period ended June 30, 2021 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, Dalen Meeter, hereby certify, pursuant to 18 U.S.C. § 1350, as adopted pursuant to § 906 of the Sarbanes-Oxley Act of 2002, that:

(1) The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended; and

(2) The information contained in the Report fairly presents, in all material respects, the financial condition and result of operations of the Company.

Date: August 2, 2021

By: /s/ Dalen Meeter

Dalen Meeter
Senior Vice President, Finance
(Principal Financial Officer and Principal Accounting Officer)