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

FORM 10-Q

(Mark One)

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

For the quarterly period ended March 31, 2020

OR

☐ **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: 001-39035

10x Genomics, Inc.
(Exact Name of Registrant as Specified in Its Charter)

Delaware	**45-5614458**
(State or other jurisdiction of incorporation or organization)	**(I.R.S. Employer Identification No.)**
6230 Stoneridge Mall Road Pleasanton, California	**94588**
(Address of principal executive offices)	**(Zip Code)**

(925) 401-7300
(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
Class A common stock, par value $0.00001 per share	**TXG**	**The Nasdaq Stock Market LLC**

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, a 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 13(a) of the Exchange Act. ☐

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

As of April 30, 2020, the registrant had 57,934,388 shares of Class A common stock, $0.00001 par value per share, outstanding and 40,426,639 shares of Class B common stock, $0.00001 par value per share, outstanding.

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10x Genomics, Inc.

SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This Quarterly Report on Form 10-Q (this "Quarterly Report") contains "forward-looking statements" within the meaning of Section 27A of the Securities Act of 1933, as amended (the "Securities Act"), and Section 21E of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), which are subject to the "safe harbor" created by those sections. All statements, other than statements of historical facts included in this Quarterly Report, including statements concerning our plans, objectives, goals, beliefs, business strategies, results of operations, financial position and business outlook, as well as future events, business conditions, uncertainties related to the global COVID-19 pandemic and the impact of our responses to it, business trends and other information, may be forward-looking statements. Forward-looking statements generally can be identified by the use of forward-looking terminology such as "may," "will," "should," "expect," "plan," "anticipate," "could," "intend," "target," "project," "contemplate," "believe," "estimate," "predict," "potential" or "continue" or the negatives of these terms or variations of them or similar terminology. Although we believe that the expectations reflected in these forward-looking statements are reasonable, we cannot provide any assurance that these expectations will prove to be correct and actual results may vary materially from what is expressed in or indicated by the forward-looking statement. Such statements reflect the current views of our management with respect to our business, results of operations and future financial performance.

You should not rely upon forward-looking statements as predictions of future events. We have based the forward-looking statements contained in this Quarterly Report primarily on our current expectations and projections about future events and trends that we believe may affect our business, financial condition, results of operations and prospects. The outcome of the events described in these forward-looking statements is subject to risks, uncertainties and other factors, including those described in the section titled "Risk Factors" and elsewhere in this Quarterly Report. Moreover, we operate in a very competitive and rapidly changing environment. New risks and uncertainties emerge from time to time and it is not possible for us to predict all risks and uncertainties that could have an impact on the forward-looking statements contained in this Quarterly Report. We cannot assure you that the results, events and circumstances reflected in the forward-looking statements will be achieved or occur, and actual results, events or circumstances could differ materially from those described in the forward-looking statements. For a more detailed discussion of the risks, uncertainties and other factors that could cause actual results to differ, please refer to the "Risk Factors" in this Quarterly Report, as such risk factors may be updated from time to time in our periodic filings with the SEC. Our periodic filings are accessible on the SEC's website at www.sec.gov.

The forward-looking statements made in this Quarterly Report relate only to events as of the date on which the statements are made. We undertake no obligation to update any forward-looking statements made in this Quarterly Report to reflect events or circumstances after the date of this Quarterly Report or to reflect new information or the occurrence of unanticipated events, except as required by law. Although we believe that the expectations reflected in the forward-looking statements are reasonable, we cannot guarantee that the future results, levels of activity, performance and events and circumstances reflected in the forward-looking statements will be achieved or occur and you should not place undue reliance on our forward-looking statements. Our forward-looking statements do not reflect the potential impact of any future acquisitions, mergers, dispositions, joint ventures or investments we may make. Further, as the COVID-19 pandemic is unprecedented and continuously evolving, our forward-looking statements may not accurately or fully reflect the potential impact that the COVID-19 pandemic may have on our business, financial condition, results of operations and cash flows.

In addition, statements that "we believe" and similar statements reflect our beliefs and opinions on the relevant subject. These statements are based upon information available to us as of the date of this Quarterly Report, and while we believe such information forms a reasonable basis for such statements, such information may be limited or incomplete, and our statements should not be read to indicate that we have conducted an exhaustive inquiry into, or review of, all potentially available relevant information. These statements are inherently uncertain and investors are cautioned not to unduly rely upon these statements.

Unless otherwise stated or the context otherwise indicates, references to "we," "us," "our," "the Company," "10x" and similar references refer to 10x Genomics, Inc.

Channels for Disclosure of Information

Investors and others should note that we may announce material information to the public through filings with the SEC, our website (https://www.10xGenomics.com), press releases, public conference calls, public webcasts and our social media accounts (https://twitter.com/10xGenomics, https://www.facebook.com/10xGenomics/ and https://www.linkedin.com/company/10xgenomics/). We use these channels to communicate with our customers and the public about the Company, our products, our services and other matters. We encourage our investors, the media and others to review the information disclosed through such channels as such information could be deemed to be material information. The information on such channels, including on our website and our social media accounts, is not incorporated by reference in this Quarterly Report and shall not be deemed to be incorporated by reference into any other filing under the Securities Act or the Exchange Act, except as expressly set forth by specific reference in such a filing. Please note that this list of disclosure channels may be updated from time to time.

10x Genomics, Inc.

PART I—FINANCIAL INFORMATION

Item 1. Financial Statements.

10x Genomics, Inc.
Condensed Consolidated Balance Sheets
(In thousands, except share and per share data)

	March 31, 2020 (Unaudited)	December 31, 2019 (Note 1)
Assets		
Current assets:		
Cash and cash equivalents	$ 372,428	$ 424,166
Accounts receivable, net	30,851	33,371
Inventory	19,357	15,270
Prepaid expenses and other current assets	7,096	8,033
Total current assets	429,732	480,840
Property and equipment, net	52,384	48,821
Restricted cash	59,475	52,327
Operating lease right-of-use assets	44,048	—
Other assets	24,745	23,935
Total assets	$ 610,384	$ 605,923
Liabilities and stockholders' equity		
Current liabilities:		
Accounts payable	$ 13,505	$ 13,028
Accrued compensation and related benefits	18,623	12,394
Accrued expenses and other current liabilities	20,093	24,448
Term loans, current portion	—	9,882
Deferred revenue, current	3,394	3,297
Operating lease liabilities	3,453	—
Total current liabilities	59,068	63,049
Term loans, noncurrent portion	—	19,837
Accrued contingent liabilities	73,314	68,658
Accrued license fee, noncurrent	11,223	16,251
Deferred rent, noncurrent	—	16,120
Operating lease liabilities, noncurrent	56,166	—
Other noncurrent liabilities	1,545	1,925
Total liabilities	201,316	185,840
Commitments and contingencies (Note 5)		
Stockholders' equity:		
Preferred stock, $0.00001 par value; 100,000,000 shares authorized, no shares issued and outstanding as of March 31, 2020 and December 31, 2019	—	—
Common stock, $0.00001 par value; 1,100,000,000 shares authorized and 98,145,208 shares issued and outstanding as of March 31, 2020; 1,100,000,000 shares authorized and 96,241,596 shares issued and outstanding as of December 31, 2019	2	2
Additional paid-in capital	692,617	682,494
Accumulated deficit	(283,510)	(262,367)
Accumulated other comprehensive loss	(41)	(46)
Total stockholders' equity	409,068	420,083
Total liabilities and stockholders' equity	$ 610,384	$ 605,923

The accompanying notes are an integral part of these unaudited condensed consolidated financial statements.

10x Genomics, Inc.
Condensed Consolidated Statements of Operations and Comprehensive Loss
(Unaudited)
(In thousands, except share and per share data)

	Three Months Ended March 31,	
	2020	2019
Revenue	$ 71,905	$ 53,578
Cost of revenue	15,108	13,965
Gross profit	56,797	39,613
Operating expenses:		
Research and development	25,992	14,965
Selling, general and administrative	50,387	26,893
Accrued contingent liabilities	302	790
Total operating expenses	76,681	42,648
Loss from operations	(19,884)	(3,035)
Other income (expense):		
Interest income	1,318	263
Interest expense	(662)	(684)
Other expenses, net	(96)	(146)
Loss on extinguishment of debt	(1,521)	—
Total other expense	(961)	(567)
Loss before provision for income taxes	(20,845)	(3,602)
Provision for income taxes	298	34
Net loss	$ (21,143)	$ (3,636)
Other comprehensive income (loss):		
Foreign currency translation adjustment	5	(24)
Comprehensive loss	$ (21,138)	$ (3,660)
Net loss per share, basic and diluted	$ (0.22)	$ (0.25)
Weighted-average shares of common stock used in computing net loss per share, basic and diluted	96,829,093	14,801,867

The accompanying notes are an integral part of these unaudited condensed consolidated financial statements.

10x Genomics, Inc.
Condensed Consolidated Statements of Convertible Preferred Stock and Stockholders' Equity (Deficit)
(Unaudited)
(In thousands, except share data)

Three Months Ended March 31, 2020

	Convertible Preferred Stock		Common Stock		Additional Paid-in Capital	Accumulated Deficit	Accumulated Other Comprehensive Loss	Total Stockholders' Equity
	Shares	Amount	Shares	Amount				
Balance as of December 31, 2019	—	$ —	96,241,596	$ 2	$ 682,494	$ (262,367)	$ (46)	$ 420,083
Issuance of Class A common stock upon exercise of stock options	—	—	1,903,612	—	3,283	—	—	3,283
Vesting of shares subject to repurchase, including early exercised options	—	—	—	—	122	—	—	122
Stock-based compensation	—	—	—	—	6,718	—	—	6,718
Net loss	—	—	—	—	—	(21,143)	—	(21,143)
Other comprehensive income	—	—	—	—	—	—	5	5
Balance as of March 31, 2020	—	$ —	98,145,208	$ 2	$ 692,617	$ (283,510)	$ (41)	$ 409,068

Three Months Ended March 31, 2019

	Convertible Preferred Stock		Common Stock		Additional Paid-in Capital	Accumulated Deficit	Accumulated Other Comprehensive Loss	Total Stockholders' Equity (Deficit)
	Shares	Amount	Shares	Amount				
Balance as of December 31, 2018	67,704,278	$243,244	14,549,801	$ 1	$ 11,165	$ (231,116)	$ (37)	$ (219,987)
Issuance of Class A common stock upon exercise of stock options	—	—	898,858	—	923	—	—	923
Vesting of shares subject to repurchase, including early exercised options	—	—	—	—	72	—	—	72
Stock-based compensation	—	—	—	—	1,359	—	—	1,359
Net loss	—	—	—	—	—	(3,636)	—	(3,636)
Other comprehensive loss	—	—	—	—	—	—	(24)	(24)
Balance as of March 31, 2019	67,704,278	$243,244	15,448,659	$ 1	$ 13,519	$ (234,752)	$ (61)	$ (221,293)

The accompanying notes are an integral part of these unaudited condensed consolidated financial statements.

10x Genomics, Inc.
Condensed Consolidated Statements of Cash Flows
(Unaudited)
(In thousands)

	Three Months Ended March 31,	
	2020	2019
Operating activities:		
Net loss	$ (21,143)	$ (3,636)
Adjustments to reconcile net loss to net cash provided by (used in) operating activities:		
Depreciation and amortization	3,189	1,036
Stock-based compensation	6,718	1,359
Loss on disposal of property and equipment	—	557
Loss on extinguishment of debt	1,521	—
Accretion of discount on term loan	17	23
Amortization of right-of-use assets	1,071	—
Changes in operating assets and liabilities:		
Accounts receivable	2,521	2,674
Inventory	(4,087)	(2,586)
Prepaid expenses and other current assets	601	(6,900)
Other assets	(1,210)	(56)
Accounts payable	(653)	(1,269)
Accrued compensation and other related benefits	6,191	38
Deferred revenue	471	323
Accrued contingent liabilities	4,656	8,644
Accrued expenses and other current liabilities	4,585	1,773
Deferred rent, noncurrent	—	7,280
Operating lease liability	(1,282)	—
Other noncurrent liabilities	(5,742)	58
Net cash (used in) provided by operating activities	(2,576)	9,318
Investing activities:		
Purchases of property and equipment	(8,079)	(9,367)
Net cash used in investing activities	(8,079)	(9,367)
Financing activities:		
Payments on financing arrangement	(5,846)	—
Payments on term loans	(31,256)	—
Proceeds from issuance of common stock upon exercise of stock options	3,283	923
Net cash (used in) provided by financing activities	(33,819)	923
Effect of exchange rates on changes in cash, cash equivalents, and restricted cash	(116)	(2)
Net (decrease) increase in cash, cash equivalents, and restricted cash	(44,590)	872
Cash, cash equivalents, and restricted cash at beginning of period	476,493	70,088
Cash, cash equivalents, and restricted cash at end of period	$431,903	$70,960
Supplemental disclosures of cash flow information:		
Cash paid for interest	$ 1,670	$ 559
Cash paid for taxes	$ 117	$ —
Noncash investing and financing activities		
Purchases of property and equipment included in accounts payable and accrued expenses and other current liabilities	$ 2,811	$ 3,230
Right-of-use assets obtained in exchange for new operating lease liabilities	$ 7,634	$ —
Deferred offering costs in accounts payable and accrued expenses and other current liabilities	$ —	$ 375

The accompanying notes are an integral part of these unaudited condensed consolidated financial statements.

10x Genomics, Inc.
Notes to Unaudited Condensed Consolidated Financial Statements

1. Description of Business and Basis of Presentation

Organization and Description of Business

10x Genomics, Inc. (the "Company") was incorporated in the state of Delaware on July 2, 2012 and is a life sciences technology company focused on building innovative products and solutions to interrogate, understand and master biological systems at resolution and scale that matches the complexity of biology. The Company's integrated solutions include the Company's Chromium and Chromium Connect instruments, which the Company refers to as "instruments," and the Company's proprietary microfluidic chips, slides, reagents and other consumables for both the Company's Visium and Chromium solutions, which the Company refers to as "consumables." The Company bundles its software with these products to guide customers through the workflow, from sample preparation through analysis and visualization. The Company began commercial and manufacturing operations and selling its instruments and consumables in 2015. The Company is headquartered in Pleasanton, California and has wholly-owned subsidiaries in China, Germany, Netherlands, Singapore and Sweden.

Initial Public Offering

The Company's registration statement on Form S-1 related to its initial public offering ("IPO") was declared effective on September 11, 2019 by the Securities and Exchange Commission ("SEC"), and the Company's Class A common stock began trading on the Nasdaq Global Select Market on September 12, 2019. On September 16, 2019, the Company completed its IPO, in which the Company sold 11,500,000 shares of Class A common stock (which included 1,500,000 shares that were offered and sold pursuant to the full exercise of the IPO underwriters' option to purchase additional shares) at a price to the public of $39.00 per share. Including the option exercise, the Company received aggregate net proceeds of $410.8 million after deducting offering costs, underwriting discounts and commissions of $37.7 million.

Risk and Uncertainties

We are subject to risks and uncertainties as a result of the global COVID-19 pandemic. While the disruption is currently expected to be temporary, there is considerable uncertainty around its magnitude of impact and duration. Management is actively monitoring this situation and the possible effects on the Company's financial condition, operations, suppliers, customers, industry and employees. As of the date of issuance of these condensed consolidated financial statements, the extent to which the COVID-19 pandemic may materially impact the Company's financial condition, liquidity or results of operations is uncertain.

Basis of Presentation

The accompanying condensed consolidated financial statements, which include the Company's accounts and the accounts of its wholly-owned subsidiaries, are unaudited and have been prepared in accordance with U.S. generally accepted accounting principles ("GAAP"). The condensed consolidated balance sheets at December 31, 2019 have been derived from the audited consolidated financial statements of the Company at that date. Certain information and footnote disclosures typically included in the Company's audited consolidated financial statements have been condensed or omitted. The accompanying unaudited condensed consolidated financial statements have been prepared on the same basis as the annual consolidated financial statements and, in the opinion of management, reflect all adjustments, which include only normal recurring adjustments, necessary to state fairly the Company's financial position, results of operations, comprehensive loss and cash flows for the periods presented, but are not necessarily indicative of the results of operations to be anticipated for any future annual or interim period. All intercompany transactions and balances have been eliminated. The preparation of financial statements requires management to make estimates and assumptions that affect the reported amounts of assets, liabilities, revenue and expenses, and related disclosure of contingent assets and liabilities. Actual results could differ from those estimates.

The accompanying unaudited condensed consolidated financial statements and notes should be read in conjunction with the audited consolidated financial statements and related notes for the year ended December 31, 2019 included in the Annual Report on Form 10-K filed with the SEC on February 27, 2020. Certain immaterial reclassifications were made to the prior year financial statements to conform to the current period presentation.

2. Summary of Significant Accounting Policies

During the three months ended March 31, 2020, there have been no changes to our significant accounting policies as described in our Annual Report on Form 10-K for the fiscal year ended December 31, 2019, except as described below under “Recently Adopted Accounting Pronouncements.”

Segment Information

The Company operates as a single operating segment. The Company’s chief operating decision maker, its Chief Executive Officer, manages the Company’s operations on a consolidated basis for the purposes of allocating resources, making operating decisions and evaluating financial performance.

Fair Value of Financial Instruments

The Company determines the fair value of an asset or liability based on the assumptions that market participants would use in pricing the asset or liability in an orderly transaction between market participants at the measurement date. The identification of market participant assumptions provides a basis for determining what inputs are to be used for pricing each asset or liability.

A fair value hierarchy has been established which gives precedence to fair value measurements calculated using observable inputs over those using unobservable inputs. This hierarchy prioritized the inputs into three broad levels as follows:

Level 1: Quoted prices in active markets for identical instruments

Level 2: Other significant observable inputs (including quoted prices in active markets for similar instruments)

Level 3: Significant unobservable inputs (including assumptions in determining the fair value of certain investments)

Cash and cash equivalents are comprised of money market funds and cash. Money market funds are highly liquid investments which are actively traded and are comprised of United States government securities. The pricing information for the Company’s money market funds is readily available and can be independently validated as of the measurement date. This approach results in the classification of these securities as Level 1 of the fair value hierarchy. There were no transfers between Levels 1, 2 or 3 for any of the periods presented. As of March 31, 2020 and December 31, 2019, the Company held $339.6 million and $398.5 million in money market funds, respectively, with no unrealized gains or losses.

Leases

The Company determines if an arrangement is or contains a lease at inception by assessing whether the arrangement contains an identified asset and whether it has the right to control the identified asset. Right-of-use (“ROU”) assets represent the Company’s right to use an underlying asset for the lease term and lease liabilities represent the Company’s obligation to make lease payments arising from the lease. Lease liabilities are recognized at the lease commencement date based on the present value of future lease payments over the lease term. ROU assets are based on the measurement of the lease liability and also include any lease payments made prior to or on lease commencement and exclude lease incentives and initial direct costs incurred, as applicable.

As the implicit rate in the Company’s leases is generally unknown, the Company uses its incremental borrowing rate based on the information available at the lease commencement date in determining the present value of future lease payments. The Company gives consideration to its credit risk, term of the lease and total lease payments and adjusts for the impacts of collateral, as necessary, when calculating its incremental borrowing rates. The lease terms may include options to extend or terminate the lease when the Company is reasonably certain it will exercise such options. Lease costs for the Company’s operating leases are recognized on a straight-line basis within operating expenses and costs of goods sold over the reasonably assured lease term.

The Company has elected to not separate lease and non-lease components for any leases within its existing classes of assets and, as a result, accounts for any lease and non-lease components as a single lease component. The Company has also elected to not apply the recognition requirement to any leases within its existing classes of assets with a term of 12 months or less.

Internal-Use Software

The Company capitalizes costs incurred to develop internal-use software within fixed assets and commencing from the first quarter of 2020, began capitalizing costs to develop hosting arrangements within other assets in the condensed consolidated balance sheets. Costs incurred during the preliminary planning and evaluation and post implementation stages of the project are expensed as incurred. Costs incurred during the application development stage of the project are capitalized. These costs are amortized on a straight-line basis over the estimated useful life of the asset.

Impairment of Long-Lived Assets

The Company evaluates long-lived assets, such as property and equipment and intangible assets, for impairment whenever events or changes in circumstances indicate that the carrying value of an asset may not be recoverable. If indicators of impairment exist and the undiscounted future cash flows that the assets are expected to generate are less than the carrying value of the assets, the Company reduces the carrying amount of the assets to their estimated fair values based on a discounted cash flow approach or, when available and appropriate, to comparable market values. There were no impairment losses recorded for the three-month periods ended March 31, 2020 and 2019.

Revenue Recognition

Commencing on January 1, 2019, the Company recognized revenues in accordance with *Accounting Standards Codification ("ASC") Topic 606 – Revenue from Contracts with Customers.*

The Company generates revenue from sales of products and services. The Company's products consist of instruments and consumables. The Company began shipping its Chromium Connect instrument during the first quarter of 2020.

The Company recognizes revenue when control of the products and services is transferred to its customers in an amount that reflects the consideration it expects to receive from its customers in exchange for those products and services. This process involves identifying the contract with a customer, determining the performance obligations in the contract, determining the contract price, allocating the contract price to the distinct performance obligations in the contract and recognizing revenue when the performance obligations have been satisfied. A performance obligation is considered distinct from other obligations in a contract when it provides a benefit to the customer either on its own or together with other resources that are readily available to the customer and is separately identified in the contract. The Company considers a performance obligation satisfied once it has transferred control of a good or service to the customer, meaning the customer has the ability to use and obtain the benefit of the good or service.

Revenue from product sales is recognized when control of the product is transferred, which is generally upon shipment to the customer. In instances where right of payment or transfer of title is contingent upon the customer's acceptance of the product, revenue is deferred until all acceptance criteria have been met. Instrument service agreements, which relate to extended warranties, are typically entered into for one-year terms, following the expiration of the standard one-year warranty period. Revenue for extended warranties is recognized ratably over the term of the extended warranty period as a stand ready performance obligation. Revenue is recorded net of discounts, distributor commissions and sales taxes collected on behalf of governmental authorities. Customers are invoiced generally upon shipment, or upon order for services, and payment is typically due within 45 days. Cash received from customers in advance of product shipment or providing services is recorded as a contract liability. The Company's contracts with its customers generally do not include rights of return or a significant financing component.

The Company regularly enters into contracts that include various combinations of products and services which are generally distinct and accounted for as separate performance obligations. The transaction price is allocated to each performance obligation in proportion to its standalone selling price. The Company determines standalone selling price using average selling prices with consideration of current market conditions. If the product or service has no history of sales or if the sales volume is not sufficient, the Company relies upon prices set by management, adjusted for applicable discounts.

Stock-Based Compensation

The Company's stock-based awards are comprised of stock options and, beginning in the first quarter of 2020, the Company began issuing restricted stock units ("RSUs") to its employees and other service providers. Stock-based compensation expense for its stock-based awards are based on their grant date fair value. The Company determines the fair value of RSUs based on the closing value of its stock price listed on Nasdaq at the date of the grant. The Company estimates the fair value of stock option awards granted to employees and directors on the grant date using the Black-Scholes option-pricing model. The fair value of stock option awards is recognized as compensation expense on a straight-line basis over the requisite service period in which the awards are expected to vest and forfeitures are recognized as they occur. Stock option awards that include a service condition and a performance condition are considered expected to vest when the performance condition is probable of being met.

The Black-Scholes model considers several variables and assumptions in estimating the fair value of stock-based awards. These variables include the per share fair value of the underlying common stock, exercise price, expected term, risk-free interest rate, expected annual dividend yield and the expected stock price volatility over the expected term. For all stock options granted, the Company calculated the expected term using the simplified method for "plain vanilla" stock option awards. 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 risk-free interest rate is based on the yield available on U.S. Treasury zero-coupon issues similar in duration to the expected term of the equity-settled award.

Stock-based compensation expense for nonemployee stock options is measured based on fair market value using the Black-Scholes option pricing model and is recorded as the options vest. Prior to January 1, 2019, nonemployee stock options subject to vesting were revalued periodically over the requisite service period, which was generally the same as the vesting term of the award. From January 1, 2019, the grant date fair market value of nonemployee stock options is recognized in the condensed consolidated statements of operations on a straight-line basis over the requisite service period and forfeitures are recognized as they occur.

Net Loss Per Share

Net loss per share is computed using the two-class method required for multiple classes of common stock and participating securities. The rights, including the liquidation and dividend rights and sharing of losses, of the Class A common stock and Class B common stock are identical, other than voting rights. As the liquidation and dividend rights and sharing of losses are identical, the undistributed earnings are allocated on a proportionate basis and the resulting net loss per share will, therefore, be the same for both Class A and Class B common stock on an individual or combined basis.

The Company's participating securities included the Company's convertible preferred stock, as the holders would have been entitled to receive noncumulative dividends on a pari passu basis in the event that a dividend was paid on common stock. The Company also considers any shares issued on the early exercise of stock options subject to repurchase to be participating securities because holders of such shares have non-forfeitable dividend rights in the event a dividend is paid on common stock. The holders of convertible preferred stock, as well as the holders of early exercised shares subject to repurchase, do not have a contractual obligation to share in losses.

Basic net loss per share is computed by dividing net loss by the weighted-average number of shares of common stock outstanding during the period, adjusted for outstanding shares that are subject to repurchase.

For the calculation of diluted net loss per share, basic net loss per share is adjusted by the effect of dilutive securities, including convertible preferred stock, awards under the Company's equity compensation plan and common stock warrants. Diluted net loss per share is computed by dividing net loss by the weighted-average number of shares of common stock outstanding. For periods in which the Company reports net losses, diluted net loss per share is the same as basic net loss per share because potentially dilutive shares of common stock are not assumed to have been issued if their effect is anti-dilutive.

Recently Adopted Accounting Pronouncements

In February 2016, the Financial Accounting Standards Board ("FASB") issued Accounting Standards Update ("ASU") No. 2016-02, *Leases (Topic 842)*. This standard requires substantially all leases to be recognized by lessees on their balance sheet as a right-of-use asset and corresponding lease liability, including leases currently accounted for as operating leases. On January 1, 2020, the Company early adopted Topic 842 using the optional transition method by recognizing a cumulative effect adjustment to the opening balance of accumulated deficit as of that date. Results for the three months ended March 31, 2020 are presented under the guidance in Topic 842. No prior period amounts were adjusted and continue to be reported in accordance with previous lease guidance, *ASC Topic 840 – Leases*.

The Company elected the practical expedients to not reassess its prior conclusions about lease identification under the new standard, to not reassess lease classification and to not reassess initial direct costs.

Adoption of Topic 842 resulted in the recognition of operating lease right-of-use assets and operating lease liabilities of approximately $38.0 million and $53.8 million, respectively, on the Company's condensed consolidated balance sheet as of January 1, 2020. The adoption of the new standard did not have an impact on the Company's beginning accumulated deficit, statement of operations or cash flows.

The following table summarizes the impact of Topic 842 on our condensed consolidated balance sheet as of January 1, 2020 (in thousands):

	December 31, 2019	Adjustments due to the adoption of Topic 842	January 1, 2020
Assets:			
Operating lease right-of-use assets	$ —	$ 38,005	$ 38,005
Prepaid expenses and other current assets	8,033	(434)	7,599
Total assets	$ 8,033	$ 37,571	$ 45,604
Liabilities:			
Accrued expenses and other current liabilities	$ 24,448	$ (99)	$ 24,349
Operating lease liabilities	—	3,086	3,086
Deferred rent, noncurrent	16,120	(16,120)	—
Operating lease liabilities, noncurrent	—	50,704	50,704
Total liabilities	$ 40,568	$ 37,571	$ 78,139

The adjustments due to the adoption of Topic 842 related to the recognition of operating lease right-of-use assets and operating lease liabilities for the Company's existing operating leases.

In June 2016, the FASB issued ASU No. 2016-13, *Measurement of Credit Losses on Financial Instruments (Topic 326)*, which requires financial assets measured at amortized cost to be presented at the net amount expected to be collected and provides that credit losses relating to available-for-sale debt securities and accounts receivable should be recorded through an allowance for credit losses. The guidance was amended through various ASUs subsequent to ASU 2016-13. The Company calculates the allowance for credit losses as a percentage of the trade accounts receivable balance based on collection history and current economic trends that we expect will impact the level of credit losses over the life of our receivables. The allowance is re-evaluated on a regular basis and adjusted, as required. Trade accounts receivable are considered past due based on the contractual payment terms. Once a trade account receivable is deemed uncollectible, it is charged against this allowance. The Company early adopted this standard on a modified retrospective basis effective January 1, 2020. The adoption did not have a material impact on the condensed consolidated financial statements.

In November 2019, the FASB issued ASU 2019-08, *Compensation – Stock Compensation (Topic 718) and Revenue from Contracts with Customers (Topic 606)*, which expands the scope of ASC Topic 718 to provide guidance for share-based payment awards granted to a customer in conjunction with selling goods or services accounted for under Topic 606. The Company early adopted this standard on January 1, 2020, which did not have a material impact on the condensed consolidated financial statements.

In August 2018, the FASB issued ASU 2018-15, *Intangibles – Goodwill and Other – Internal Use Software (Subtopic 350-40) – Customer's Accounting for Implementation Costs Incurred in a Cloud Computing Arrangement That is a Service Contract*, which aligns the accounting for implementation costs incurred in a hosting arrangement that is a service contract with the accounting for implementation costs incurred to develop or obtain internal-use software under ASC 350-40, in order to determine which costs to capitalize and recognize as an asset and which costs to expense. The Company early adopted this standard on a prospective basis effective January 1, 2020. As a result of the adoption of this standard, during the three months ended March 31, 2020, the Company capitalized $1.4 million of implementation costs for enterprise resource planning and related software. These costs are recorded within other assets in the condensed consolidated balance sheets.

Recently Issued Accounting Pronouncements

In December 2019, the FASB issued ASU No. 2019-12, *Income Taxes (Topic 740)*, which simplifies the accounting for income taxes, primarily by eliminating certain exceptions to ASC 740. This standard is effective for fiscal periods beginning after December 15, 2021. The Company is currently evaluating this standard and the impact it may have on the Company's condensed consolidated financial statements.

3. Other Financial Statement Information

Inventory

Inventory was comprised of the following as of the dates indicated (in thousands):

	March 31, 2020	December 31, 2019
Purchased materials	$ 9,124	$ 6,436
Work in progress	4,539	3,996
Finished goods	5,694	4,838
Inventory	$ 19,357	$ 15,270

Intangible Assets, Net

Intangible assets, net consisted of the following (in thousands):

	March 31, 2020			December 31, 2019		
	Gross Carrying Amount	Accumulated Amortization	Intangibles, Net	Gross Carrying Amount	Accumulated Amortization	Intangibles, Net
Technology licenses	$22,504	$ (823)	$ 21,681	$22,504	$ (440)	$ 22,064
Customer relationships	204	(39)	165	204	(32)	172
Trademarks	204	(91)	113	204	(74)	130
Total intangible assets, net	$22,912	$ (953)	$ 21,959	$22,912	$ (546)	$ 22,366

The estimated annual amortization of intangible assets for the next five years is shown below (in thousands):

	Estimated Annual Amortization
2020 (excluding the three months ended March 31, 2020)	$ 1,223
2021	1,625
2022	1,562
2023	1,533
2024	1,502
Thereafter	14,514
Total	$ 21,959

Actual amortization expense to be reported in future periods could differ from these estimates as a result of acquisitions, divestitures and asset impairments, among other factors.

Accrued Compensation and Related Benefits

Accrued compensation and related benefits were comprised of the following as of the dates indicated (in thousands):

	March 31, 2020	December 31, 2019
Accrued payroll and related costs	$ 9,544	$ 470
Employee stock purchase program liability	3,442	1,862
Accrued bonus	2,668	6,154
Accrued commissions	1,551	2,473
Other	1,418	1,435
Accrued compensation and related benefits	$ 18,623	$ 12,394

Accrued Expenses and Other Current Liabilities

Accrued expenses and other current liabilities were comprised of the following as of the dates indicated (in thousands):

	March 31, 2020	December 31, 2019
Accrued legal expenses	$ 4,078	$ 4,375
Accrued license fee	5,275	6,183
Accrued royalties for licensed technologies	1,918	2,025
Accrued property and equipment	1,051	3,885
Accrued consulting	1,736	1,173
Product warranties	366	467
Customer deposits	1,076	1,304
Taxes payable	923	1,087
Other	3,670	3,949
Accrued expenses and other current liabilities	$ 20,093	$ 24,448

Product Warranties

Changes in the reserve for product warranties were as follows for the periods indicated (in thousands):

	March 31, 2020	December 31, 2019
Beginning of period	$ 467	$ 804
Additions charged to cost of revenue	72	741
Repairs and replacements	(173)	(1,078)
End of period	$ 366	$ 467

Revenue and Deferred Revenue

As of March 31, 2020, the aggregate amount of the sales price of Chromium instruments allocated to remaining performance obligations was $4.6 million, of which approximately 74% is expected to be recognized to revenue in the next 12 months, with the remainder thereafter. The contract liabilities of $4.6 million and $4.1 million as of March 31, 2020 and December 31, 2019, respectively, consisted of deferred revenue related to extended warranty service agreements, and as of March 31, 2020, the short-term portion was $3.4 million. Revenue recorded during the three months ended March 31, 2020 included $1.1 million of previously deferred revenue that was included in contract liabilities as of December 31, 2019. Contract assets as of March 31, 2020 and December 31, 2019 were not material.

The following table represents revenue by source for the periods indicated (in thousands):

	Three Months Ended March 31,	
	2020	2019
Instruments	$ 9,141	$ 6,848
Consumables	61,428	45,851
Services	1,336	879
Total revenue	$71,905	$53,578

The following table presents revenue by geography based on the location of the customer for the periods indicated (in thousands):

	Three Months Ended March 31,	
	2020	2019
North America	$39,732	$28,509
Europe, Middle East and Africa	13,158	12,255
China	10,997	8,114
Asia Pacific	8,018	4,700
Total revenue	$71,905	$53,578

Revenue for the United States, which is included in North America in the table above, was 53% and 50% of consolidated revenue for the three months ended March 31, 2020 and 2019, respectively.

4. Debt

In September 2016, the Company entered into a Second Amended and Restated Loan and Security Agreement with Silicon Valley Bank (as amended and restated in February 2018 and as further amended, restated or supplemented from time to time, the "Loan and Security Agreement"), which includes a term loan and revolving line of credit. On February 20, 2020, the Company prepaid the remaining balance of the term loan and all associated costs. The final payment of $30.5 million included $28.3 million for the outstanding principal balance of the term loan, $1.8 million for an end of term payment, $0.3 million for early termination fees and $0.1 million for interest. The prepayment resulted in a loss on extinguishment of debt of $1.5 million. The non-accreted portion of the end of term payment, unamortized discounts and early termination fees were included in the calculation of the loss on extinguishment of debt.

The revolving line of credit continues to be in effect and provides the Company with a revolving line of credit of up to $25.0 million through December 2022. The amount available on the revolving line of credit is based on 80% of eligible receivables and is subject to a borrowing base calculation. Principal amounts outstanding under the revolving line of credit would accrue interest at a floating per annum rate equal to the greater of The Wall Street Journal prime rate plus 0.25% or 4.5% and would be repayable monthly. Upon termination of the Loan and Security Agreement for any reason prior to the revolving line of credit's maturity in December 2022, a termination fee of $250,000 would be due in addition to all outstanding principal and interest. Additionally, the revolving line of credit has a nonrefundable annual commitment fee of $62,500 payable on each anniversary date. As of March 31, 2020 and December 31, 2019, there were no balances outstanding under the revolving line of credit.

5. Commitments and Contingencies

Lease Agreements

The Company leases office, laboratory, manufacturing, distribution and server space with lease terms ranging from 2 to 11 years. These leases require monthly lease payments that may be subject to annual increases throughout the lease term. Certain of these leases also include renewal options at the election of the Company to renew or extend the lease. The Company evaluates renewal options at lease inception and on an ongoing basis, and includes renewal options that it is reasonably certain to exercise in its expected lease terms when classifying leases and measuring lease liabilities.

The Company performed evaluations of these contracts and determined them to be operating leases. For the three months ended March 31, 2020, the Company incurred $1.9 million of operating lease costs. The Company also incurred $0.1 million of variable lease costs for the three months ended March 31, 2020. The variable lease cost is comprised primarily of the Company's proportionate share of operating expenses, property taxes and insurance and is classified as lease cost due to the Company's election to not separate lease and non-lease components.

Cash paid for amounts included in the measurement of operating lease liabilities for the three months ended March 31, 2020 was $1.3 million and was included in net cash used in operating activities in the Company's condensed consolidated statements of cash flows.

The maturity of the Company's operating lease liabilities as of March 31, 2020 is as follows (in thousands):

	Operating Leases
2020 (excluding the three months ended March 31, 2020)	$ 4,752
2021	8,843
2022	7,904
2023	8,052
2024	7,805
Thereafter	42,375
Total lease payments	$ 79,731
Less: imputed interest	(20,112)
Present value of operating lease liabilities	$ 59,619
Operating lease liabilities, current	3,453
Operating lease liabilities, non-current	56,166

The following table summarizes additional information related to operating leases as of March 31, 2020:

Weighted-average remaining lease term	
Operating leases	9.2 years
Weighted-average discount rate	
Operating leases	6.2%

The Company's future undiscounted lease payments under operating leases (as defined by prior guidance) as of December 31, 2019 are as follow (in thousands):

	Rent Payments
2020	$ 6,247
2021	7,581
2022	6,794
2023	6,947
2024	7,064
Thereafter	38,346
Total minimum lease payments	$ 72,979

Litigation

The Company is regularly subject to claims, lawsuits, arbitration proceedings, administrative actions and other legal and regulatory proceedings involving commercial disputes, competition, intellectual property disputes and other matters, and the Company may become subject to additional types of claims, lawsuits, arbitration proceedings, administrative actions, government investigations and legal and regulatory proceedings in the future. Amongst other matters, the Company is currently a defendant in the lawsuits and proceedings described below. Other than with respect to the 2015 Delaware Action, losses are not probable or estimable for the lawsuits and proceedings described below.

The 2015 Delaware Action

In February 2015, Raindance Technologies, Inc. ("Raindance") and the University of Chicago filed suit against the Company in the U.S. District Court for the District of Delaware, accusing substantially all of the Company's products of infringing certain patents. In May 2017, Bio-Rad Laboratories, Inc. ("Bio-Rad") was substituted as the plaintiff following its acquisition of Raindance. In November 2018, a jury found that the accused products willfully infringed one or more of the asserted patents and awarded Bio-Rad approximately $24 million in damages through June 30, 2018. The Company has appealed the jury verdict. Post-trial, Bio-Rad moved for a permanent injunction, treble damages for willful infringement, attorneys' fees, supplemental damages as well as pre- and post-judgment interest.

In response to the jury award, the Company established an accrual of $30.6 million as of December 31, 2018, which was recorded as an operating expense on the condensed consolidated statement of operations for the year ended December 31, 2018. Additionally, beginning in the fourth quarter of 2018, the Company also began recording an accrual for estimated royalties to Bio-Rad

as a cost of revenue on the condensed consolidated statements of operations based on an estimated royalty rate of 15% of sales of the Company's Chromium instruments operating its GEM microfluidic chips and associated consumables. As a result, the Company recorded $7.4 million of royalties for the fourth quarter of 2018. As of December 31, 2018, the Company recorded a total accrual of $38 million related to this matter which represented the jury award plus the Company's estimate of additional damages for the period from June 30, 2018 to the trial date in November 2018 and the royalties accrued in the fourth quarter of 2018.

In July 2019, the Court awarded supplemental damages for the period from June 30, 2018 through the end of the trial in November 2018 and established the interest rates for pre- and post-judgment interest, which when combined with the original award, resulted in a $35 million preliminary judgment in favor of Bio-Rad for damages through November 2018 and interest. During the three months ended March 31, 2020 and 2019, the Company recorded royalties of $4.4 million and $7.9 million, respectively, as a cost of revenue and an additional $0.3 and $0.8 million during the three months ended March 31, 2020 and 2019, respectively, as an operating expense for estimated pre- and post-judgment interest. The Company's accrual of $73.3 million as of March 31, 2020 is comprised of the preliminary judgment, along with the Company's estimate of additional royalties and interest for the period from November 2018 through March 31, 2020. To date the Company has not made any payments related to the judgment or royalties. In July 2019, the Court denied Bio-Rad's other post-trial requests such as attorneys' fees and enhanced damages for willful infringement.

In July 2019, the Court also granted Bio-Rad a permanent injunction against the Company's GEM microfluidic chips and associated consumables that were found to infringe the Bio-Rad patents, which have historically constituted a significant amount of the Company's product sales. These decisions were entered as a final judgment against the Company in August 2019, and the injunction became effective on August 28, 2019. Under the injunction, the Company is permitted to continue to sell its GEM microfluidic chips and associated consumables for use with its historical installed base of instruments provided that the Company pay into escrow a royalty of 15% of the Company's net revenue related to such sales occurring after August 28, 2019. The amounts will be held in escrow until the conclusion of the Company's appeal. The Company appealed the injunction to the Federal Circuit. The Federal Circuit granted an interim order staying the injunction pending resolution of the Company's motion with respect to the Company's Single Cell CNV and Linked-Read solutions subject to the 15% royalty payment described above. On September 24, 2019, the Federal Circuit extended the stay with respect to the Single Cell CNV and Linked-Read solutions for the pendency of the appeal, but otherwise denied the Company's request to stay the injunction. The Company also appealed the judgment to the Federal Circuit, which held oral arguments in April 2020.

In August 2019, the Court ordered that the Company may post a bond in the amount of $52 million in lieu of payment of the final judgment. Bio-Rad subsequently asked the Court to increase the amount of the bond to approximately $61 million. The Company also asked the Court to reconsider its ruling and decrease the potential bond to approximately $35 million. On September 13, 2019, the Company posted a $52 million bond (the "Bond") in lieu of payment of the judgment pending the Company's ongoing appeal. In connection with the Bond, the Company deposited $45 million as collateral in a segregated cash account, where it will be held until the conclusion of the appeal.

On October 10, 2019, the Court denied the Company's motion to decrease the bond amount, and, without addressing Bio-Rad's request to increase the bond amount, stayed any execution or enforcement of the judgment until the completion of appeal, and for thirty days thereafter.

The ITC 1068 Action

On July 31, 2017, Bio-Rad and Lawrence Livermore National Security, LLC filed a complaint against the Company in the U.S. International Trade Commission ("ITC") pursuant to Section 337 of the Tariff Act of 1930, accusing substantially all of the Company's products of infringing certain asserted patents (the "ITC 1068 Action"). In September 2018, the judge found that the Company's GEM microfluidic chips infringe certain of the asserted patents, but also that the Company's gel bead manufacturing microfluidic chip and Next GEM microfluidic chip do not infringe any claim asserted against them (the "Initial Determination"). The judge recommended entry of an exclusion order preventing the Company from importing its GEM microfluidic chips and a cease and desist order that would prevent the Company from selling such imported chips.

On December 18, 2019, the ITC issued its final determination in the ITC 1068 Action (the "Final Determination"). The Final Determination affirmed the Initial Determination that the Company's Next GEM microfluidic chips and gel bead manufacturing microfluidic chips do not infringe any of the claims asserted against them. The Final Determination also affirmed the ruling that the Company's GEM microfluidic chips infringe the '664, '682 and '635 patents but not the '160 patent. The ITC issued (1) a limited exclusion order prohibiting the unlicensed importation of the GEM microfluidic chips into the United States and (2) a cease and desist order preventing the Company from selling such imported GEM microfluidic chips in the United States. The ITC expressly allowed the importation and sale of the GEM microfluidic chips for use by researchers who were using such chips as of December 18, 2019, and who have a documented need to continue receiving such chips for a specific current ongoing research project for which that need cannot be met by any alternative product. The Final Determination was subject to a 60-day presidential review period. During the presidential review period, the Company was permitted to continue importation and sales of the GEM microfluidic chips subject to payment of a bond of three (3) percent of the entered value of the accused microfluidic chips.

The Company appealed the Final Determination to the Federal Circuit. The Company expects oral arguments to be held around the first quarter of 2021 and a decision around mid-2021.

The Northern District of California Action

On July 31, 2017, Bio-Rad and Lawrence Livermore National Security, LLC also filed suit against the Company in the U.S. District Court for the Northern District of California, alleging that the Company's GEM products infringe certain patents in addition to the patents asserted in the ITC 1068 Action. The complaint seeks injunctive relief, unspecified monetary damages, costs and attorneys' fees. This litigation has been stayed pending resolution of the Federal Circuit appeal of the ITC 1068 Action. The Company believes that this lawsuit is without merit and intends to vigorously defend itself.

The Germany Action

On July 31, 2017, Bio-Rad filed suit against the Company in Germany in the Munich Region Court alleging that the Company infringed a European patent. Bio-Rad dismissed this action in August 2018.

On February 13, 2018, Bio-Rad filed suit against the Company in Germany in the Munich Region Court alleging that its Chromium instruments, GEM microfluidic chips and certain accessories infringe a German utility model. Bio-Rad seeks unspecified damages and an injunction prohibiting sales of these products in Germany and requiring the Company to recall these products sold in Germany subsequent to February 11, 2018. An initial hearing was held on November 27, 2018, and a subsequent hearing was held on May 15, 2019. The Court issued a ruling on November 20, 2019. The Court ruled that the Company's GEM microfluidic chips, as well as certain Chromium instruments and accessories used with GEM microfluidic chips, infringed the German Utility Model. The Court issued an injunction with respect to such GEM microfluidic chips, Chromium instruments and accessories used with such systems, prohibiting among other things the sale of these products in Germany and the importation of such products into Germany. The Court found that the Company is obligated to compensate Bio-Rad for unspecified damages and required that these products be recalled from distribution channels in Germany. The Court further found that the Company has to bear the statutory costs of the legal dispute in a minimum amount of at least 61,000 Euros. The Company has accrued the 61,000 Euros for statutory costs in the condensed consolidated balance sheet as of March 31, 2020. The Company is unable to estimate any additional potential exposure related to the matter beyond the statutory costs that have been accrued. The Court's ruling did not address the Company's Next GEM products, which were not accused in this action and which constitute substantially all of the Company's sales in Germany. The Company is currently appealing the Court's ruling.

On April 6, 2020, the Munich Higher Regional Court (the "Higher Court") issued a ruling completely staying enforcement of the ruling of the lower Court, including the injunction, subject to the payment of a bond by the Company. The Higher Court found that the lower Court's claim construction was not justifiable and that the facts did not provide a basis for a finding of infringement. On April 16, 2020, the Company paid a 2.8 million Euro bond to the Higher Court to completely stay enforcement of the ruling. The bond is refundable upon a favorable ruling on the merits by the Higher Court. The Company expects the Higher Court to rule on the merits around the end of 2020.

The 2018 Delaware Action

On October 25, 2018, Bio-Rad filed suit against the Company in the U.S. District Court for the District of Delaware alleging that substantially all of the Company's Chromium products, including our GEM products and Next GEM products, infringe U.S. Patent Nos. 9,562,837 and 9,896,722. Bio-Rad seeks injunctive relief, unspecified monetary damages, costs and attorneys' fees. Discovery is in progress. A Markman hearing is scheduled in June 2020, and trial is scheduled in September 2021.

In October 2019, the Company filed four petitions for *inter partes* review ("IPR") challenging the validity of both asserted patents. On April 27, 2020, the Patent Trials and Appeals Board ("PTAB") instituted review on all four of these petitions. A final written decision is expected from the PTAB in April 2021.

The Massachusetts Action

On September 11, 2019, Bio-Rad filed suit against the Company in the U.S. District Court for the District of Delaware alleging that the Company's Next GEM products infringe certain claims of U.S. Patent No. 8,871,444. On November 5, 2019, Bio-Rad amended the complaint to additionally allege that the Company's Next GEM products infringe certain claims of U.S. Patent Nos. 9,919,277 and 10,190,115. The '444 and '277 patents are exclusively licensed by Bio-Rad from Harvard University, which subsequently joined the suit as a party plaintiff. The '444 and '277 patents are projected to expire in October 2024.

On December 18, 2019, Bio-Rad dismissed this action in the District of Delaware and refiled it in the U.S. District Court for the District of Massachusetts. The case was assigned to Judge William G. Young. On January 14, 2020, the Court consolidated this case with a separate action, Bio-Rad Laboratories Inc. et al. v. Stilla Technologies, Inc. ("Stilla"), in which Bio-Rad is asserting the '444 patent (among other patents) against Stilla's droplet digital PCR product. On January 23, 2020, the Company filed a motion to dismiss the case and to transfer the '115 patent to the Northern District of California, where the related '059 patent is stayed.

On January 24, 2020, the Company filed antitrust counterclaims against Bio-Rad alleging violations of (a) Section 7 of the Clayton Act, (b) Section 2 of the Sherman Act and (c) California unfair competition laws, for illegally acquiring Raindance and illegally monopolizing or attempting to monopolize markets relating to droplet digital PCR products, droplet single cell products and droplet genetic analysis technology. On February 19, 2020, Bio-Rad moved to dismiss, or alternatively to stay and sever, the Company's antitrust claims.

On February 5, 2020, the Company filed additional counterclaims against Bio-Rad alleging that Bio-Rad's single cell ATAC-seq products infringe U.S. Patent No. 9,029,085 and 9,850,526 that are exclusively licensed to the Company from Harvard University. On February 26, 2020, Bio-Rad moved to sever and stay the patent counterclaims. On March 6, 2020, the Court denied the motion to stay and deferred the motion to sever until the pretrial conference.

On March 25, 2020, the Court held a hearing with respect to (a) the Company's motion to dismiss Bio-Rad's patent claims, (b) the Company's motion to transfer the '115 patent and (c) Bio-Rad's motion to dismiss the Company's antitrust counterclaims. On April 30, 2020, the Court denied the Company's motion to dismiss with respect to Bio-Rad's patent claims and granted the Company's motion to transfer the '115 patent to the Northern District of California. The Court has not yet ruled on Bio-Rad's motion to dismiss the Company's antitrust counterclaims.

On March 23, 2020, Stilla moved for a 90 day stay of the case due to the impact of COVID-19 on Stilla's operations. The Court issued a 90 day stay of the Massachusetts Action, effective March 30, 2020, including a stay of all of Bio-Rad's and the Company's claims and counterclaims. A Markman hearing is expected in September 2020, and a trial with respect to the Company's antitrust counterclaims is expected in July 2021. A trial date for Bio-Rad's patent claims and the Company's patent counterclaims has not yet been set, but may be set for shortly after the antitrust trial.

The 2019 Becton Dickinson Settlement and Patent Cross License Agreement

On November 15, 2018, Becton, Dickinson and Company ("BD") and Cellular Research, Inc. filed suit against the Company in the U.S. District Court for the District of Delaware, alleging that the Company infringed certain patents. In September 2019, the Company filed counterclaims alleging that BD and Cellular Research, Inc. (together, the "BD Entities") infringed a number of the Company's patents.

In October 2019, the Company entered into a settlement and patent cross license agreement (the "BD Agreement") with the BD Entities. The BD Agreement resolved all outstanding patent litigation between the parties (the "BD Litigation"), which was dismissed with prejudice on October 21, 2019. Under the terms of the BD Agreement, the BD Entities granted the Company and its affiliates, and the Company granted BD and its affiliates, a worldwide, royalty-free, non-exclusive, fully paid-up license to certain patents and patent applications relating to molecular barcoding and single cell analysis, including to all the patents asserted in the BD Litigation. The Company is required to make an aggregate payment of $25.0 million to BD in annual amounts of $6.25 million over four years beginning in January 2020 in connection with the BD Agreement. Upon execution of the BD Agreement, the fair value of these payments was recognized as a liability and is classified as accrued expenses and other current liabilities and accrued license fee, noncurrent on the Company's condensed consolidated balance sheet as of March 31, 2020. As part of the BD Agreement, each party, on behalf of itself and its affiliates, has also entered into a covenant not to sue in certain fields related to each company's products. The companies have also agreed on behalf of themselves and their affiliates to refrain from challenging the patents and patent applications licensed under the BD Agreement. The Company considers this matter closed.

For certain of the Company's litigation matters, the Company is required to make milestone payments to the Company's legal counsel based on certain litigation outcomes. Based on the occurrence in the first quarter of 2020 of one such milestone in one of the Company's litigation matters, a milestone payment to the Company's legal counsel in the amount of $5 million was triggered in the first quarter of 2020. The Company expects to trigger additional such milestone payments during the pendency of litigation, though the timing and amounts of such payments is uncertain.

6. Capital Stock

As of March 31, 2020, Class A common stock and Class B common stock issued and outstanding was 54,649,791 shares and 43,495,417 shares, respectively. During the first quarter of 2020, 31,774,013 shares of Class B common stock were converted to shares of Class A common stock upon the election of the holders of such shares.

7. Equity Incentive Plans

Amended and Restated 2012 Stock Plan

As of March 31, 2020, the number of shares of Class A common stock issuable under the Amended and Restated 2012 Stock Plan which includes shares issuable upon the exercise of outstanding awards is 13,185,273. Following the adoption of the 2019 Omnibus Incentive Plan in September 2019, any awards outstanding under the Amended and Restated 2012 Stock Plan continue to be governed by their existing terms but no further awards may be granted under the Amended and Restated 2012 Stock Plan.

2019 Omnibus Incentive Plan

As of March 31, 2020, the number of shares of Class A common stock under the 2019 Omnibus Incentive Plan which includes shares issuable in connection with outstanding awards and shares available for issuance in connection with the grant of future awards is 11,000,000.

2019 Employee Stock Purchase Plan

A total of 2,000,000 shares of Class A common stock were reserved for issuance under the 2019 Employee Stock Purchase Plan ("ESPP"). As of March 31, 2020, no shares of Class A common stock have been purchased under the ESPP.

Stock-based Compensation

The Company recorded stock-based compensation expense in the condensed consolidated statement of operations for the periods presented as follows (in thousands):

	Three months ended March 31,	
	2020	2019
Cost of revenue	$ 247	$ 32
Research and development	2,887	507
Selling, general and administrative	3,584	820
Total stock-based compensation expense	$ 6,718	$ 1,359

Restricted Stock Units

The Company began granting restricted stock unit awards ("RSUs") to employees and other service providers during the three months ended March 31, 2020. RSU activity for the three months ended March 31, 2020 is as follows:

	Restricted Stock Units	Weighted-Average Grant Date Fair Value (per share)
Outstanding as of December 31, 2019	—	$ —
Granted	58,254	$ 84.70
Outstanding as of March 31, 2020	58,254	$ 84.70

Stock Options

Stock options activity for the three months ended March 31, 2020 is as follows:

	Stock options	Weighted-Average Exercise Price
Outstanding as of December 31, 2019	15,918,243	$ 6.82
Granted	663,644	$ 80.03
Exercised	(1,903,612)	$ 1.73
Forfeited	(150,134)	$ 11.09
Outstanding as of March 31, 2020	14,528,141	$ 10.79

Early Exercise of Options

Stock options granted under the Amended and Restated 2012 Stock Plan provide certain employee and director option holders the right to exercise unvested options in exchange for restricted shares of Class A common stock which are subject to repurchase by the Company at the original issuance price in the event the optionee's employment is terminated either voluntarily or involuntarily prior to the applicable vesting date. The consideration received for the early exercised options is recorded as a liability on the condensed consolidated balance sheets and reclassified to stockholders' deficit as the shares vest. As of March 31, 2020 and December 31, 2019, the total repurchase liability related to the unvested early exercised options was $372,000 and $494,000, respectively, which is included in other current and noncurrent liabilities on the condensed consolidated balance sheets.

8. Income Tax

The Company's provision for income taxes was $298,000 for the three months ended March 31, 2020 with an effective tax rate of 1.4% and $34,000 for the three months ended March 31, 2019 with an effective tax rate of 0.9%. Deferred tax assets generated from the Company's domestic net operating losses have been fully reserved, as the Company believes it is not more likely than not that the benefit will be realized.

On March 27, 2020, the Coronavirus Aid, Relief and Economic Security Act (the "CARES Act") was signed into law. The CARES Act includes provisions relating to net operating loss carryback periods, alternative minimum tax credit refunds, modifications to the net interest deduction limitations and technical corrections to tax depreciation methods for qualified improvement property. These provisions are not expected to have a material impact on the Company's condensed consolidated financial statements.

9. 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 March 31,	
	2020	2019
Net loss	$ (21,143)	$ (3,636)
Weighted average shares used in computing net loss per share, basic and diluted	96,829,093	14,801,867
Net loss per share, basic and diluted	$ (0.22)	$ (0.25)

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:

	Three months ended March 31,	
	2020	2019
Convertible preferred stock (on an if-converted basis)	—	67,704,278
Stock-options to purchase common stock	14,528,141	14,321,097
Shares subject to repurchase	115,625	201,750
Common stock warrants	—	266,099
Restricted stock units	58,254	—
Shares committed under ESPP	103,830	—
Total	14,805,850	82,493,224

Item 2. Management's Discussion and Analysis of Financial Condition and Results of Operations.

You should read the following discussion of our financial condition and results of operations in conjunction with our unaudited condensed financial statements and the related notes and other financial information included elsewhere in this Quarterly Report and our audited consolidated financial statements and notes thereto and the section titled "Management's Discussion and Analysis of Financial Condition and Results of Operations" in our Annual Report on Form 10-K for the fiscal year ended December 31, 2019 filed with the SEC on February 27, 2020. As discussed in the section titled "Special Note Regarding Forward Looking Statements," the following discussion and analysis, in addition to historical financial information, contains forward-looking statements that involve risks and uncertainties. Our actual results could differ materially from those anticipated in these forward-looking statements as a result of various factors, including those set forth in the section titled "Risk Factors" under Part II, Item 1A below.

In addition, statements that "we believe" and similar statements reflect our beliefs and opinions on the relevant subject. These statements are based upon information available to us as of the date of this Quarterly Report and while we believe such information forms a reasonable basis for such statements, such information may be limited or incomplete, and our statements should not be read to indicate that we have conducted an exhaustive inquiry into, or review of, all potentially available relevant information. These statements are inherently uncertain and investors are cautioned not to unduly rely upon these statements.

We operate on a fiscal year that ends on December 31.

Overview

We are a life sciences technology company focused on building innovative products and solutions to interrogate, understand and master biological systems at resolution and scale that matches the complexity of biology. Our expanding suite of offerings leverages our cross-functional expertise across biology, chemistry, software and hardware to provide a comprehensive, dynamic and high-resolution view of complex biological systems. We have launched multiple products that enable researchers to understand and interrogate biological analytes in their full biological context. Our commercial product portfolio leverages our Chromium and Chromium Connect instruments, which we refer to as "Chromium instruments" or "instruments," and our proprietary microfluidic chips, slides, reagents and other consumables for both our Visium and Chromium solutions, which we refer to as "consumables." We bundle our software with these products to guide customers through the workflow, from sample preparation through analysis and visualization.

Our products cover a wide variety of applications and allow researchers to analyze biological systems at fundamental resolutions and on massive scales, such as at the single cell level for millions of cells. Our Chromium instruments and Chromium consumables are designed to work together exclusively. After buying a Chromium instrument, customers purchase consumables from us for use in their experiments. Accordingly, as the installed base of our instruments grows, we expect recurring revenue from consumable sales to become an increasingly important driver of our operating results. As such, our revenue growth is expected to outpace growth in our instrument placements as our business develops. In addition to instrument and consumable sales, we derive revenue from post-warranty service contracts for our Chromium instruments. For the three months ended March 31, 2020, sales of our Chromium instruments accounted for 13% of our revenue, sales of our consumables accounted for 85% of our revenue and sales of services accounted for 2% of our revenue, respectively.

On September 16, 2019, we completed an initial public offering ("IPO"), in which we sold 11,500,000 shares of Class A common stock (which included 1,500,000 shares that were offered and sold pursuant to the full exercise of the IPO underwriters' option to purchase additional shares) at a price to the public of $39.00 per share. We received aggregate net proceeds of $410.8 million after deducting offering costs, underwriting discounts and commissions of $37.7 million.

Since our inception in 2012, we have incurred net losses in each year. Our net losses were $21.1 million and $3.6 million for the three months ended March 31, 2020 and 2019, respectively. As of March 31, 2020, we had an accumulated deficit of $283.5 million and cash and cash equivalents totaling $372.4 million. We expect to continue to incur significant expenses for the foreseeable future and to incur operating losses in the near term. We expect our expenses will increase substantially in connection with our ongoing activities, as we:

- attract, hire and retain qualified personnel;
- scale our technology platforms and introduce new products and services;
- protect and defend our intellectual property;
- acquire businesses or technologies; and
- invest in processes, tools and infrastructure to support the growth of our business.

Impact of COVID-19

In March 2020, the World Health Organization declared the global outbreak of COVID-19 to be a pandemic, which continues to spread throughout the United States and the world causing uncertainty and disruption to business activities. We are closely monitoring the recent developments surrounding the global pandemic and note in particular the following:

- During this pandemic, we moved quickly to place instruments and to provide reagents to clinicians and researchers around the world working to understand COVID-19 and develop cures for the disease. Our products are a critical tool for infectious disease research because they allow the detailed understanding of how the virus causing COVID-19 impacts infected people, how the immune system is mobilized, which immune cells react to pathogens and many other aspects of the disease and potential therapies. Certain of our customers have moved our Chromium Controller instruments into a Biosafety Level 3 (BSL3) facility, where they can be as close as possible to the front lines of this battle against COVID-19;
- 10x has been designated an essential business that can continue operations during the COVID-19 pandemic. In early March, we promptly instituted protocols to have many personnel work remotely. At the same time, we have employees who are continuing to support essential operations to provide critical products to researchers and who are continuing important research and development functions. For those employees, we have implemented strict social distancing and other protective measures in order to ensure their health and safety. We have also restricted business travel and have closed our campus and other facilities to outside visitors. To date, these arrangements have not materially affected our ability to maintain our business operations, including the operation of financial reporting systems, internal control over financial reporting and disclosure controls and procedures;
- Our production, shipping and customer service functions remain operational to ensure we maintain a continuous supply of products to our customers. We are communicating regularly with our suppliers so that our supply chain remains intact and we have not yet experienced any material supply issues. Our customer service teams around the world are operating remotely and remain available to assist our customers and partners as needed; and
- We are actively reviewing and managing costs to navigate the current environment and to allow 10x to remain in a strong financial and operating position until the pandemic is brought under control.

While the disruption is currently expected to be temporary, there is considerable uncertainty around its duration. The Company expects these disruptions to impact its operating results, however, the related financial impact and duration cannot be reasonably estimated at this time.

Results of Operations

(in thousands)	Three months ended March 31, 2020	2019
Revenue	$ 71,905	$53,578
Cost of revenue	15,108	13,965
Gross profit	56,797	39,613
Operating expenses:		
Research and development	25,992	14,965
Selling, general and administrative	50,387	26,893
Accrued contingent liabilities	302	790
Total operating expenses	76,681	42,648
Loss from operations	(19,884)	(3,035)
Other income (expense):		
Interest income	1,318	263
Interest expense	(662)	(684)
Other income (expense), net	(96)	(146)
Loss on extinguishment of debt	(1,521)	—
Total other income (expense)	(961)	(567)
Loss before provision for income taxes	(20,845)	$ (3,602)
Provision for income taxes	298	34
Net loss	$(21,143)	$ (3,636)

The following table sets forth our condensed consolidated results of operations data as a percentage of revenue for the periods presented.

	Three months ended March 31,	
	2020	2019
Revenue	100.0%	100.0%
Cost of revenue	21.0%	26.1%
Gross profit	79.0%	73.9%
Operating expenses:		
Research and development	36.1%	27.9%
Selling, general and administrative	70.1%	50.2%
Accrued contingent liabilities	0.4%	1.5%
Total operating expenses	106.6%	79.6%
Loss from operations	(27.6)%	(5.7)%
Other income (expense):		
Interest income	1.7%	0.5%
Interest expense	(0.9)%	(1.3)%
Other income (expense), net	(0.1)%	(0.3)%
Loss on extinguishment of debt	(2.1)%	—
Total other income (expense)	(1.40)%	(1.1)%
Loss before provision for income taxes	(29.0)%	(6.8)%
Provision for income taxes	(0.4)%	(0.1)%
Net loss	(29.4)%	(6.9)%

Comparison of the Three Months Ended March 31, 2020 and 2019

Revenue

(dollars in thousands)	Three months ended March 31,		Change	
	2020	2019	$	%
Revenue	$71,905	$53,578	$18,327	34%

Revenue increased $18.3 million, or 34%, for the three months ended March 31, 2020 as compared to the three months ended March 31, 2019. The increase was driven primarily by an increase in consumables revenue. Consumables revenue increased $15.6 million, or 34%, to $61.4 million for the three months ended March 31, 2020 as compared to the three months ended March 31, 2019. The growth in consumables revenue was substantially driven by the growth in the instrument installed base. We experienced continued increases in revenue from all our consumables as well as from sales of our Visium consumables which were introduced in the fourth quarter of 2019.

Instrument revenue increased $2.3 million, or 33%, to $9.1 million for the three months ended March 31, 2020 as compared to the three months ended March 31, 2019 due to higher volume of instruments sold, partially offset by lower average selling prices. First quarter sales of 2020 include sales of our newly introduced Chromium Connect which have substantially higher selling prices.

We largely rely on research activities in both academic institutions and government laboratories for our revenue. In March, as the impact of the global COVID-19 pandemic intensified, we saw a significant reduction in customer activity other than research related to the virus. By the end of the quarter, the vast majority of academic and government labs around the world had suspended or severely reduced operations in compliance with stay-at-home, shelter-in-place and similar orders. These closures and reduced operations have significantly impacted our business and we expect they will continue to do so. We believe that this impact will be temporary, and we believe that once labs re-open and are able to resume normal levels of research activities, we will continue to see demand for our products. However, there may be delays before labs are able to fully resume their research and we cannot reliably estimate the extent to which the COVID-19 pandemic will impact our overall demand in the second quarter of 2020 and beyond.

Cost of revenue, gross profit and gross margin

(dollars in thousands)	Three months ended March 31, 2020	2019	Change $	%
Cost of revenue	$15,108	$13,965	$ 1,143	8%
Gross profit	$56,797	$39,613	$17,184	43%
Gross margin	79%	74%		

Cost of revenue increased $1.1 million, or 8%, in the three months ended March 31, 2020 as compared to the three months ended March 31, 2019. In addition to higher cost of sales in line with revenue growth, the increase was related to costs associated with developing a second manufacturing facility and additional scrap of $1.8 million, partially offset by a decrease of $3.5 million in accrued royalties related to the Bio-Rad litigation.

Gross profit increased $17.2 million, or 43%, for the three months ended March 31, 2020 as compared to the three months ended March 31, 2019, primarily due to increased revenue and decreases in accrued royalties. Gross margin increased by 5% for the three months ended March 31, 2020 as compared to the three months ended March 31, 2019, due to a decrease in accrued royalties related to the Bio-Rad litigation of $3.5 million, partially offset by increases related to developing a second manufacturing facility and additional scrap of $1.8 million.

As a result of an expected decrease in overall demand in the second quarter of 2020, we expect that our production facilities will run at less than normal capacity until and unless demand for our solutions normalizes which will negatively impact our gross profits and gross margins. While we cannot reliably estimate the extent to which the COVID-19 pandemic will impact our overall gross profit and gross margins in the second quarter of 2020 and beyond, we plan to continue to invest in our manufacturing facilities and production efforts and manage our supply chain to ensure the delivery of products to our customers.

Operating expenses

(dollars in thousands)	Three months ended March 31, 2020	2019	Change $	%
Research and development	$25,992	$14,965	$11,027	74%
Selling, general and administrative	50,387	26,893	23,494	87%
Accrued contingent liabilities	302	790	(488)	(62)%
Total operating expenses	$76,681	$42,648	$34,033	80%

Research and development expenses increased $11.0 million, or 74%, for the three months ended March 31, 2020 as compared to the three months ended March 31, 2019. The increase was primarily driven by an increase in personnel expenses of $7.1 million and laboratory materials, supplies and expensed equipment of $2.5 million used to support our research and development efforts. In addition, we incurred $1.8 million of higher allocated costs for facilities and information technology to support the development of our

second manufacturing facility and the general expansion of our operations. Beginning in March 2020, we temporarily closed certain of our research laboratory facilities to comply with government restrictions in connection with the COVID-19 pandemic and as a result we incurred lower materials spending. While we cannot reliably estimate the extent to which the COVID-19 pandemic will impact our overall research activities or expenditures in the second quarter and beyond, we are taking certain measures to manage our spending while we continue to invest in innovation, hire for key roles and work on our product roadmap.

Selling, general and administrative expenses increased $23.5 million, or 87%, for the three months ended March 31, 2020 as compared to the three months ended March 31, 2019. The increase in expenses was primarily driven by increases in outside legal expenses of $11.7 million (including $5 million of success fees) and personnel expenses of $8.9 million. While certain costs will decline as the underlying activities are restricted by the COVID-19 pandemic, including travel and related expenses, conferences and events, we are taking certain measures to manage our spending while continuing to incur expenses that we believe will further our strategic initiatives.

Other income (expense), net

(dollars in thousands)	Three months ended March 31, 2020	2019	Change $	%
Interest income	$ 1,318	$ 263	$ 1,055	401%
Interest expense	(662)	(684)	22	(3)%
Other expense	(96)	(146)	50	(34)%
Loss on extinguishment of debt	(1,521)	—	(1,521)	N/M
Total other expense, net	$ (961)	$ (567)	$ (394)	69%

N/M: result not meaningful.

Interest income increased by $1.1 million to $1.3 million for the three months ended March 31, 2020 from $263,000 for the three months ended March 31, 2019. The increase was primarily due to interest income earned from the investment of the net proceeds from the IPO completed in September 2019.

Interest expense decreased nominally for the three months ended March 31, 2020 from the three months ended March 31, 2019. The slight decrease was driven primarily by the voluntary prepayment of our term loan on February 20, 2020 and lower interest rates offset by additional interest expense recognized on accrued license fees.

The change in other expense for the three months ended March 31, 2020 as compared to the three months ended March 31, 2019 was driven by realized and unrealized losses from foreign currency rate measurement fluctuations.

Loss on extinguishment of debt was $1.5 million for the three months ended March 31, 2020. In February 2020, we prepaid the remaining balance on our term loan, an end-of-term payment and prepayment fees.

Liquidity and Capital Resources

As of March 31, 2020, we had approximately $372.4 million in cash and cash equivalents which were primarily held in U.S. bank deposit accounts and money market funds, $30.9 million in accounts receivable and an accumulated deficit of $283.5 million. Restricted cash of $59.5 million serves as collateral for a bond and royalties in connection with the Bio-Rad litigation, as well as collateral for outstanding letters of credit for facilities. We have generated negative cumulative cash flows from operations since inception through the three months ended March 31, 2020, and we have generated losses from operations since inception as reflected in our accumulated deficit of $283.5 million. We expect to continue to incur operating losses for the foreseeable future due to the investments we intend to make and as a result we may require additional capital resources to execute strategic initiatives to grow our business.

In August 2019, the U.S. District Court for the District of Delaware entered final judgment in the amount of approximately $35 million and subsequently ordered that we may post a bond in the amount of $52 million in lieu of payment of the final judgment. On September 13, 2019, we posted a $52 million bond in lieu of payment of the final judgment pending our ongoing appeal. In connection with the bond, we deposited $45.4 million as collateral in a segregated cash account, where it will be held until the conclusion of the appeal. This collateral is included in restricted cash as of March 31, 2020. On October 10, 2019, the Court denied our motion to decrease the bond amount and stayed any execution or enforcement of the judgment until the completion of appeal, and for thirty days thereafter.

Pursuant to the judgment, each quarter we have placed into an escrow an amount equal to 15% of net sales of our GEM microfluidic chips and associated consumables subsequent to August 28, 2019, which was the effective date of the injunction. The amounts will be held until conclusion of the appeal and classified as noncurrent restricted cash. As of March 31, 2020, the amount placed into escrow and included in restricted cash was $8.1 million. We expect the amount that we set aside each quarter to decline as we phase out our legacy GEM products.

We currently anticipate making aggregate capital expenditures of between approximately $40 million and $50 million during the next 12 months, which includes the construction costs of our global expansion and for equipment to be used for manufacturing and research and development. Our future capital requirements will depend on many factors including our revenue growth rate, research and development efforts, the impacts of the COVID-19 pandemic, the timing and extent of additional capital expenditures to invest in existing and new facilities, the expansion of sales and marketing and international activities, the timing of capital expenditures relating to our planned implementation of a new enterprise resource planning system and the introduction of new products. We have and may in the future enter into arrangements to acquire or invest in businesses, services and technologies, including intellectual property rights, and any such acquisitions or investments could significantly increase our capital needs.

We believe that our existing cash and cash equivalents and cash generated from sales of our products will be sufficient to meet our anticipated cash needs for at least the next 12 months. However, our liquidity assumptions may prove to be incorrect, and we could exhaust our available financial resources sooner than we currently expect.

The COVID-19 pandemic has negatively impacted the global economy, resulted in the closure of the vast majority of our customers' facilities, disrupted global supply chains and created significant volatility and disruption of financial markets. An extended period of economic disruption and closure of our customers' labs could materially affect our business, results of operations, financial condition and access to sources of liquidity. As a result of the current and uncertain future impact of the COVID-19 pandemic, we are proactively taking actions to preserve and improve our liquidity position including, among other actions, implementing certain operating expense controls. We will continue to monitor the development and control of the COVID-19 pandemic and we believe there will be an increase in business activity upon the loosening of pandemic-related restrictions, including a resurgence in activity levels at laboratories which were temporarily closed. We are currently uncertain as to when this resurgence will occur but we intend to continue to strategically plan and invest our resources in research and development activities and other initiatives while the COVID-19 pandemic is brought under control, allowing for a gradual return to more normal levels of economic activity in our business environment.

Sources of liquidity

Since our inception, we have financed our operations and capital expenditures primarily through sales of convertible preferred stock and common stock, revenue from sales and issuances of debt. In September 2019, we completed our IPO for aggregate proceeds of $410.8 million, net of offering costs, underwriter discounts and commissions of $37.7 million.

Silicon Valley Bank Loan and Security Agreement

We are party to the Loan and Security Agreement, under which (i) borrowings under the term loan were prepaid on February 20, 2020 and (ii) no borrowings were outstanding under the up to $25.0 million revolving line of credit as of March 31, 2020. We were in compliance with all covenants under the Loan and Security Agreement through March 31, 2020 and currently remain in compliance with such covenants.

The revolving line of credit remains available. The revolving line of credit matures on December 1, 2022 and the amount available under the revolving line of credit is based on 80% of eligible receivables and is subject to a borrowing base calculation. Borrowings under the revolving line of credit would accrue interest which is payable monthly at a floating rate equal to the greater of The Wall Street Journal prime rate plus 0.25% or 4.5% per annum.

Cash flow summary

The following table summarizes our cash flows for the periods indicated:

(in thousands)	Three Months Ended March 31, 2020	2019
Net cash (used in) provided by:		
Operating activities	$ (2,576)	$ 9,318
Investing activities	(8,079)	(9,367)
Financing activities	(33,819)	923
Effect of exchange rates on cash, cash equivalents and restricted cash	(116)	(2)
Net (decrease) increase in cash, cash equivalents and restricted cash	$(44,590)	$ 872

Operating activities

The net cash used in operating activities of $2.6 million for the three months ended March 31, 2020 was due primarily to a net loss of $21.1 million, partially offset by net cash inflow from changes in operating assets and liabilities of $6.1 million, and adjustments for stock-based compensation expense of $6.7 million, depreciation and amortization of $3.2 million, loss on extinguishment of debt of $1.5 million and amortization of leased right-of-use assets of $1.1 million. The net cash inflow from operating assets and liabilities was primarily due to an increase in accrued compensation and other related benefits of $6.2 million as we increased our headcount to support our expanding operations, an increase in accrued expenses and other current liabilities of $4.6 million consistent with the growth of our business, an increase in accrued contingent liabilities of $4.7 million, and a decrease in accounts receivable of $2.5 million due to timing of collections, partially offset by a decrease in other noncurrent liabilities of $5.7 million, an increase in inventory of $4.1 million due to the timing of inventory purchases including advance purchases of inventory in anticipation of supply chain disruptions associated with the COVID-19 pandemic and a decrease of $1.3 million in payment of operating lease expenses.

The net cash provided by operating activities of $9.3 million for the three months ended March 31, 2019 was due primarily to a net loss of $3.6 million, with adjustments for stock-based compensation expense of $1.4 million and depreciation and amortization of $1.0 million. The inflow from changes in operating assets and liabilities was primarily due to an increase in accrued contingent liabilities of $8.6 million, an increase in deferred rent, noncurrent of $7.3 million, an increase in accrued expenses and other current liabilities of $1.8 million and a decrease in accounts receivable of $2.7 million, partially offset by an increase in prepaid expenses and other current assets of $6.9 million, an increase in inventory of $2.6 million and a decrease in accounts payable of $1.3 million.

Investing activities

The net cash used in investing activities of $8.1 million in the three months ended March 31, 2020 was due to purchases of property and equipment.

The net cash used in investing activities of $9.4 million in the three months ended March 31, 2019 was due to purchases of property and equipment.

Financing activities

The net cash used in financing activities of $33.8 million in the three months ended March 31, 2020 was primarily due to the use of $31.3 million in connection with loan principal payments including the early repayment of the term loan under the Loan and Security Agreement (including fees in connection with the early repayment of the term loan), payments on financing arrangements of $5.9 million and proceeds of $3.3 million from the issuance of common stock from the exercise of stock options.

The net cash provided by financing activities of $0.9 million in the three months ended March 31, 2019 was primarily from proceeds from the issuance of convertible preferred stock, net of issuance costs.

Concentrations of credit risk

As of March 31, 2020 and December 31, 2019, no single customer represented 10% or more of our accounts receivable balance. There was no single customer that individually exceeded 10% of our revenue during the three months ended March 31, 2020 and 2019.

Contractual Obligations and Commitments

There have been no material changes to our contractual obligations as of March 31, 2020, as compared to those disclosed in the Annual Form 10-K as of December 31, 2019.

Off-Balance Sheet Arrangements

We did not have during the periods presented, and we do not currently have, any off-balance sheet financing arrangements or any relationships with unconsolidated entities or financial partnerships, including entities sometimes referred to as structured finance or special purpose entities, that were established for the purpose of facilitating off-balance sheet arrangements or other contractually narrow or limited purposes.

Critical Accounting Policies

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

There have been no significant changes in our critical accounting policies and estimates as compared to the critical accounting policies and estimates disclosed in the section titled "Management's Discussion and Analysis of Financial Condition and Operations" included in our most recent Annual Report on Form 10-K filed with the SEC on February 27, 2020. For additional information, please refer to Note 2 to our unaudited condensed consolidated financial statements in this Quarterly Report.

Recent Accounting Pronouncements

See Note 2, "Summary of Significant Accounting Policies" in our Notes to unaudited condensed consolidated financial statements included in Part 1, Item 1 of this Quarterly Report for a discussion of recent accounting pronouncements.

Emerging Growth Company Status

We are an emerging growth company, as defined in the JOBS Act. Under the JOBS Act, emerging growth companies can delay adopting new or revised accounting standards issued subsequent to the enactment of the JOBS Act until such time as those standards apply to private companies. We have elected to use this extended transition period for complying with new or revised accounting standards that have different effective dates for public and private companies until the earlier of the date we (i) are no longer an emerging growth company or (ii) affirmatively and irrevocably opt out of the extended transition period provided in the JOBS Act. As a result, our financial statements may not be comparable to companies that comply with new or revised accounting pronouncements as of public company effective dates.

Item 3. Quantitative and Qualitative Disclosures About Market Risk.

For financial market risks related to changes in interest rates and foreign currency exchange rates, reference is made to Item 7A "Quantitative and Qualitative Disclosures about Market Risk" contained in Part II of our Annual Report on Form 10-K for the fiscal year ended December 31, 2019. Our exposure to market risk has not changed materially since December 31, 2019.

Item 4. Controls and Procedures.

Evaluation of Disclosure Controls and Procedures

Under the supervision and with the participation of our management, including our Chief Executive Officer and Chief Financial Officer, we evaluated the effectiveness of the design and operation of our disclosure controls and procedures pursuant to Rule 13a-15(e) and 15d-15(e) under the Exchange Act as of the end of the period covered by this report. Our disclosure controls and procedures are designed to ensure that information required to be disclosed in the reports 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 that such information is accumulated and communicated to our management, including the Chief Executive Officer and the Chief Financial Officer, to allow timely decisions regarding required disclosures. Any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving the desired control objective and management necessarily applies its judgment in evaluating the cost-benefit relationship of possible controls and procedures. Based on that evaluation, our Chief Executive Officer and Chief Financial Officer have concluded that our disclosure controls and procedures were effective at a reasonable assurance level as of March 31, 2020.

Changes in Internal Control over Financial Reporting

There was not any change in our internal control over financial reporting (as such term is defined in Rules 13a-15(f) under the Exchange Act) during the quarter ended March 31, 2020 that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

10x Genomics, Inc.

PART II—OTHER INFORMATION

Item 1. Legal Proceedings.

We are regularly subject to claims, lawsuits, arbitration proceedings, administrative actions and other legal and regulatory proceedings involving commercial disputes, competition, intellectual property disputes and other matters, and we may become subject to additional types of claims, lawsuits, arbitration proceedings, administrative actions, government investigations and legal and regulatory proceedings in the future and as our business grows, including proceedings related to product liability or our acquisitions, securities issuances or our business practices, including public disclosures about our business. Our success depends in part on our non-infringement of the patents or proprietary rights of third parties. Third parties have asserted and may in the future assert that we are employing their proprietary technology without authorization. We have been involved in multiple patent litigation matters in the past several years and we expect that given the litigious history of our industry and the high profile of operating as a public company, other third parties, in addition to the parties identified herein, may claim that our products infringe their intellectual property rights. There are inherent uncertainties in these legal matters, some of which are beyond management's control, making the ultimate outcomes difficult to predict. Amongst other matters, we are currently involved in the following litigation matters:

The 2015 Delaware Action

In February 2015, Raindance Technologies, Inc. ("Raindance") and the University of Chicago filed suit against us in the U.S. District Court for the District of Delaware, alleging that substantially all of our products that use our GEM microfluidic chips are infringing seven U.S. patents owned by or exclusively licensed to Raindance (the "Delaware Action"). In May 2017, Bio-Rad Laboratories, Inc. ("Bio-Rad") was substituted as the plaintiff following its acquisition of Raindance. A jury trial was held in November 2018. The jury found that all of our accused products infringed one or more of U.S. Patent Nos. 8,304,193, 8,329,407 and 8,889,083. The jury also concluded that our infringement was willful and awarded Bio-Rad approximately $24 million in damages. Post-trial, Bio-Rad moved for a permanent injunction, treble damages for willful infringement, attorneys' fees, supplemental damages for the period from the second quarter of 2018 through the end of the trial as well as pre- and post-judgment interest.

The Court denied Bio-Rad's request for attorneys' fees and enhanced damages for willful infringement. The Court awarded supplemental damages for the period from the second quarter of 2018 through the end of trial as well as pre- and post-judgment interest. The Court entered final judgment against us in the amount of approximately $35 million in August 2019.

In the fourth quarter of 2018, we began recording an accrual for estimated royalties as cost of revenue. This accrual is based on an estimated royalty rate of 15% of worldwide sales of our Chromium instruments operating our GEM microfluidic chips and associated consumables. As of March 31, 2020, we had accrued a total of $73.3 million relating to this matter which includes the $35 million judgment and our estimated 15% royalty for subsequent sales through that date.

The Court also granted Bio-Rad a permanent injunction against our GEM microfluidic chips and associated consumables that were found to infringe the Bio-Rad patents, which have historically constituted a significant amount of our product sales. However, under the injunction, we are permitted to continue to sell our GEM microfluidic chips and associated consumables for use with our historical installed base of instruments provided that we pay into escrow a royalty of 15% of our net revenue related to such sales. We appealed the injunction to the Federal Circuit. The Federal Circuit granted an interim order staying the injunction pending resolution of our motion with respect to our Single Cell CNV and Linked-Read solutions subject to the 15% royalty payment described above. On September 24, 2019, the Federal Circuit extended the stay with respect to the Single Cell CNV and Linked-Read solutions for the pendency of the appeal, but otherwise denied our request to stay the injunction. We also appealed the judgment to the Federal Circuit, which held oral arguments in April 2020.

We have dedicated significant resources to designing and manufacturing our Next GEM microfluidic chips which use fundamentally different physics from our GEM microfluidic chips. Neither the jury verdict nor the injunction relate to our Next GEM microfluidic chips based on our new proprietary design and associated consumables which we launched in May 2019 for three of our single cell solutions – Single Cell Gene Expression, Single Cell Immune Profiling and Single Cell ATAC. Since August 28, 2019, all Chromium instruments that we sell and have sold operate exclusively with our Next GEM solutions and we currently expect that our Chromium products utilizing our Next GEM microfluidic chips will constitute substantially all of our Chromium consumables sales by the end of 2020.

The ITC 1068 Action

On July 31, 2017, Bio-Rad and Lawrence Livermore National Security, LLC filed a complaint against us in the U.S. International Trade Commission ("ITC") pursuant to Section 337 of the Tariff Act of 1930, alleging that substantially all of our products infringe U.S. Patents Nos. 9,089,844, 9,126,160, 9,500,664, 9,636,682 and 9,649,635 (the "ITC 1068 Action"). Bio-Rad is seeking an exclusion order preventing us from importing the accused microfluidic chips, including (1) our GEM microfluidic chip, (2) our gel

bead manufacturing microfluidic chip and (3) our Next GEM microfluidic chip, into the United States and a cease and desist order preventing us from selling such imported chips. An evidentiary hearing for the ITC 1068 Action was held in May of 2018 and the presiding judge issued an Initial Determination in September 2018, finding that our GEM microfluidic chips infringe the ‘664, ‘682 and ‘635 patents but not the ‘160 patent. The judge further found that our gel bead manufacturing microfluidic chip and Next GEM microfluidic chip do not infringe any claim asserted against them.

On December 18, 2019, the ITC issued its final determination in the ITC 1068 Action (the “Final Determination”). The Final Determination affirmed the Initial Determination that our Next GEM microfluidic chips and gel bead manufacturing microfluidic chips do not infringe any of the claims asserted against them. The Final Determination also affirmed the ruling that our GEM microfluidic chips infringe the ‘664, ‘682 and ‘635 patents but not the ‘160 patent. The ITC issued (1) a limited exclusion order prohibiting the unlicensed importation of the GEM microfluidic chips into the United States and (2) a cease and desist order preventing us from selling such imported GEM microfluidic chips in the United States. The ITC expressly allowed the importation and sale of the GEM microfluidic chips for use by researchers who were using such chips as of December 18, 2019, and who have a documented need to continue receiving such chips for a specific current ongoing research project for which that need cannot be met by any alternative product. The Final Determination was subject to a 60-day presidential review period. During the presidential review period, we were permitted to continue importation and sales of the GEM microfluidic chips subject to payment of a bond of three (3) percent of the entered value of the accused microfluidic chips.

We have appealed the Final Determination to the Federal Circuit. We expect oral arguments to be held around the first quarter of 2021 and a decision around mid-2021.

In order to allow our customers to continue their important research, we have dedicated significant resources to developing the capabilities to manufacture our microfluidic chips in the United States prior to the entry of the exclusion order or cease and desist order which took effect in February 2020. Prior to the second quarter of 2019, all of our microfluidic chips were manufactured outside of the United States. Our United States manufacturing facilities achieved volume production of certain of our GEM microfluidic chips accounting for the majority of our United States consumable revenue beginning in the third quarter of 2019.

The Northern District of California Action

On July 31, 2017, Bio-Rad and Lawrence Livermore National Security, LLC also filed suit against us in the U.S. District Court for the Northern District of California, alleging that the Company’s GEM products infringe U.S. Patents Nos. 9,216,392, 9,347,059 and the five patents asserted in the ITC 1068 Action. The complaint seeks injunctive relief, unspecified monetary damages, costs and attorneys’ fees. This litigation has been stayed pending resolution of the Federal Circuit appeal of the ITC 1068 Action.

The Germany Action

On February 13, 2018, Bio-Rad filed suit against us in Germany in the Munich Region Court alleging that our Chromium instruments, GEM microfluidic chips and certain accessories infringe German Utility Model No. DE 20 2011 110 979. Bio-Rad seeks unspecified damages and an injunction prohibiting sales of these products in Germany and requiring us to recall these products sold in Germany subsequent to February 11, 2018. An initial hearing was held on November 27, 2018, and a subsequent hearing was held on May 15, 2019. The Court issued a ruling on November 20, 2019. The Court ruled that our GEM microfluidic chips, as well as certain Chromium instruments and accessories used with GEM microfluidic chips, infringed the German Utility Model. The Court issued an injunction with respect to such GEM microfluidic chips, Chromium instruments and accessories used with such systems, prohibiting among other things the sale of these products in Germany and the importation of such products into Germany. The Court found that we are obligated to compensate Bio-Rad for unspecified damages and required that these products be recalled from distribution channels in Germany. The Court further found that we have to bear the statutory costs of the legal dispute in a minimum amount of at least 61,000 Euros. The Court’s ruling did not address our Next GEM products, which were not accused in this action and which constitute substantially all of our sales in Germany. We are currently appealing the Court’s ruling.

On April 6, 2020, the Munich Higher Regional Court (the “Higher Court”) issued a ruling completely staying enforcement of the ruling of the lower Court, including the injunction, subject to the payment of a bond by the Company. The Higher Court found that the lower Court’s claim construction was not justifiable and that the facts did not provide a basis for a finding of infringement. On April 16, 2020, we paid a 2.8 million Euro bond to the Higher Court to completely stay enforcement of the ruling. The bond is refundable upon a favorable ruling on the merits by the Higher Court. We expect the Higher Court to rule on the merits around the end of 2020.

The 2018 Delaware Action

On October 25, 2018, Bio-Rad filed suit against us in the U.S. District Court for the District of Delaware, alleging that substantially all of our Chromium products, including our GEM products and Next GEM products, infringe U.S. Patent Nos. 9,562,837 and 9,896,722. Bio-Rad seeks injunctive relief, unspecified monetary damages, costs and attorneys’ fees. Discovery is in progress. A Markman hearing is scheduled in June 2020. A trial is scheduled in September 2021.

In October 2019, we filed four petitions for *inter partes* review (“IPR”) challenging the validity of both asserted patents. On April 27, 2020, the Patent Trials and Appeals Board (“PTAB”) instituted review on all four of these petitions. A final written decision is expected from the PTAB in April 2021.

The Massachusetts Action

On September 11, 2019, Bio-Rad filed suit against us in the U.S. District Court for the District of Delaware, alleging that our Next GEM products infringe certain claims of U.S. Patent No. 8,871,444. On November 5, 2019, Bio-Rad amended the complaint to additionally allege that our Next GEM products infringe certain claims of U.S. Patent Nos. 9,919,277 and 10,190,115. The ‘444 and ‘277 patents are exclusively licensed by Bio-Rad from Harvard University, which subsequently joined the suit as a party plaintiff. The ‘444 and ‘277 patents are projected to expire in 2024.

On December 18, 2019, Bio-Rad dismissed this action in the District of Delaware and refiled it in the U.S. District Court for the District of Massachusetts. The case was assigned to Judge William G. Young. On January 14, 2020, the Court consolidated this case with a separate action, *Bio-Rad Laboratories Inc. et al. v. Stilla Technologies, Inc.* (“Stilla”), in which Bio-Rad is asserting the ‘444 patent (among other patents) against Stilla’s droplet digital PCR product. On January 23, 2020, we filed a motion to dismiss the case and to transfer the ‘115 patent to the Northern District of California, where the related ‘059 patent is stayed.

On January 24, 2020, we filed antitrust counterclaims against Bio-Rad alleging violations of (a) Section 7 of the Clayton Act, (b) Section 2 of the Sherman Act and (c) California unfair competition laws, for illegally acquiring Raindance and illegally monopolizing or attempting to monopolize markets relating to droplet digital PCR products, droplet single cell products and droplet genetic analysis technology. On February 19, 2020, Bio-Rad moved to dismiss, or alternatively to stay and sever, our antitrust claims.

On February 5, 2020, we filed additional counterclaims against Bio-Rad alleging that Bio-Rad’s single cell ATAC-seq products infringe U.S. Patent No. 9,029,085 and 9,850,526 that are exclusively licensed to us from Harvard University. On February 26, 2020, Bio-Rad moved to sever and stay the patent counterclaims. On March 6, 2020, the Court denied the motion to stay and deferred the motion to sever until prior to trial.

On March 25, 2020, the Court held a hearing with respect to (a) our motion to dismiss Bio-Rad’s patent claims, (b) our motion to transfer the ‘115 patent and (c) Bio-Rad’s motion to dismiss our antitrust counterclaims. On April 30, 2020, the Court denied our motion to dismiss with respect to Bio-Rad’s patent claims and granted our motion to transfer the ‘115 patent to the Northern District of California. The Court has not yet ruled on Bio-Rad’s motion to dismiss our antitrust counterclaims.

On March 23, 2020, Stilla moved for a 90 day stay of the case due to the impact of COVID-19 on Stilla’s operations. The Court issued a 90 day stay of the Massachusetts Action, effective March 30, 2020, including a stay of all of Bio-Rad’s and our claims and counterclaims. A Markman hearing is expected in September 2020, and a trial with respect to our antitrust counterclaims is expected in July 2021. A trial date for Bio-Rad’s patent claims and our patent counterclaims has not yet been set, but may be set for shortly after the antitrust trial.

The ITC 1100 Action

On January 11, 2018, we filed a complaint against Bio-Rad at the ITC pursuant to Section 337 of the Tariff Act of 1930 alleging that Bio-Rad infringes our U.S. Patent Nos. 9,644,204, 9,689,024, 9,695,468 and 9,856,530 (the “ITC 1100 Action”). The judge issued an Initial Determination on July 12, 2019 finding that Bio-Rad’s ddSEQ products infringe the ‘024, ‘468 and ‘530 patents. The judge also found all of our asserted patents to be valid and rejected Bio-Rad’s claim of ownership in all of the asserted patents.

On February 12, 2020, the ITC issued its Final Determination affirming the judge’s findings with respect to Bio-Rad’s violation of the ‘024, ‘468 and ‘530 patents, including the judge’s findings for those patents with respect to infringement, validity and ownership. The ITC issued an exclusion order prohibiting Bio-Rad from importing into the United States infringing microfluidic devices, components thereof and products containing same, including the ddSEQ products. The ITC also issued a cease and desist order preventing Bio-Rad from selling such imported products in the United States. The ITC’s remedial orders do not identify any ddSEQ assay as exempted from their potential scope. The ITC orders do not prohibit the importation or sale of microfluidic consumables imported into the U.S. for use by researchers who are using such consumables as of February 12, 2020, and who have a documented need to continue receiving such consumables for a specific current ongoing research project for which that need cannot be met by any alternative product. The Final Determination is subject to a 60-day presidential review period. We expect Bio-Rad to appeal the Final Determination to the Court of Appeals for the Federal Circuit. We expect appeals to be completed in mid-2021.

For further discussion of the risks relating to intellectual property and our pending litigation, see the section titled “*Risk Factors—Risks related to litigation and our intellectual property*” under Item 1A below.

Item 1A. Risk Factors.

Investing in our Class A common stock involves a high degree of risk. You should carefully consider the risks described below, as well as the other information in this Quarterly Report, including our financial statements and the related notes and the section titled "Management's Discussion and Analysis of Financial Condition and Results of Operations" in this Quarterly Report, before deciding whether to invest in our Class A common stock. The occurrence of any of the events or developments described below could harm our business, financial condition, results of operations and growth prospects. In such an event, the market price of our Class A common stock could decline and you may lose all or part of your investment. Additional risks and uncertainties not presently known to us or that we currently deem immaterial also may impair our business operations and the market price of our Class A common stock. In addition, the impacts of the COVID-19 pandemic may exacerbate the risks described below as well as risks and uncertainties not presently known to us.

Risks related to our business and industry

Our business currently depends significantly on research and development spending by academic institutions and the ability of researchers to access labs and conduct research, a reduction in which could limit demand for our products and adversely affect our business and operating results.

In the near term, we expect that a large portion of our revenue will continue to be derived from sales of Chromium products, including our instruments and consumables, to academic institutions. As a result, in the near term, the demand for our products will depend upon the ability of customers to access labs and conduct research in light of the COVID-19 pandemic, the research and development budgets of these customers and the ability of such customers to receive funding for research, all of which are impacted by factors beyond our control, 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;
- 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, 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;
- macroeconomic conditions and the political climate;
- scientists' and customers' opinions of the utility of new products or services;
- citation of new products or services in published research;
- changes in the regulatory environment;
- differences in budgetary cycles;
- competitor product offerings or pricing;
- market-driven pressures to consolidate operations and reduce costs; and
- market acceptance of relatively new technologies, such as ours.

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 in recent years, but the NIH also experiences occasional year-over-year decreases in appropriations, including as recently as 2013. In addition, funding for life sciences research has increased more slowly during the past several years compared to previous years and has actually declined in some countries. There is no guarantee that NIH appropriations will not decrease in the future, and a decrease may be more likely under the current administration, whose annual budget proposals have repeatedly decreased NIH appropriations. 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, including impacts stemming from the COVID-19 pandemic, could materially and adversely affect our business, operating results and financial condition.

Additionally, the research of our customers often requires long uninterrupted studies performed on a consistent basis over time. Reductions in capacity, lab shutdowns or interruptions in the ability of our customers to complete research projects, including reductions in capacity, shutdowns or interruptions stemming from the COVID-19 pandemic, could be particularly damaging to these studies, our customers and our business.

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

We have incurred significant losses since we were formed in 2012 and expect to incur losses in the future. We incurred net losses of $21.1 million and $3.6 million for the three months ended March 31, 2020 and 2019, respectively. As of March 31, 2020, we had an accumulated deficit of $283.5 million. We expect that our losses will continue in the near term as we continue to invest significant additional funds toward ongoing research and development and toward the timely commercialization of both new products and improved versions of existing products. We also expect that our operating expenses will increase as a result of being a public company and will continue to increase as we grow our business. To date, we have financed our operations principally from the sale of convertible preferred stock, the sale of Class A common stock in our IPO, revenue from sales of our products and the incurrence of indebtedness. There can be no assurance that our revenue and gross profit will increase sufficiently such that our net losses decline, or we attain profitability, in the future. Further, our limited operating history and rapid revenue growth over the last several years make it difficult to effectively plan for and model future growth and operating expenses. Our ability to achieve or sustain profitability is based on numerous factors, many of which are beyond our control, including general economic, industry and market conditions, customer closures and other impacts stemming from the COVID-19 pandemic, the impact of market acceptance of our products, future product development, our market penetration and margins and current and future litigation. We may never be able to generate sufficient revenue to achieve or sustain profitability and our recent and historical growth should not be considered indicative of our future performance. Our failure to achieve or maintain profitability could negatively impact the value of our Class A common stock.

In particular, we are subject to significant risks of losses related to current litigation matters. See "*—Risks related to litigation and our intellectual property*."

Our markets are highly competitive. If we fail to compete effectively, our business and operating results will suffer.

We face significant competition. We currently compete with both established and early-stage companies that design, manufacture and market instruments, consumables and software for, among other applications, genomics, single cell analysis, spatial analysis and immunology. We believe our competitors include Becton, Dickinson and Company, Bio-Rad and Nanostring Technologies, Inc., each of which has products that compete to varying degrees with some but not all of our product solutions, as well as a number of other emerging and established companies.

Some of our current competitors are large publicly traded companies, or are divisions of large publicly traded companies, and may enjoy a number of competitive advantages over us, including:

- greater name and brand recognition;
- greater financial and human resources;
- broader product lines;
- larger sales forces and more established distributor networks;
- substantial intellectual property portfolios;
- larger and more established customer bases and relationships; and
- better established, larger scale and lower cost manufacturing capabilities.

We also face competition from researchers developing their own solutions. The area in which we compete involves rapid innovation and some of our customers have in the past, and more may in the future, elect to create their own platform or assays rather than rely on a third-party supplier such as ourselves. This is particularly true for the largest research centers and labs who are continually testing and trying new technologies, whether from a third-party vendor or developed internally. We also compete for the resources our customers allocate for purchasing a wide range of products used to analyze biological systems, some of which are additive to or complementary with our own but not directly competitive.

We cannot assure investors that our products will compete favorably or that we will be successful in the face of increasing competition from products and technologies introduced by our existing competitors, companies entering our markets 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 produce competitive products with greater capabilities or at lower costs than ours or that are able to run comparable experiments at a lower total experiment cost. Any failure to compete effectively could materially and adversely affect our business, financial condition and operating results.

Our business depends significantly on the success of our Next GEM microfluidic chip.

Since our inception through March 31, 2020, a substantial number of our Chromium instruments utilized our GEM microfluidic chips and associated consumables. In November 2018, a jury concluded that our Chromium instruments operating these chips and associated consumables infringe certain of Bio-Rad's patents. We have dedicated significant resources to designing and manufacturing our new Next GEM microfluidic chip, which uses a microfluidic architecture with fundamentally different physics from our GEM microfluidic chip. We introduced our Next GEM microfluidic chips for our Single Cell Gene Expression, Single Cell Immune Profiling and Single Cell ATAC solutions in the second quarter of 2019. We plan to gradually phase out our GEM microfluidic chips and anticipate that our Chromium products utilizing our Next GEM microfluidic chips will become an increasing percentage of our sales and will constitute substantially all of our Chromium consumables sales by the end of 2020. In addition, we have not yet developed Next GEM microfluidic chips for our Single Cell CNV solution. Although the Federal Circuit has stayed the injunction with respect to our Single Cell CNV solution during the pendency of the appeal, we have not yet released a new version of our instrument that would allow our customers to use this solution using our GEM microfluidic chip during the pendency of the appeal. Furthermore, it is possible that the injunction could be reinstated with respect to our Single Cell CNV solution using our GEM microfluidic chips after the appeal if the Federal Circuit does not rule in our favor. Until we are able to completely transition to our Next GEM microfluidic chip design, our margins will be negatively impacted by any royalty obligations that result from ongoing litigation matters.

Although our Next GEM microfluidic chips were designed to replace our GEM microfluidic chips, we cannot assure you that we will be able to make our Next GEM microfluidic chip work with all of our solutions, that our Next GEM microfluidic chip will allow our customers to retain the level of performance or quality they have come to expect using our GEM microfluidic chip, that our Next GEM microfluidic chip will replace the sales of our GEM microfluidic chip or that we will be able to manufacture our Next GEM microfluidic chip in sufficient volumes and in sufficient quality in a timely fashion. While we believe that our Chromium solutions, when used with our Next GEM microfluidic chip, do not infringe the asserted Bio-Rad patents, we cannot assure you that our Next GEM microfluidic chip would not be found to infringe the asserted Bio-Rad patents or other patents, which could prevent us from making, selling and importing our Next GEM microfluidic chips or substantially all of our products. Since August 28, 2019, all Chromium instruments that we sell and have sold operate exclusively with our Next GEM solutions. We believe that these solutions are very important to our customers' research but the delay caused by the injunction may slow customer adoption of our products or cause customers to investigate the availability of competing products or technologies.

We have incurred and expect to continue to incur additional expenses in the near term related to the introduction of, and transition to, our Next GEM microfluidic chip. Our failure to effectively manage product transitions or accurately forecast customer demand with respect to both instruments and consumables may lead to an increased risk of insufficient, excess or obsolete inventory and resulting charges. We expect that as we transition to our Next GEM microfluidic chips we may need to write down the value of our GEM microfluidic chips and associated consumables we currently hold in inventory. As we transition to our Next GEM microfluidic chips, we cannot guarantee that our customers will quickly switch to using our Next GEM microfluidic chips in their research. Customers may delay transitioning to our Next GEM microfluidic chips for a variety of reasons, including if they have experiments underway for which they do not want to introduce additional variables. More significantly, customers may decline to purchase our products altogether if they do not believe that our Next GEM microfluidic chips can produce results that are reliable, consistent and comparable to our GEM microfluidic chips.

For additional information relating to this litigation, see the section titled *"—Risks related to litigation and our intellectual property—We are involved in significant litigation which has consumed significant resources and management time and adverse resolution of these lawsuits could require us to pay significant damages, and prevent us from selling our products, which would severely adversely impact our business, financial condition or results of operations."*

We are significantly dependent upon revenue generated from the sale of our Chromium solutions, and in particular our Single Cell Gene Expression solutions.

We currently generate substantially all of our revenue from the sale of our Chromium instruments, which we refer to as "instruments," and our proprietary microfluidic chips, slides, reagents and other consumables for both our Visium and Chromium solutions, which we refer to as "consumables." In particular, we are dependent upon revenue generated from sales of our Single Cell Gene Expression consumables. There can be no assurance that we will be able to design future products, particularly non-Chromium product lines, that will meet the expectations of our customers or that our future products will become commercially viable. As technologies change in the future for research equipment in general and in genomics solutions specifically, we will be expected to upgrade or adapt our products in order to keep up with the latest technology. To date we have limited experience simultaneously designing, testing, manufacturing and selling non-Chromium products and there can be no assurance we will be able to do so. Our sales expectations are based in part on the assumption that our Chromium Connect instrument will increase workflows for our future customers and their associated purchases of our consumables. If sales of our Chromium Connect instruments fail to materialize so will the related

consumable sales and associated revenue. Our sales expectations are also based in part on the continued success of our Single Cell Gene Expression solutions. If our Single Cell Immune Profiling consumables, which were introduced in 2017, and Single Cell ATAC consumables, which were introduced in 2018, or our Visium Spatial Gene Expression product, which was introduced in 2019, fail to achieve sufficient market acceptance or sales of our Single Cell Gene Expression consumables decrease, our consumables revenue could be materially and adversely impacted.

Our failure to effectively manage product transitions or accurately forecast customer demand could result in excess or obsolete inventory and resulting charges.

Because the market for our products is characterized by rapid technological advances, we frequently introduce new products with improved ease-of-use, improved performance or additional features and functionality. We pre-announce products and services, in some cases before such products and services have been fully developed or tested, and risk failing to meet expectations when such products and services become available. The risks associated with the introduction of new products include the difficulties of predicting customer demand and effectively managing inventory levels to ensure adequate supply of the new product and avoiding excess supply of the legacy product.

We may strategically enter into non-cancelable commitments with vendors to purchase materials for our products in advance of demand to take advantage of favorable pricing, address concerns about the availability of future supplies or build safety stock to help ensure customer shipments are not delayed should we experience higher than anticipated demand for materials with long lead times. During periods of decreased demand, which have occurred and which we expect to continue to occur as a result of the COVID-19 pandemic, these non-cancelable commitments could prevent our related costs from decreasing in proportion to decreases in demand.

Our future success is dependent upon our ability to increase penetration in our existing markets and to maintain and increase the effectiveness of our commercial organization.

Our customer base includes academic, government, biopharmaceutical, biotechnology and other institutions. Our success will depend upon our ability to increase our market penetration among these customers and to expand our market by developing and marketing new products and new applications for existing products. We recently introduced our Visium product line for spatial analysis and our future success will partially depend on our ability to commercialize this product line. As we continue to scale our business, we may find that certain of our products, certain customers or certain markets, including the biopharmaceutical market, may require a dedicated sales force or sales personnel with different experience than those we currently employ in our commercial organization. Identifying, recruiting and training additional qualified personnel would require significant time, expense and attention.

We cannot assure investors that we will be able to further penetrate our existing market or that the market will be able to sustain our current and future product offerings. Any failure to increase penetration in our existing markets would adversely affect our ability to improve our operating results.

Additionally, potential impacts of the COVID-19 pandemic on the health and safety of our employees and partners could decrease the effectiveness of our commercial organization and adversely affect our business and operating results. Additionally, our commercial organization’s ability to participate in on-site or other in-person sales activities, including participation in trade shows and other in-person events, may be restricted or eliminated due to the impacts of the COVID-19 pandemic, including due to governmental or other restrictions preventing or restricting members of our commercial organization from on-site or other in-person sales and marketing activities. The effectiveness of our commercial organization may be decreased and our business and operating results may be adversely affected as a result.

We may not be able to develop new products, enhance the capabilities of our existing products to keep pace with rapidly changing technology and customer requirements or successfully manage the transition to new product offerings, any of which could have a material adverse effect on our business and operating results.

Our success depends on our ability to develop new products and applications for our technology in existing and new markets, while improving the performance and cost-effectiveness of our existing products, in each case in ways that address current and anticipated customer requirements. Such success is dependent upon several factors, including functionality, competitive pricing and integration with existing and emerging technologies. New technologies, techniques or products could emerge that might offer better combinations of price and performance or better address customer requirements as compared to our current or future products. Existing markets for our products, including the genomics, single cell analysis, spatial analysis and other relevant markets, are characterized by rapid technological change and innovation. Competitors may be able to respond more quickly and effectively than we can to new or changing opportunities, technologies, standards or customer requirements. Due to the significant lead time involved in bringing a new product to market, we are required to make a number of assumptions and estimates regarding the commercial feasibility of a new product, including assumptions and estimates regarding the biological analytes that researchers will want to measure, the appropriate method of measuring such analytes, how researchers intend to use the resulting data and the scope and type of data that will be most useful to researchers. As a result, it is possible that we may introduce a new product that uses technologies or methods of analysis that have been displaced by the time of launch, addresses a market that no longer exists or is smaller than previously thought, targets biological analytes or produces data that provides less utility to researchers than previously thought or otherwise is not competitive at

the time of launch. We anticipate that we will face increased competition in the future as existing companies and competitors develop new or improved products and as new companies enter the market with new technologies. Our ability to mitigate downward pressure on our selling prices will be dependent upon our ability to maintain or increase the value we offer to researchers. The expenses or losses associated with unsuccessful product development or launch activities, or a lack of market acceptance of our new products, could adversely affect our business, financial condition or results of operations.

Because our solutions are used with other products, such as sequencers, to conduct an experiment, we also expect to face competition from these complementary products, either directly or indirectly, as researchers and labs look to reduce the total cost of any given experiment. For example, if a sequencer manufacturer was successful in vertically integrating their product to provide functionality equivalent to our instruments, they would likely be able to deliver a solution that is capable of running comparable experiments with a total experiment cost that is significantly less than the cost of running such experiments using our products together with third-party sequencers. Conversely, if genome sequencing falls out of favor as a preferred approach for genomic research, whether through the development of alternative solutions or real or perceived problems with sequencing itself, the utility of our products could be significantly impacted. It is critical to our success that we anticipate changes such as these in technology and customer requirements and successfully introduce new, enhanced and competitive technologies to meet our customers' and prospective customers' needs on a timely and cost-effective basis. If we do not successfully innovate and introduce new technology into our product lines, our business and operating results will be adversely impacted.

Our ability to attract new customers and increase revenue from existing customers depends in large part on our ability to enhance and improve our existing solutions and to introduce compelling new solutions. The success of any enhancement to our solutions depends on several factors, including timely completion and delivery, competitive pricing, adequate quality testing, integration with existing technologies and overall market acceptance. Any new solution that we develop may not be introduced in a timely or cost-effective manner, may contain errors, vulnerabilities or bugs, or may not achieve the market acceptance necessary to generate significant revenue. If we are unable to successfully develop new solutions, enhance our existing solutions to meet customer requirements, or otherwise gain market acceptance, our business, results of operations and financial condition would be harmed.

Our ability to attract new customers and increase revenue from existing customers also depends on our ability to deliver any enhanced or new solutions to our customers in a format where they can be easily and consistently deployed by most or all users without significant customer service or training. If our customers believe that deploying our enhanced or new solutions would be overly time-consuming, confusing or technically challenging, or require significant training or retraining, then our ability to grow our business would be substantially harmed. We need to create and deliver a repeatable, user-friendly, prescriptive approach to deployment that allows users of all kinds to effectively and easily deploy our solutions, and if we fail to do so, our business and results of operations would be harmed.

The typical development cycle of new life sciences products can be lengthy and complicated and may require new scientific discoveries or advancements and complex technology and engineering. Such developments may involve external suppliers and service providers, making the management of development projects complex and subject to risks and uncertainties regarding timing, timely delivery of required components or services and satisfactory technical performance of such components or assembled products. We expect that impacts stemming from the COVID-19 pandemic will delay the development of certain of our new life science products as well as new versions of existing products. If we do not achieve the required technical specifications or successfully manage new product development processes, or if development work is not performed according to schedule, including because of delays in our research and development programs stemming from the COVID-19 pandemic, then such new technologies or products may be adversely impacted and our business and operating results may be harmed.

If our existing and new products fail to achieve and sustain sufficient scientific acceptance, we will not generate expected revenue and our prospects may be harmed.

The life sciences scientific community is comprised of a small number of early adopters and key opinion leaders who significantly influence the rest of the community. 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 is a good barometer for the general acceptance of our products as best practices. Ensuring that early adopters and key opinion leaders 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 key opinion leaders is vital to growing our market. The number of times our products were mentioned in peer-reviewed publications has increased significantly in recent years. During this time, our revenue has also increased significantly. We cannot assure investors that our products will continue to be mentioned in peer-reviewed articles with any frequency or that any new products that we introduce in the future will be mentioned in peer-reviewed articles. If too few researchers describe the use of our products, too many researchers shift to a competing product and publish research outlining their use of that product or too many researchers negatively describe the use or usability of our products in publications, it may drive existing and potential customers away from our products, which could harm our operating results. Additionally, the ability of researchers to conduct research or publish in peer-reviewed journal publications has been and will continue to be impacted by the COVID-19 pandemic. Further, even though many of our customers are using our instruments

and consumables to research and understand COVID-19 and such efforts may result in peer-reviewed journal publications which describe the use of our products, the COVID-19 pandemic may result in life sciences journals prioritizing research related to COVID-19 in lieu of research relating to other fields, such as oncology, where our instruments and consumables have regularly been mentioned. Any decrease in the frequency at which our instruments and consumables are mentioned in peer reviewed journals, even if only temporarily due to COVID-19, may negatively impact our prospects.

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

We have experienced rapid growth in recent periods. This growth and our anticipated growth will place significant strains on our management, operational and manufacturing systems and processes, financial systems and internal controls and other aspects of our business. For example, we consummated two acquisitions in 2018 and intend to continue to make investments that meet management's criteria to expand or add key technologies that we believe will facilitate the commercialization of new products in the future. In addition, we intend to launch additional new products and new versions of existing products in the near future. Further development and commercialization of our current and future products are key elements of our growth strategy. Developing and launching new products and innovating and improving our existing products have required us to hire and retain additional scientific, sales and marketing, software, manufacturing, distribution and quality assurance personnel. As a result, we have experienced rapid headcount growth from 110 employees as of December 31, 2015 to 670 employees as of March 31, 2020. As we have grown, our employees have become more geographically dispersed. We currently serve thousands of researchers in many countries and plan to continue to expand to new international jurisdictions as part of our growth strategy which will lead to increased dispersion of our employees. Moreover, we expect that we will need to hire additional accounting, finance and other personnel in connection with our efforts to comply with the requirements of being a public company. As a public company, our management and other personnel must devote a substantial amount of time towards maintaining compliance with these requirements. We may face challenges integrating, developing and motivating our rapidly growing and increasingly dispersed employee base, including as a result of many of our employees working from home due to the COVID-19 pandemic. In addition, certain members of our management have not previously worked together for an extended period of time, do not have experience managing a public company or do not have experience managing a global business, which may affect how they manage our growth. 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. As our organization continues to grow, and we are required to implement more complex organizational management structures, we 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. If we do not successfully manage our anticipated growth, our business, results of operations and growth prospects will be harmed.

Our limited operating history and rapid revenue growth make it difficult to evaluate our future prospects and the risks and challenges we may encounter.

We launched our first product in mid-2015 and have experienced significant revenue growth in recent periods. In addition, we operate in highly competitive markets characterized by rapid technological advances and our business has, and we expect it to continue, to evolve over time to remain competitive. Our limited operating history, evolving business and rapid growth make it difficult to evaluate our future prospects and the risks and challenges we may encounter and may increase the risk that we will not continue to grow at or near historical rates.

If we fail to address the risks 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 growing companies with limited operating histories in rapidly changing industries. 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 successfully, our results of operations could differ materially from our expectations and our business, financial condition and results of operations could be adversely affected.

Our operating results have in the past fluctuated significantly and may continue to 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.

Our quarterly and annual operating results may fluctuate significantly, 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:

- reductions in capacity or shutdowns of laboratories and other institutions as well as other impacts stemming from the COVID-19 pandemic, including 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 and consumables;
- disruptions in customers' on-going experiments or interruptions in the ability of our customers to complete research projects as a result of the COVID-19 pandemic;

- our dependence on single source and sole source suppliers for some of the components and materials used in our products;
- production problems which could impact our ability to manufacture and ship our instruments, consumables and related components;
- the level of demand for our products, which may vary significantly and result in excess capacity expenses, and our ability to increase penetration in our existing markets and expand into new markets;
- the outcomes of and related rulings in the litigation and administrative proceedings in which we are currently or may in the future become involved;
- our ability to successfully manufacture and transition our existing customers to our Next GEM microfluidic chips;
- the timing and cost of, and level of investment in, research and development and commercialization activities relating to our products, which may change from time to time;
- the volume and mix of our instrument and consumable sales or changes in the manufacturing or sales costs related to our instruments and consumables;
- the success of our recently introduced products, such as our Visium platform and Chromium Connect, and the introduction of other new products or product enhancements by us or others in our industry;
- the timing and amount of expenditures that we may incur to acquire, develop or commercialize 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, budget cycles or seasonal spending patterns of our customers;
- future accounting pronouncements or changes in our accounting policies;
- the outcome of any future litigation or governmental investigations involving us, our industry or both;
- difficulties encountered by our commercial carriers in delivering our instruments or consumables, whether as a result of external factors such as weather or internal issues such as labor disputes;
- general market conditions and other factors, including factors unrelated to our operating performance or the operating performance of our competitors;
- higher than anticipated warranty costs;
- customers accelerating, canceling, reducing or delaying orders as a result of developments related to our litigation or to our transition to Next GEM microfluidic chips;
- the impacts of infectious disease, epidemics, pandemics and outbreaks, including the effects of the COVID-19 pandemic, on our business operations and on the business operations of our customers, manufacturers and suppliers; 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 our revenue or 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, the price of our Class A common stock could decline substantially. Such a stock price decline could occur even when we have met or exceeded any previously publicly stated guidance we may provide. On April 9, 2020, due to uncertainty regarding the scope, duration and impact of the COVID-19 pandemic, we withdrew the annual revenue guidance for 2020 that we previously issued on February 18, 2020. Our failure to reinstate or provide updated guidance in the future may make it more difficult for financial analysts and other investors to value our Class A common stock and may result in increased volatility in the price of our common stock.

The sizes of the markets for our solutions may be smaller than estimated and new market opportunities may not develop as quickly as we expect, or at all, limiting our ability to successfully sell our solutions.

The market for genomics products is new and evolving, making it difficult to predict with any accuracy the sizes of the markets for our current and future solutions. Our estimates of the annual total addressable market for our current and future solutions are based on a number of internal and third-party estimates and assumptions. In particular, our estimates are based on our expectations that: (a) researchers in the market for certain life sciences research tools and technologies will view our solutions as competitive alternatives to, or better options than, such existing tools and technologies; (b) researchers who already own such existing tools and

technologies will recognize the ability of our solutions to complement, enhance and enable new applications of their current tools and technologies and find the value proposition offered by our solutions convincing enough to purchase our solutions in addition to the tools and technologies they already own; and (c) the trends we have seen among our customers with respect to placements of our instruments are representative of the broader market. Underlying each of these expectations are a number of estimates and assumptions, including the assumption that government or other sources of funding will continue to be available to life sciences researchers at times and in amounts necessary to allow them to purchase our solutions.

In addition, our growth strategy involves launching new solutions and expanding sales of existing solutions into new markets in which we have limited or no experience, such as the biopharmaceutical market. Sales of new or existing solutions into new market opportunities may take several years to develop and mature and we cannot be certain that these market opportunities will develop as we expect. For example, new life sciences technology is often not adopted by the relevant market until a sufficient amount of research conducted using such technology has been published in peer-reviewed publications. Because there can be a considerable delay between the launch of a new life sciences product and publication of research using such product, new life sciences products do not generally contribute a meaningful amount of revenue in the year they are introduced. In certain markets, such as the biopharmaceutical market, new life sciences technology, even if sufficiently covered in peer-reviewed publications, may not be adopted until the consistency and accuracy of such technology, method or device has been proven. As a result, the sizes of the annual total addressable market for new markets and new products are even more difficult to predict.

While we believe our assumptions and the data underlying our estimates of the total annual addressable market for our solutions 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 solutions may be incorrect.

The future growth of the market for our current and future solutions depends on many factors beyond our control, including recognition and acceptance of our solutions by the scientific community as best practice and the growth, prevalence and costs of competing products and solutions. Such recognition and acceptance may not occur in the near term, or at all. If the markets for our current and future solutions are smaller than estimated or do not develop as we expect, our growth may be limited and our business, financial condition and operational results may be adversely affected. Additionally, impacts stemming from the COVID-19 pandemic have and may continue to limit demand for our solutions for the foreseeable future.

Our management uses certain key business metrics to evaluate our business, measure our performance, identify trends affecting our business, formulate financial projections and make strategic decisions and such metrics may not accurately reflect all of the aspects of our business needed to make such evaluations and decisions, in particular as our business continues to grow.

In addition to our condensed consolidated financial results, our management regularly reviews a number of operating and financial metrics, including our instrument installed base and consumable pull-through per instrument, to evaluate our business, measure our performance, identify trends affecting our business, formulate financial projections and make strategic decisions. We define the instrument installed base as the cumulative number of instruments sold since inception and define consumable pull-through per instrument as the total consumables revenue in the relevant period divided by the average instrument installed base during that period. We believe that these metrics are representative of our current business; however, these metrics may not accurately reflect all aspects of our business and we anticipate that these metrics may change or may be substituted for additional or different metrics as our business grows and as we introduce new products. For example, we expect that our expansion into new markets and adoption by new customers who may not have the same financial resources to devote to consumable purchases as our existing customer base could adversely impact our pull-through figures. These metrics also do not accurately reflect information relating to customers who purchase consumables but do not own an instrument, whom we refer to as “halo users.” Halo users and the introduction of consumables that may not use instruments, such as our Visium solution, or instruments that are expected to use a greater amount of consumables, such as our Chromium Connect instrument, could reduce the utility of our consumable pull-through per instrument metric and make it difficult to compare such figures over time. Moreover, we expect some of our halo users to purchase instruments of their own which would decrease the consumables sold per instrument and therefore decrease our annual consumable pull-through per instrument. Though we expect the introduction of enhanced features and additional solutions on our Chromium instrument to increase consumable pull-through per instrument and to offset this decline, there are no assurances we will be successful in doing so. If our management fails to review other relevant information or change or substitute the key business metrics they review as our business grows and we introduce new products, their ability to accurately formulate financial projections and make strategic decisions may be compromised and our business, financial results and future growth prospects may be adversely impacted.

The COVID-19 pandemic may impact historical trends and the comparability of certain of the key business metrics over time. For example, the COVID-19 pandemic may (i) cause halo users to delay purchases of their own instruments, which could positively impact our consumables pull-through per instrument metrics, (ii) lead to a general reduction in consumables spending, which could negatively impact our consumables pull-through per instrument metrics or (iii) cause a general decrease in the rate of growth of our instrument installed base, which could positively impact our consumables pull-through per instrument metrics.

We are dependent on single source and sole source suppliers for some of the components and materials used in our products and the loss of any of these suppliers could harm our business. The ability of our suppliers to meet our needs and the needs of our customers could be reduced or eliminated by the impacts of the COVID-19 pandemic.

We do not have long-term contracts with our suppliers for the significant majority of the services, materials and components we use for the manufacture and delivery of our products. In certain cases, we also rely on single suppliers for all of our requirements for some of our materials or components. In most cases we do not have long term contracts with these suppliers, and even in the cases where we do the contracts include significant qualifications that would make it extremely difficult for us to force the supplier to provide us with their services, materials or components should they choose not to do so. We are therefore subject to the risk that these third-party suppliers will not be able or willing to continue to provide us with materials and 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 materials and components include disruption at or affecting our suppliers' facilities, such as work stoppages or natural disasters, infectious disease, epidemics or pandemics including COVID-19, outbreaks, adverse weather or other conditions that affect their supply, the financial condition of our suppliers, deterioration in our relationships with these suppliers or the decision by such suppliers to introduce products that compete directly with our solutions. In addition, we cannot be sure that we will be able to obtain these materials and components on satisfactory terms. Any increase in material and component costs or decrease in availability could reduce our sales and harm our gross margins. In addition, any loss of a material supplier may permanently cause a change in one or more of our products that may not be accepted by our customers or cause us to eliminate that product altogether.

For example, we depend on a limited number of suppliers for enzymes and amplification mixes used in our consumables. In some cases, these manufacturers are the sole source of certain types of enzymes and reagents. We do not have long-term contracts with any of these sole source suppliers. Lead times for some of these components can be several months or more and could be exacerbated due to the COVID-19 pandemic. In the event that demand increases, a manufacturing 'lot' does not meet our specifications or we fail to forecast and place purchase orders sufficiently in advance, this could result in a material shortage. Some of the components and formulations are proprietary to our vendors, thereby making second sourcing and development of a replacement difficult. Furthermore, such vendors may have intellectual property rights that could prevent us from sourcing such reagents from other vendors. Some vendors could choose to use their enzymes, amplification mixes or other components to create products that directly compete with our consumables and end our current supplier-customer relationship. If enzymes and reagents become unavailable from our current suppliers and we are unable to find acceptable substitutes for these suppliers, we may be required to produce them internally or change our product designs.

We have not qualified secondary sources for all materials or 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 materials or 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 materials that are scarce or components for which there are a limited number of suppliers.

The impacts of the COVID-19 pandemic, including interruptions in or failures of the global supply chain and transportation infrastructure system, could cause certain of our suppliers to experience shortages in materials and components that we depend on such suppliers to provide or could reduce the ability of our suppliers to meet our needs or the needs of our customers. The impacts of the COVID-19 pandemic could cause certain of our suppliers to be unable to operate temporarily or go out of business permanently. The realization of any of these risks could prevent us from producing, selling or delivering our products, reduce our sales and harm our gross margins or permanently cause a change in one or more of our products that may not be accepted by our customers or cause us to eliminate that product altogether.

If our facilities or our third-party manufacturers' facilities become unavailable or inoperable, our research and development programs could be adversely impacted and manufacturing of our instruments and consumables could be interrupted.

The manufacturing process for our Chromium Controller takes place at our third-party manufacturer's facilities in Singapore and the manufacturing process for our Chromium Connect takes place at our third-party manufacturer's facilities in Nevada. The majority of our consumables are manufactured at our facilities in Pleasanton, California using proprietary equipment. Certain raw materials, such as oligonucleotides and enzymes, are custom manufactured by outside partners. We periodically review the manufacturing capacity of our consumables and we expect to manufacture an increasing amount of consumables in-house. Our Pleasanton facilities also house the majority of our research and development and quality assurance teams. Our Chromium Connect is manufactured by our partner at their facility. The facilities and the equipment we and our third-party manufacturers use to manufacture our instruments and consumables and that we use in our research and development programs would be costly to replace and could require substantial lead times to repair or replace.

Our facilities in Pleasanton are vulnerable to natural disasters and catastrophic events. For example, our Pleasanton facilities are located near earthquake fault zones and are vulnerable to damage from earthquakes as well as other types of disasters, including fires, floods, infectious disease, epidemics or pandemics including COVID-19, outbreaks, power loss, communications failures and similar events. If any disaster or catastrophic event were to occur, our ability to operate our business would be seriously, or potentially completely, impaired. If our facilities or any of our third-party manufacturers' facilities become unavailable for any reason, including due to the impacts of the COVID-19 pandemic, we cannot provide assurances that we will be able to secure alternative manufacturing facilities with the necessary capabilities and equipment on acceptable terms, if at all. Further, while we are an essential business that can continue operations under current governmental shelter-in-place measures meant to combat the COVID-19 pandemic, there is no guarantee that we will be able to continue operations at our Pleasanton facilities or other facilities while shelter-in-place or other COVID-19-related measures remain in place. We may encounter particular difficulties in replacing or counterbalancing any unavailability of our Pleasanton facilities given the specialized equipment housed within it. The inability to manufacture our instruments and/or consumables, combined with our limited inventory of manufactured instruments and consumables, may result in the loss of customers or harm our reputation, and we may be unable to reestablish relationships with those customers in the future. Because certain of our consumables and the raw materials we use to manufacture consumables at our Pleasanton facilities 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 consumables and raw materials and we may not be able to replace them without disruption to our customers or at all.

A substantial percentage of our direct sales revenue comes from sales to academic institutions, whose research often requires long uninterrupted studies performed on a consistent basis over time; thus interruptions in our ability to supply consumables could be particularly damaging to these studies and our reputation. In addition, the budgetary planning and approval process for academic research programs can be lengthy and begin well in advance of the planned purchase of our instrument and/or consumables. If our products become unavailable during the planning process, researchers may use alternative products.

If our research and development programs were disrupted by a disaster or catastrophe, including the COVID-19 pandemic, the launch of new products and the timing of improvements to existing 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 manufacturers' 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.

Our instruments, consumables and related components are specialized, complex and difficult to manufacture. We could experience production problems that impact our ability to manufacture and ship our instruments, consumables and related components, which would adversely affect our business, financial condition and results of operations.

The manufacturing processes we and our third-party manufacturers use to produce our instruments, consumables and related components are specialized and highly complex and require high-quality components. We may have quality variations, supply issues, backorders or production difficulties of needed components and may require components that are difficult to obtain or manufacture at the necessary quantities and necessary quality, in a timely manner or in accordance with regulatory requirements.

Such issues, issues with our manufacturing processes or the manufacturing processes of our third-party manufacturers, shipping issues, inaccurate demand forecasts or other production issues (including issues stemming from the COVID-19 pandemic) could result in our inability to supply our products to our customers, backorders, insufficient inventory, excess inventory, shipping delays, product deficiencies or other operational failures. For example, the COVID-19 pandemic has disrupted air travel in the United States and globally. Such disruptions could reduce or eliminate our ability to receive components or supply our customers. If we cannot supply our products to our customers in a timely manner, our customers may delay or cancel their orders. Furthermore, even if we have inventory, if we do not have adequate inventory of products in the geographic regions in which they are ordered, we may not be able to deliver products to our customers in a timely manner and customers may delay or cancel their orders. Many other factors could

cause production or shipping delays or interruptions, including difficulties in transporting materials, raw material shortages, raw material failures, equipment malfunctions, facility contamination, labor problems, natural disasters, infectious disease, epidemics or pandemics including COVID-19, outbreaks, disruption in utility services, terrorist activities or circumstances beyond our control. Additionally, we and our third-party manufacturers may encounter problems in hiring and retaining the experienced specialized personnel needed to develop and operate our manufacturing processes or the manufacturing processes of our third-party manufacturers, which could result in backorders, delays in our production or difficulties in maintaining compliance with applicable regulatory requirements.

These issues, or any other problems with the production or timely manufacture and shipment of our instruments, consumables and related components, could materially harm our business, financial condition and results of operations.

We may be unable to consistently manufacture our instruments and consumables to the necessary specifications or in quantities necessary to meet demand at an acceptable cost or at an acceptable performance level.

Our products are integrated solutions with many different components that work together. As such, a quality defect in a single component can compromise the performance of the entire solution. Certain of our consumables are manufactured at our Pleasanton, California facilities using complex processes, sophisticated equipment and strict adherence to specifications and quality systems procedures. In many cases, the consumables we manufacture are bundled with products or components that we source from third parties and assemble, package and perform quality assurance testing at our Pleasanton facilities. Our Chromium Controllers are manufactured by our third-party manufacturer at their facilities. In order to successfully generate revenue from our products, we need to supply our customers with products that meet their expectations for quality and functionality in accordance with established specifications. In order to ensure we are able to meet these expectations, our Pleasanton, California manufacturing facilities, as well as the facilities of our third-party manufacturers, have obtained International Organization for Standardization (“ISO”) quality management certifications and employ other quality control measures. While customer complaints regarding defects in our products and consumables have historically been low, our customers have experienced quality control and manufacturing defects in the past. For example, a manufacturing defect in certain of our Chromium Controllers resulted in an unacceptable level of LCD screen failures and we launched a free replacement program in 2018 to allow customers to replace affected LCD screens as a result. As we continue to grow and introduce new products, 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. There is no assurance that we or our third-party manufacturers will be able to continue to manufacture our products so that they consistently achieve the product specifications and quality that our customers expect. Certain of our consumables are subjected to a 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 warrantee replacements, which would increase our costs, and depending upon current inventory levels and the availability and lead time for additional inventory, could lead to availability issues. Any future design issues, unforeseen manufacturing problems, such as contamination of our or their facilities, 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, financial condition and operating results and could result in us or our third-party manufacturers losing ISO quality management certifications. If we or our third-party manufacturers fail to maintain ISO quality management certifications, our customers might choose not to purchase products from us. Furthermore, we or our third-party manufacturers may not be able to increase manufacturing to meet anticipated demand or may experience downtime.

In addition, as we increase manufacturing capacity, we will also need to make corresponding improvements to other operational functions, such as our customer service and billing systems, compliance programs and our internal quality assurance programs. We will also need additional equipment, manufacturing and warehouse space and trained personnel to process higher volumes of products. We cannot assure you that any increases in scale, related improvements and quality assurance will be successfully implemented or that equipment, manufacturing and warehouse space and appropriate personnel will be available. 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. Our ability to increase our manufacturing capacity at our Pleasanton, California location is complicated by the use of our proprietary equipment that is not readily available from third-party manufacturers.

The risk of manufacturing defects or quality control issues is generally higher for new products, whether produced by us or a third-party manufacturer, products that are transitioned from one manufacturer to another, particularly if manufacturing is transitioned or initiated with a manufacturer we have not worked with in the past, and products that are transferred from one manufacturing facility to another. Our current product roadmap calls for the introduction of new instruments and consumables, which may require that we utilize manufacturers with which we have little or no prior manufacturing experience and the risk of manufacturing defects or quality control issues could increase as a result. Similarly, we also expect to expand our manufacturing facilities in Pleasanton, California during 2020. This expansion will result in the relocation of certain manufacturing processes and the risk of manufacturing defects or quality control issues in the consumables we manufacture there could increase as a result. We cannot assure investors that we and our third-party manufacturers will be able to launch new products on time, transition manufacturing of existing products to new manufacturers, transition our manufacturing capabilities to a new location or transition manufacturing of any additional consumables in-house without manufacturing defects. Additionally, impacts stemming from the COVID-19 pandemic, including impacts on the

health and safety of our manufacturing staff or on the global supply chain and transportation infrastructure, may limit our ability to manufacture products and components that meet specifications, in necessary quantities, at commercially acceptable costs, in commercially acceptable timeframes, to our customers.

An inability to manufacture products and components that consistently meet specifications, in necessary quantities and at commercially acceptable costs will have a negative impact and may have a material adverse effect on our business, financial condition and results of operations.

Undetected errors or defects in our solutions could harm our reputation and decrease market acceptance of our solutions.

Our instruments and consumables, as well as the software that accompanies them, may contain undetected errors or defects when first introduced or as new versions are released. Disruptions or other performance problems with our products or software may adversely impact our customers' research or business, harm our reputation and result in reduced revenue or increased costs associated with product repairs or replacements. If that occurs, we may also incur significant costs, the attention of our key personnel could be diverted or other significant customer relations problems may arise. We may also be subject to warranty claims or breach of contract for damages related to errors or defects in our solutions.

Certain disruptions in supply of, and changes in the competitive environment for, raw materials integral to the manufacturing of our products may adversely affect our profitability.

We use a broad range of materials and supplies, including metals, chemicals and other electronic components, in our products. A significant disruption in the supply of these materials, including disruptions stemming from the COVID-19 pandemic, could decrease production and shipping levels, materially increase our operating costs and materially adversely affect our profit margins. Shortages of materials or interruptions in transportation systems, labor strikes, work stoppages, infectious disease, epidemics or pandemics including COVID-19, outbreaks, war, acts of terrorism or other interruptions to or difficulties in the employment of labor or transportation in the markets in which we purchase materials, components and supplies for the production of our products, in each case may adversely affect our ability to maintain production of our products and sustain profitability. Unforeseen end-of-life for certain components, such as enzymes, could cause backorders as we modify our product specifications to accommodate replacement components. If we were to experience a significant disruption in the supply of, or prolonged shortage of, critical components from any of our suppliers and could not procure the components from other sources, we would be unable to manufacture our products and to ship such products to our customers in a timely fashion, which would adversely affect our sales, margins and customer relations.

We depend on certain technologies that are licensed to us. We do not control these technologies and any loss of our rights to them could prevent us from selling our products.

We rely on licenses in order to be able to use various proprietary technologies that are used in a substantial majority of our consumables. We do not own the patents that are the subject matter of these licenses. Our rights to use these patented technologies in our business are subject to the continuation of and compliance with the terms of those licenses.

We may need to license other technologies to commercialize future products. We may also need to negotiate licenses to patents after launching new products. Our business may suffer if the technologies or patents are unavailable for license or if we are unable to enter into necessary licenses on acceptable terms.

If we fail to offer high-quality customer service, our business and reputation could suffer.

We differentiate ourselves from our competition through our commitment to an exceptional customer experience. Accordingly, high-quality customer service is important for the growth of our business and any failure to maintain such standards of customer service, or a related market perception, could affect our ability to sell products to existing and prospective customers. Additionally, we believe our customer service team has a positive influence on recurring consumables revenue. Providing an exceptional customer experience requires significant time and resources from our customer service team. Potential impacts of the COVID-19 pandemic on the health and safety of our customer service organization could reduce or eliminate the organization's ability to provide an exceptional customer experience. Additionally, the organization's ability to provide on-site, in-person customer service (including on-site installation of our instruments) may be restricted or eliminated due to the impacts of the COVID-19 pandemic, including due to governmental or other measures which prevent or restrict members of our organization from traveling or providing on-site service. Therefore, failure to scale our customer service organization adequately or impacts on our organization's ability to provide an exceptional customer experience may adversely impact our business results and financial condition.

Customers utilize our service teams and online content for help with a variety of topics, including how to use our products efficiently, how to integrate our products into existing workflows, how to determine which of our other products may be needed for a given experiment and how to resolve technical, analysis and operational issues if and when they arise. As we introduce new products such as our Chromium Connect and Visium solutions and enhance existing products, we expect utilization of our customer service teams to increase. In particular, the introduction of new or improved products that utilize different workflows or variations on existing workflows may require additional customer service efforts to ensure customers use such products correctly and efficiently. While we have developed significant resources for remote training, including an extensive library of online videos, we may need to rely more on these resources for future customer training or we may experience increased expenses to enhance our online and remote solutions,

particularly due to the impacts of the COVID-19 pandemic. If our customers do not adopt these resources, we may be required to increase the staffing of our customer service team, which would increase our costs. Also, as our business scales, we may need to engage third-party customer service providers, which could increase our costs and negatively impact the quality of the customer experience if such third parties are unable to provide service levels equivalent to ours.

The number of our customers has grown significantly and such growth, as well as any future growth, will put additional pressure on our customer service organization. We may be unable to hire qualified staff quickly enough or to the extent necessary to accommodate increases in demand.

In addition, as we continue to grow our operations and reach a global customer base, we need to be able to provide efficient customer service that meets our customers' needs globally at scale. In geographies where we sell through distributors, we rely on those distributors to provide customer service. If these third-party distributors do not provide a high-quality customer experience, our business operations and reputation may suffer.

We depend on our key personnel and other highly qualified personnel, and if we are unable to recruit, train, retain and ensure the health and safety of our personnel, we may not achieve our goals.

Our future success depends on our ability to recruit, train, retain and motivate key personnel, including our senior management, research and development, manufacturing and sales, customer service and marketing personnel. In particular, Dr. Saxonov, our Chief Executive Officer and one of our co-founders, and Dr. Hindson, our Chief Scientific Officer, President and one of our co-founders, are critical to our vision, strategic direction, culture and products. Competition for qualified personnel is intense, particularly in the San Francisco Bay Area. As we grow, we may continue to make changes to our management team, which could make it difficult to execute on our business plans and strategies. New hires also 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. Additionally, many of our employees are temporarily working from home due to the COVID-19 pandemic and, because of the challenges of working from home during the COVID-19 pandemic, including collaborating with and managing employees, it may take significant time before our teams can achieve full productivity again, if at all, and it may take significantly longer for new hires to achieve full productivity, if at all.

Our continued growth depends, in part, on attracting, retaining and motivating highly trained sales personnel with the necessary scientific background and ability to understand our systems at a technical level to effectively identify and sell to potential new customers. In addition, the continued development of complementary software tools, such as our analysis tools and visualization software, requires us to compete for highly trained software engineers in the San Francisco Bay Area and for highly trained customer service personnel globally. We also compete for computational biologists and qualified scientific personnel with other life sciences companies, academic institutions and research institutions. Many 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 Francisco Bay Area, we expect to continue to rely on 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. The typical immigration and visa procedures of the United States have been impacted by COVID-19 and our current or future employees may be negatively affected by delays, disruptions or changes in United States immigration policies. The current United States administration has made restricting immigration and reforming the work visa process a key focus of its initiatives and these efforts may adversely affect our ability to find qualified personnel.

We do not maintain key person life insurance or fixed term employment contracts with any of our employees. As a result, our employees could leave our company with little or no prior notice and would be free to work for a competitor. Because of the complex and technical nature of our products and the dynamic market in which we compete, any failure to attract, train, retain and motivate qualified personnel could materially harm our operating results and growth prospects. Additionally, while we are committed to maintaining a safe workplace and to support our personnel through the COVID-19 pandemic, the health and safety of our personnel may be impacted by COVID-19 and our operating results and growth prospects could be materially harmed as a result. Further, while we are an essential business that can continue operations under current governmental shelter-in-place measures meant to combat the COVID-19 pandemic, we may face civil liability if any of our employees contracts COVID-19 while performing his or her job on site or is otherwise negatively impacted by the COVID-19 pandemic.

Acquisitions could disrupt our business, cause dilution to our stockholders and otherwise harm our business.

We have and may continue to acquire other businesses and legal entities to add specialized employees, products or technologies as well as pursue technology licenses or investments in complementary businesses. In 2018, we acquired Epinomics, Inc., an epigenetics company based in California, and Spatial Transcriptomics Holdings AB, a spatial analysis company based in Stockholm, Sweden. We believe we are successfully integrating the technologies acquired from those companies into our business, but the long-term success of these acquisitions is not guaranteed. These transactions and any future transactions could be material to our financial condition and operating results and expose us to many risks, including:

- disruption in our relationships with customers, distributors, manufacturers or suppliers as a result of such a transaction;

- unanticipated liabilities related to acquired companies, including liabilities related to acquired intellectual property or litigation relating thereto;
- difficulties integrating acquired personnel, technologies and operations into our existing business;
- diversion of management time and focus from operating our business;
- failure to realize anticipated benefits or synergies from such a transaction;
- increases in our expenses and reductions in our cash available for operations and other uses;
- possible write-offs or impairment charges relating to acquired businesses; and
- potential higher taxes if our tax position relating to the acquisitions were challenged.

Foreign acquisitions, such as our acquisition of Spatial Transcriptomics Holdings AB, involve unique risks in addition to those mentioned above, including those related to integration of operations across different cultures and languages, currency risks and the particular economic, political and regulatory risks associated with specific countries. Even if we identify a strategic transaction that we wish to pursue, we may be prohibited from consummating such transaction due to the terms of the Loan and Security Agreement or any future indebtedness we incur. For example, the Loan and Security Agreement includes a covenant that limits our ability to consummate acquisitions and the exceptions to this covenant are limited. If we were to pursue an acquisition that is not permitted by the Loan and Security Agreement, we would be required to seek a waiver from the lender under the Loan and Security Agreement and we cannot assure investors that the lender would grant such a waiver.

Future acquisitions or dispositions 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. We cannot predict the number, timing or size of future acquisitions or the effect that any such transactions might have on our operating results.

Seasonality may cause fluctuations in our revenue and results of operations.

We operate on a December 31st year end and believe that there are significant seasonal factors which may cause sales of our products, and particularly our Chromium Controller, to vary on a quarterly or yearly basis and increase the magnitude of quarterly or annual fluctuations in our operating results. We believe that this seasonality results from a number of factors, including the procurement and budgeting cycles of many of our customers, especially government- or grant-funded customers, whose cycles often coincide with government fiscal year ends. For example, the United States government's fiscal year end occurs in our third quarter and may result in increased sales of our products during such quarter if government-funded customers have unused funds that may be forfeited, or future budgets that may be reduced, if such funds remain unspent at such fiscal year end. Furthermore, the academic budgetary cycle similarly requires grantees to 'use or lose' their grant funding, which seems to be tied disproportionately to the end of the calendar year, driving sales higher during the fourth quarter. Similarly, our biopharmaceutical customers typically have calendar year fiscal years which also result in a disproportionate amount of their purchasing activity occurring during our fourth quarter. These factors have contributed, and may contribute in the future, to substantial fluctuations in our quarterly operating results. Because of these fluctuations, it is possible that in some quarters our operating results will fall below the expectations of securities analysts or investors. If that happens, the market price of our Class A common stock would likely decrease. These fluctuations, among other factors, also mean that our operating results in any particular period may not be relied upon as an indication of future performance. Seasonal or cyclical variations in our sales have in the past, and may in the future, become more or less pronounced over time, and have in the past materially affected, and may in the future materially affect, our business, financial condition, results of operations and prospects. Additionally, impacts of the COVID-19 pandemic could cause unpredictable temporary or permanent fluctuations in seasonal or cyclical variations.

Our reliance on distributors for sales of our products in certain geographies outside of the United States could limit or prevent us from selling our products and impact our revenue.

We sell our products through third-party distributors in Asia, certain regions of Europe, Oceania, South America, the Middle East and Africa. We intend to continue to grow our business internationally and to do so we must attract additional distributors and retain existing distributors to maximize the commercial opportunity for our products. There is no guarantee that we will be successful in attracting or retaining desirable sales and distribution partners or that we will be able to enter into such arrangements on favorable terms. Most of our distribution relationships are non-exclusive and permit such distributors to distribute competing products. As such, our distributors may not commit the necessary resources to market our products to the level of our expectations or may choose to favor marketing the products of our competitors. Additionally, the ability of our distributors to sell and distribute our products has been and may continue to be impacted by the COVID-19 pandemic. If current or future distributors do not or are unable to perform adequately or if we are unable to enter into effective arrangements with distributors in particular geographic areas, we may not realize long-term international revenue growth.

We rely exclusively on commercial carriers to transport our products, including perishable consumables, to our customers in a timely and cost-efficient manner and if these delivery services are disrupted, our business will be harmed.

Our business depends on our ability to quickly and reliably deliver our products and in particular, our consumables, to our customers. Certain of our consumables are perishable and must be kept below certain temperatures. As such, we ship certain of our refrigerated consumables on dry ice and only ship such consumables on certain days of the week to reach customers on a timely basis. Disruptions in the delivery of our products, whether due to labor disruptions, bad weather, natural disasters, infectious disease, epidemics or pandemics, outbreaks, terrorist acts or threats or for other reasons could result in delivery delays or our customers receiving consumables that are not fit for usage, and if used, could result in inaccurate results or ruined experiments. While we work with customers to replace any consumables that are impacted by delivery disruptions, our reputation and our business may be adversely impacted even if we replace perished consumables free of charge. In addition, if we are unable to continue to obtain expedited delivery services on commercially reasonable terms, our operating results may be adversely affected.

In addition, should our commercial carriers encounter difficulties in delivering our instruments or consumables to customers, including due to impacts stemming from the COVID-19 pandemic, particularly at the end of any financial quarter, it could adversely impact our ability to recognize revenue for those products in that period and accordingly adversely affect our financial results for that period.

Ethical, legal, privacy and social concerns or governmental restrictions surrounding the use of the genomic and multi-omic information and gene editing could reduce demand for our products.

While we do not make gene sequencing or gene editing products, our products are used to better understand genomic information that could further gene editing endeavors. For example, our single cell gene expression solutions allow users to examine cells that have been genetically perturbed using clustered regularly interspaced short palindromic repeats (“CRISPR”) gene editing technology. Advances in genome editing or gene therapy, such as CRISPR Cas9 technology have been subject to negative publicity and increased regulatory scrutiny, in part due to the underlying ethical, legal, privacy and social concerns regarding the use or potential misuse of such technology. Governmental authorities could, for safety, social or other purposes, call for limits on or regulation of technologies and products used in the genome editing or gene therapy fields. Such concerns or governmental restrictions could limit the use of our products. Because the science and technology of genome editing or gene therapy is incredibly complex, any regulations or restrictions placed on such technology or aimed at curtailing its usage could, intentionally or inadvertently, limit or restrict the usage of our products. Any such restrictions or any reduction in usage of our products as a result of concerns regarding the usage of genome editing technology could have a material adverse effect on our business, financial condition and results of operations.

We are subject to certain manufacturing restrictions related to licensed technologies that were developed with the financial assistance of United States government grants.

We are subject to certain United States government regulations because we have licensed technologies that were developed with United States government grants. Such licensed technologies are used, for example, in a substantial majority of our consumables. In accordance with these regulations, these licenses provide that products embodying the technologies are subject to domestic manufacturing requirements. If this domestic manufacturing requirement is not met, the government agency that funded the relevant grant is entitled to exercise specified rights (“march-in rights”) which if exercised would allow the government agency to require the licensors or us to grant a non-exclusive, partially exclusive or exclusive license in any field of use to a third-party designated by such agency. The exercise of march-in rights or the termination of our license of the relevant technologies could materially adversely affect our business, operations and financial condition. As of March 31, 2020, all of our products embodying licensed technology subject to march-in rights were manufactured in the United States. While we do not expect to move manufacturing of these products to facilities located outside of the United States, we cannot assure investors that such products will always be manufactured in the United States or that the applicable government agency would grant a waiver of such requirement. These restrictions may limit our ability to manufacture our products in geographies where it may be more economically favorable to do so which could limit our ability to respond to competitive developments or otherwise adversely affect our results of operations.

Our products could become subject to government regulation and the regulatory approval and maintenance process for such products may be expensive, time-consuming and uncertain both in timing and in outcome.

Our products are not subject to the clearance or approval of the U.S. Food and Drug Administration (the “FDA”), as they are not intended to be used for the diagnosis, treatment or prevention of disease. However, as we continue to expand our product line and the applications and uses of our existing products into new fields, certain of our current or 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. Such regulatory approval processes or clearances may be expensive, time-consuming and uncertain, and our failure to obtain or comply with such approvals and clearances could have an adverse effect on our business, financial condition and operating results. In addition, 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, fraud and abuse, false claims, privacy and security and physician sunshine laws and regulations.

Diagnostic products are regulated as medical devices by the FDA and comparable international agencies and may require either clearance from the FDA following the 510(k) pre-market notification process or pre-market approval from the FDA, in each case prior to marketing. Obtaining the requisite regulatory approvals can be expensive and may involve considerable delay. None of our products are currently regulated as medical devices, however, if our products labeled as "For Research Use Only. Not for use in diagnostic procedures" are used, or could be used, for the diagnosis of disease, the regulatory requirements related to marketing, selling and supporting such products could change or be uncertain, even if such use by our customers is without our consent.

If the FDA or other regulatory authorities assert that any of our products are subject to regulatory clearance or approval, our business, financial condition or results of operations could be adversely affected.

Enhanced trade tariffs, import restrictions, export restrictions, Chinese regulations or other trade barriers may materially harm our business.

We are continuing to expand our international operations as part of our growth strategy and have experienced an increasing concentration of sales in certain regions outside the United States, especially in the Asia-Pacific region. For the three months ended March 31, 2020, sales outside of North America constituted approximately 45% of our sales revenue and our largest markets outside of North America were China and Germany. There is currently significant uncertainty about the future relationship between the United States and various other countries, most significantly China, with respect to trade policies, treaties, government regulations and tariffs. The current United States presidential administration has called for substantial changes to United States foreign trade policy with respect to China and other countries, including the possibility of imposing greater restrictions on international trade and significant increases in tariffs on goods imported into the United States. While the United States and China have recently entered into a phase one trade deal, significant uncertainty about future trade policies between the United States and China remains.

Additionally, our business may be adversely impacted by retaliatory trade measures taken by China or other countries. Such measures could include restrictions on our ability to sell or import our instruments and/or consumables into certain countries or have the effect of increasing the prices of our instruments and/or consumables. The nature of the dispute between the United States and China is evolving and additional products such as ours could become subject to tariffs, which could adversely affect the marketability of our products and our results of operations. Further, the continued threats of tariffs, trade restrictions and trade barriers could have a generally disruptive impact on the global economy and, therefore, negatively impact our sales. Given the relatively fluid regulatory environment in China and the United States and uncertainty how the United States or foreign governments will act with respect to tariffs, international trade agreements and policies, there could be additional tax or other regulatory changes in the future. Any such changes could directly and adversely impact our financial results and results of operations.

Additionally, in November 2018, the United States Commerce Department's Bureau of Industry and Security released an advance notice of proposed rulemaking to control the export of emerging technologies. This notice included "[b]iotechnology, including nanobiology; synthetic biology; genomic and genetic engineering; or neurotech" as possible areas of increased export controls. Therefore, it is possible that our ability to export our products may be restricted in the future.

The imposition of new, or changes in existing, tariffs, trade restrictions, trade barriers, export controls or retaliatory trade measures taken by other countries could adversely impact our business, financial condition and results of operations.

Doing business internationally creates operational and financial risks for our business.

We currently serve thousands of researchers in many countries and plan to continue to expand to new international jurisdictions as part of our growth strategy. For the three months ended March 31, 2020, approximately 45% of our revenue was generated from sales to customers located outside of North America. We believe that a significant portion of our future revenue will come from international sources. We sell directly in North America and certain regions of Europe and have a significant portion of our sales and customer service personnel in the United States. We sell our products through third-party distributors in Asia, certain regions of Europe, Oceania, South America, the Middle East and Africa. As a result, we or our distribution partners may be subject to additional regulations. Conducting operations on an international scale requires close coordination of activities across multiple jurisdictions and time zones. If we fail to coordinate and manage these activities effectively, our business, financial condition or results of operations could be materially and adversely affected and failure to comply with laws and regulations applicable to business operations in foreign jurisdictions may also subject us to significant liabilities and other penalties. International operations entail a variety of other risks, including, without limitation:

- challenges in staffing and managing foreign operations;
- potentially longer sales cycles and more time required to engage and educate customers on the benefits of our products outside of the United States;
- the potential need for localized software, documentation and post-sales support;

- reduced protection for intellectual property rights in some countries and practical difficulties of enforcing intellectual property and contract rights abroad;
- complexities associated with managing a third-party contract manufacturer located outside of the United States;
- United States and foreign government trade restrictions, including those which may impose restrictions on the importation, exportation, re-exportation, sale, shipment or other transfer of programming, technology, components and/or services to foreign persons;
- changes in diplomatic and trade relationships, including new tariffs, trade protection measures, import or export licensing requirements, trade embargoes and other trade barriers;
- tariffs imposed by the United States on goods from other countries and tariffs imposed by other countries on United States goods, or increases in existing tariffs;
- deterioration of political relations between the United States and Canada, China, the United Kingdom and the European Union, which could have a material adverse effect on our sales and operations in these countries;
- changes in social, political and economic conditions or in laws, regulations and policies governing foreign trade, manufacturing, development and investment both domestically as well as in the other countries and jurisdictions into which we sell our products, including as a result of the United Kingdom's exit from the European Union;
- difficulties in obtaining export licenses or in overcoming other trade barriers and restrictions resulting in delivery delays or our inability to sell our products in certain countries;
- natural disasters, infectious diseases, epidemics or pandemics including COVID-19, outbreaks or major catastrophic events;
- increased financial accounting and reporting burdens and complexities; and
- significant taxes or other burdens of complying with a variety of foreign laws, including laws relating to privacy and data protection such as the General Data Protection Regulation (the "GDPR").

In conducting our international operations, we are subject to United States laws relating to our international activities, such as the Foreign Corrupt Practices Act of 1977, as well as foreign laws relating to our activities in other countries, such as the United Kingdom Bribery Act of 2010. Additionally, we are subject to laws that prohibit the conduct of business with persons that are subject to "sanctions," including but not limited to persons listed on the United States Department of Commerce's List of Denied Persons and the United States Department of Treasury's Specially Designated Nationals and Blocked Persons List. Failure to comply with these laws and other applicable laws may subject us to claims or financial and/or other penalties in the United States and/or foreign countries that could materially and adversely impact our operations or financial condition. These risks have become increasingly prevalent as we have expanded our sales into countries that are generally recognized as having a higher risk of corruption.

Historically, most of our revenue has been denominated in U.S. dollars, although we have sold our products and services in local currency outside of the United States, principally the euro. For the three months ended March 31, 2020, approximately 12.1% of our sales were denominated in currencies other than U.S. dollars. Our expenses are generally denominated in the currencies in which our operations are located, which is primarily in the United States. As our operations in countries outside of the United States grow, our results of operations and cash flows will become increasingly subject to fluctuations due to changes in foreign currency exchange rates, which could harm our business in the future. For example, if the value of the U.S. dollar increases relative to foreign currencies, in the absence of a corresponding change in local currency prices, our revenue could be adversely affected as we convert revenue from local currencies to U.S. dollars. During periods of economic crises, such as fallout from the COVID-19 pandemic, foreign currencies may be devalued significantly against the U.S. dollar, reducing our margins. In addition, because we conduct business in currencies other than U.S. dollars, but report our results of operations in U.S. dollars, we also face remeasurement exposure to fluctuations in currency exchange rates, which could hinder our ability to predict our future results and earnings and could materially impact our results of operations. We do not currently maintain a program to hedge foreign currency exposures.

Violations of complex foreign and United States laws and regulations could result in fines and penalties, criminal sanctions against us, our officers or our employees, prohibitions on the conduct of our business and on our ability to offer our products and services in one or more countries, and could also materially affect our brand, our international growth efforts, our ability to attract and retain employees, our business and our operating results. Even if we implement policies or procedures designed to ensure compliance with these laws and regulations, there can be no assurance that our distribution partners, our employees, contractors or agents will not violate our policies and subject us to potential claims or penalties.

Significant U.K. or European developments stemming from the U.K.'s withdrawal from the European Union could have a material adverse effect on us.

In January 2020, the United Kingdom exited from the European Union ("Brexit") under the terms of a withdrawal agreement, entering into a "transition period" ending December 31, 2020 during which the existing regulatory regime will essentially be the same. Formal regulatory and trading relationships between the United Kingdom and the European Union will be dependent upon whether the United

Kingdom extends the transition period as provided for in the withdrawal agreement, whether the two parties reach an agreement before the end of the transition period and the content of any agreement(s) reached. The withdrawal process has created political and economic uncertainty, particularly in the United Kingdom and the European Union, and this uncertainty may continue through the transition period and beyond. Our business in the United Kingdom, the European Union and worldwide could be affected during the transition period, and perhaps longer, depending, in part, on the outcome of tariff, trade, regulatory and other negotiations between the United Kingdom and European Union. There are many ways in which our business could be affected, only some of which we are able to currently identify.

The events that could occur in the future as a consequence of the United Kingdom's withdrawal may cause significant volatility in global financial markets, including in global currency and debt markets. This volatility could cause a slowdown in economic activity in the United Kingdom, Europe or globally, which could adversely affect our operating results and growth prospects. In addition, our business could be negatively affected by new trade agreements or data transfer agreements between the United Kingdom and other countries, including the United States, and by the possible imposition of trade or other regulatory and immigration barriers in the United Kingdom. In addition, access to European Union research funding by research scientists based in the United Kingdom may be reduced or cut off altogether. It also is unclear whether Brexit may limit the ability or willingness of the United Kingdom's Medical Research Council or other funding sources to continue funding genomic or single cell research by local research centers and labs. The impact of the United Kingdom's withdrawal from the European Union could negatively impact our revenue as a result of currency fluctuations, a slowdown in research funding or restricted budgets. In addition, the growth of sales in the United Kingdom may be slowed or those sales may even decline as a result of this withdrawal. Additionally, distribution costs for products sold in the United Kingdom may be increased due to trade agreements and incremental importation expenses. These possible negative impacts, and others resulting from the United Kingdom's withdrawal from the European Union, may increase our cost of doing business in Europe, disrupt our European operations and adversely affect our operating results and growth prospects.

The illegal distribution and sale by third parties of counterfeit or unfit versions of our products or stolen products could have a negative impact on our reputation and business.

Third parties might illegally distribute and sell counterfeit or unfit versions of our products, which do not meet our rigorous manufacturing, distribution and quality standards. As we expand our business internationally, we expect to encounter counterfeit versions of our products, particularly our consumables. A researcher who receives and uses counterfeit consumables could obtain erroneous results, experience failed experiments or potentially damage his or her instrument. Our reputation and business could suffer harm as a result of counterfeit products sold under our brand name. In addition, inventory that is stolen from warehouses, plants or while in-transit, and that is subsequently improperly stored and sold through unauthorized channels, could adversely impact our customers' experiments, our reputation and our business.

We currently plan to implement a new company-wide enterprise resource planning system in 2020 and such implementation could adversely affect our business and results of operations or the effectiveness of internal control over financial reporting.

We currently plan to implement a new company-wide enterprise resource planning ("ERP") system in 2020 to handle the business and financial processes within our operations, manufacturing and corporate functions. ERP implementations are complex and time-consuming projects that involve substantial expenditures on system software, the need to hire consultants and additional personnel for the implementation and implementation activities that can continue for several years. ERP implementations also require transformation of business and financial processes in order to reap the benefits of the ERP system. Our business and results of operations could be adversely affected if we experience operating problems and/or cost overruns during the ERP implementation process, or if the ERP system and the associated process changes do not give rise to the benefits that we expect. If we do not effectively implement and transition to the new ERP system as planned or if the system does not operate as intended, our business, results of operations and internal controls over financial reporting could be adversely affected.

Our solutions contain third-party open source software components and failure to comply with the terms of the underlying open source software licenses could restrict our ability to sell our products.

Our solutions contain software tools licensed by third parties under open source software licenses. Use and distribution of open source software may entail greater risks than use of third-party commercial software, as open source software licensors generally do not provide warranties or other contractual protections regarding infringement claims or the quality of the code. Some open source software licenses contain requirements that the licensee make its source code publicly available if the licensee creates modifications or derivative works using the open source software, depending on the type of open source software the licensee uses and how the licensee uses it. If we combine our proprietary software with open source software in a certain manner, we could, under certain open source software licenses, be required to release the source code of our proprietary software to the public for free. This would allow our competitors to create similar products with less development effort and time and ultimately could result in a loss of product sales and revenue. In addition, some companies that use third-party open source software have faced claims challenging their use of such open source software and their compliance with the terms of the applicable open source license. We may be subject to suits by third parties claiming ownership of what we believe to be open source software, or claiming non-compliance with the applicable open source licensing terms. Use of open source software may also present additional security risks because the public availability of such software may make it easier for hackers and other third parties to compromise or attempt to compromise our technology platform and systems.

Although we review our use of open source software to avoid subjecting our solutions to conditions we do not intend, the terms of many open source software licenses have not been interpreted by United States courts, and there is a risk that these licenses could be construed in a way that could impose unanticipated conditions or restrictions on our ability to commercialize our solutions. Moreover, we cannot assure investors that our processes for monitoring and controlling our use of open source software in our solutions will be effective. If we are held to have breached the terms of an open source software license, we could be required to seek licenses from third parties to continue offering our solutions on terms that are not economically feasible, to re-engineer our solutions, to discontinue the sale of our solutions if re-engineering could not be accomplished on a timely basis, or to make generally available, in source code form, our proprietary code, any of which could adversely affect our business, operating results and financial condition.

We collect, process, store, share, disclose and use personal information and other data, which subjects us to governmental regulations and other legal obligations related to privacy and security, and our actual or perceived failure to comply with such obligations could harm our business.

We collect, process, store, transmit, disclose and use information from our employees, customers and others, including personal information and other data, some of which may be sensitive in nature. There are numerous federal, state and foreign laws and regulations regarding data protection, privacy and security. We strive to comply with applicable laws, our posted policies and legal contractual obligations relating to privacy and data protection. However, the scope of these laws is changing, is subject to differing interpretations, may be costly to comply with and may be inconsistent among countries and jurisdictions or conflict with other rules. Our business, including our ability to operate and expand internationally, could be adversely affected if legislation or regulations are adopted, interpreted or implemented in a manner that is inconsistent with our current business practices and that require changes to these practices.

The global data protection landscape is rapidly evolving and new laws and regulations are likely to be enacted and violations of existing and new laws and regulations may subject companies to significant penalties and fines, government investigations and/or enforcement actions, private litigation and other claims. For example, the European Union's adoption of the GDPR introduced stringent requirements for processing personal data. The GDPR is likely to increase compliance burdens on us, including by mandating potentially burdensome documentation requirements and granting certain rights to individuals to control how we collect, use, disclose, retain and leverage information about them or how we obtain consent from them. The processing of sensitive personal data, such as physical health condition, may impose heightened compliance burdens under the GDPR and is a topic of active interest among foreign regulators. In addition, the GDPR provides for breach reporting requirements, more robust regulatory enforcement and greater penalties for noncompliance than previous data protection laws, including fines of up to €20 million or 4% of a noncompliant company's global annual revenue for the preceding financial year, whichever is greater. As we continue to expand into other foreign countries and jurisdictions, we may be subject to additional laws and regulations that may affect how we conduct business.

In the United States, California enacted the California Consumer Privacy Act (the "CCPA"), which came into effect on January 1, 2020 and limits and imposes requirements on how we may collect and use personal information and provides for civil penalties for violations and a private right of action for data breaches. The impact of this law on us and others in our industry is and will remain unclear until final regulations are issued by the California Attorney General later this year and such regulations are interpreted by enforcement action (which cannot be brought under the CCPA until July 1, 2020) or otherwise. Similar privacy and data protection laws have also been proposed in other states and at the federal level.

Any failure or perceived failure by us or our vendors or partners to comply with these laws and regulations, our privacy and notice policies, our privacy-related obligations to employees, customers or other third parties or privacy or security-related legal obligations, or any actual or perceived compromise of security that results in the unauthorized access to or disclosure, alteration, theft, loss, transfer or use of personal or other information, including personally identifiable information or other sensitive data, may result in governmental enforcement actions, fines and penalties, litigation or public statements critical of us by consumer advocacy groups or others and could cause our customers, partners or others to lose trust in us, which could have an adverse effect on our business.

If we experience a significant 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 are potentially vulnerable to disruption due to breakdown, malicious intrusion, computer viruses, worms, ransomware 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. In addition to traditional computer "hackers," malicious code (such as viruses, worms and ransomware), employee theft or misuse, denial-of-service attacks and sophisticated nation-state and nation-state supported actors now engage in attacks (including advanced persistent threat intrusions). Despite significant efforts to create security barriers to such threats, it is virtually impossible for us to entirely mitigate these risks. If our security measures are compromised as a result of third-party action, employee or customer error, malfeasance, stolen or fraudulently obtained log-in credentials or otherwise, our reputation could be damaged, our business may be harmed 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, it could negatively impact our ability to serve our customers, which could adversely impact our business. If operations at our facilities were disrupted, it may cause a material disruption in our business if we are not capable of restoring functionality on an acceptable timeframe. In addition, our information technology systems (and those of our vendors and partners) are potentially vulnerable to data security breaches, whether by internal bad actors (e.g., employees) or external bad actors (attacks of which are becoming increasingly sophisticated, including social engineering and phishing scams), which could lead to the exposure of personal data, sensitive data and confidential information to unauthorized persons. 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.

We have not always been able in the past and may be unable in the future to anticipate or prevent techniques used to obtain unauthorized access or to compromise our systems because the techniques used change frequently and are generally not detected until after an incident has occurred. Concerns regarding data privacy and security may cause some of our customers to stop using our solutions. This discontinuance in use could substantially harm our business, operating results and growth prospects.

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. 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.

In March 2020, we experienced an attempted ransomware attack in which cybercriminals were able to access our information technology systems. While we isolated the source of the attack and restored normal operations with no material day-to-day impact to us or our ability to access our data, we have reason to believe confidential information was stolen. We believe the attempted ransomware attack could lead to the disclosure of our trade secrets or other intellectual property, or could lead to the exposure of personal information of our employees. The release of any of this information could have a material adverse effect on our business, reputation, financial condition and results of operations.

In addition, the March 2020 attempted ransomware attack 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 judgements against us, penalties and fines.

The cost of investigating, mitigating and responding to potential data security breaches and complying with applicable breach notification obligations to individuals, regulators, partners and others, including the March 2020 attempted ransomware attack, could be significant. Our insurance policies may not be adequate to compensate us for the potential costs and other losses arising from such disruptions, failures, attempted attacks or security breaches. In addition, such insurance may not be available to us in the future on economically reasonable terms, or at all. Further, defending a suit, regardless of its merit, could be costly, divert management attention and harm our reputation.

We rely on on-premise, co-located and third-party data centers and platforms to host our website and other online services, as well as for research and development purposes and any interruptions of service or failures may impair and harm our business.

Our proprietary software is a crucial component of our solutions, as our software allows our end users to visualize genomic and multi-omic information provided by our instruments and reagents. Our software is generally downloadable free of charge from our website for installation and use by end users on their computer systems. Our website is hosted with various third-party service providers located in the United States. We rely on on-premises, co-located and third-party infrastructure in the San Francisco Bay Area and other regions in the United States to perform computationally demanding analysis tasks for our research and development programs and for other business purposes.

In the event of any technical problems that may arise in connection with our on-premise, co-located or third-party data centers, we could experience interruptions in our ability to provide products and services to our customers or in our internal functions, including research and development, which rely on such services. Interruptions or failures may be caused by a variety of factors, including infrastructure changes, human or software errors, viruses, worms, ransomware, security attacks, fraud, spikes in customer usage and denial of service issues. Interruptions or failures in our operations or services may reduce our revenue, result in the loss of customers, adversely affect our ability to attract new customers or harm our reputation. Significant interruptions to our research and development programs could cause us to delay the introduction of new products or improvements to existing products, which could adversely impact our business, our results of operations and the competitiveness of our products.

Our current solutions are capable of generating large datasets, the analysis of which can be time consuming without access to a high-performance computing system. The visualization of such data can also be computationally intensive. As we iterate and improve our products and as the related technologies advance, our continued growth may require an ability to provide our customers with direct access to a high-performance computing system and/or alternative means of obtaining our software. As a result, we expect our reliance on internal and third-party data centers to increase in the future.

Further, as we rely on third-party and public-cloud infrastructure, we will depend in part on third-party security measures to protect against unauthorized access, cyberattacks and the mishandling of customer data. In addition, failures to meet customers' expectations with respect to security and confidentiality of their data and information could damage our reputation and affect our ability to retain customers, attract new customers and grow our business. In addition, a cybersecurity event could result in significant increases in costs, including costs for remediating the effects of such an event, lost revenue due to a decrease in customer trust and network downtime; increases in insurance coverage due to cybersecurity incidents; and damages to our reputation because of any such incident.

Indebtedness may impair our financial and operating flexibility.

The Loan and Security Agreement contains affirmative and negative covenants, including a covenant requiring us to maintain minimum revenue over specified periods of time and covenants that restrict, among other things, our ability to dispose of assets, change our business, management, ownership or business locations, enter into mergers or acquisitions, incur indebtedness or encumber any of our assets. Borrowings under the Loan and Security Agreement are secured by substantially all of our assets, excluding our intellectual property but including the proceeds from the sale of any of our intellectual property. These restrictions could limit our operational flexibility and the need to make principal and interest payments on our debt will reduce our ability to fund other aspects of our business, such as our research and development programs. Our ability to make principal and interest payments on our indebtedness will depend on our ability to generate cash. If we default under the Loan and Security Agreement and if the default is not cured or waived, the lender could terminate its commitments to lend to us and cause any amounts outstanding to be payable immediately. Under certain circumstances, the lender could also exercise its rights with respect to the collateral securing such loans. Such a default could also result in cross-defaults under other debt instruments. Moreover, any such default would limit our ability to obtain additional financing, which may have an adverse effect on our cash flow and liquidity.

We may incur indebtedness in the future. The debt instruments governing such indebtedness could contain restrictive provisions. If we incur debt, a portion of our cash flows will be needed to satisfy our debt service obligations. While we do not anticipate that we will need to raise additional financing in the future to fund our operations, in the event that additional financing is required, we may not be able to raise it on terms acceptable to us or at all. As a result, we would be more vulnerable to general adverse economic, industry and capital markets conditions in addition to the risks associated with indebtedness described above.

Our ability to use net operating losses to offset future taxable income may be subject to certain limitations.

As of December 31, 2019, we had federal net operating loss carryforwards ("NOLs") of $110.7 million and federal tax credit carryforwards of $12.3 million. Our federal NOLs generated after January 1, 2018, which total $6.5 million, are carried forward indefinitely, while all of our other federal NOLs and tax credit carryforwards expire beginning in 2032. As of December 31, 2019, we had state NOLs of $86.6 million, which expire beginning in 2032. In addition, we had state tax credit carryforwards of $11.4 million, which carry forward indefinitely. Our ability to utilize such carryforwards for income tax savings is subject to certain conditions and may be subject to certain limitations in the future due to ownership changes as described below. As such, there can be no assurance that we will be able to utilize such carryforwards. We have experienced a history of losses and a lack of future taxable income would adversely affect our ability to utilize these NOLs and research and development credit carryforwards.

Under Sections 382 and 383 of the Internal Revenue Code of 1986, as amended (the "Code"), if a corporation undergoes an "ownership change," the corporation's ability to use its pre-change net operating loss carryforwards and other pre-change attributes, such as research tax credits, to offset its post-change income may be limited. In general, an "ownership change" will occur if there is a cumulative change in our ownership by "5% shareholders" that exceeds 50 percentage points over a rolling three-year period. Similar rules may apply under state tax laws. We completed a study through the date of our IPO to determine whether an ownership change had occurred under Section 382 or 383 of the Code, and we determined at that time that an ownership change occurred in 2013. As a result, our net operating losses generated through November 1, 2013 may be subject to limitation under Section 382 of the Code. The amount of pre-change loss carryforwards which may be subject to this limitation is $4.8 million. Our ability to use net operating loss carryforwards, research and development credit carryforwards and other tax attributes to reduce future taxable income and liabilities may be further limited as a result of future changes in stock ownership. As a result, if we earn net taxable income, our ability to use our pre-change net operating loss carryforwards or other pre-change tax attributes to offset United States federal and state taxable income may still be subject to limitations, which could potentially result in increased future tax liability to us.

We are subject to risks related to taxation in multiple jurisdictions.

We are subject to income taxes in both the United States and foreign jurisdictions. Significant judgments based on interpretations of existing tax laws or regulations are required in determining our provision for income taxes. Our effective income tax rate could be adversely affected by various factors, including, but not limited to, changes in the mix of earnings in tax jurisdictions with different statutory tax rates, changes in the valuation of deferred tax assets and liabilities, changes in existing tax policies, laws, regulations or rates, changes in the level of non-deductible expenses (including share-based compensation), changes in the location of our operations, changes in our future levels of research and development spending, mergers and acquisitions or the result of examinations by various tax authorities. Although we believe our tax estimates are reasonable, if the United States Internal Revenue Service or other taxing authority disagrees with the positions taken on our tax returns, we could have additional tax liability, including interest and penalties. If material, payment of such additional amounts upon final adjudication of any disputes could have a material impact on our results of operations and financial position.

Changes in tax laws or regulations that are applied adversely to us or our customers may have a material adverse effect on our business, cash flow, financial condition or results of operations.

New income, sales, use or other tax laws, statutes, rules, regulations or ordinances could be enacted at any time, which could affect the tax treatment of our domestic and foreign earnings. Any new taxes could adversely affect our domestic and international business operations and our business and financial performance. Further, existing tax laws, statutes, rules, regulations or ordinances could be interpreted, changed, modified or applied adversely to us. For example, the Tax Cuts and Jobs Act of 2017 (the "TCJA") significantly revised the Code. The recently enacted federal income tax law, among other things, contains significant changes to corporate taxation, including a reduction of the federal statutory rates from a top marginal rate of 35% to a flat rate of 21%, limitation of the tax deduction for interest expense to 30% of adjusted earnings (except for certain small businesses), limitation of the deduction for net operating losses to 80% of current year taxable income, elimination of net operating loss carrybacks, one time taxation of offshore earnings at reduced rates regardless of whether they are repatriated, elimination of U.S. tax on foreign earnings (subject to certain important exceptions), immediate deductions for certain new investments instead of deductions for depreciation expense over time and modifying or repealing many business deductions and credits. Notwithstanding the reduction in the corporate income tax rate, the overall impact of the new federal tax law is uncertain and our business and financial condition could be adversely affected. It is also unknown if and to what extent various states will conform to the newly enacted federal tax law. We have completed our evaluation of the overall impact of TCJA on our effective tax rate and balance sheet through March 31, 2020 and have reflected the amounts in our financial statements for the quarter ended March 31, 2020.

If we fail to maintain an effective system of disclosure controls and internal control over financial reporting, our ability to produce timely and accurate financial statements or comply with applicable regulations could be impaired.

As a public company, we are subject to the reporting requirements of the Exchange Act, the Sarbanes-Oxley Act of 2002, as amended ("SOX"), and the rules and regulations of the applicable listing standards of the Nasdaq Global Select Market ("Nasdaq"). We expect that the requirements of these rules and regulations will continue to increase our legal, accounting and financial compliance costs, make some activities more difficult, time-consuming and costly, and place significant strain on our personnel, systems and resources.

SOX requires, among other things, that we maintain effective disclosure controls and procedures and internal control over financial reporting. We are continuing to develop and refine our disclosure controls and other procedures that are designed to ensure that information required to be disclosed by us in the reports that we file with the SEC is accurately recorded, processed, summarized and reported within the time periods specified in SEC rules and forms and that information required to be disclosed in reports under the Exchange Act is accumulated and communicated to our principal executive and financial officers. We are also continuing to improve our internal control over financial reporting. In order to maintain and improve the effectiveness of our disclosure controls and procedures and internal control over financial reporting, we have expended, and anticipate that we will continue to expend, significant resources including accounting-related costs and significant management oversight.

Our current controls and any new controls that we develop may become inadequate because of changes in conditions in our business. Further, weaknesses in our disclosure controls and internal control over financial reporting may be discovered in the future. Any failure to develop or maintain effective controls or any difficulties encountered in their implementation or improvement could harm our results of operations or cause us to fail to meet our reporting obligations and may result in a restatement of our financial statements for prior periods. Any failure to implement and maintain effective internal control over financial reporting also could adversely affect the results of periodic management evaluations and annual independent registered public accounting firm attestation reports regarding the effectiveness of our internal control over financial reporting that we will eventually be required to include in our periodic reports that will be filed with the SEC. Ineffective disclosure controls and procedures and internal control over financial reporting could also cause investors to lose confidence in our reported financial and other information, which would likely have a negative effect on the trading price of our Class A common stock. In addition, if we are unable to continue to meet these requirements, we may not be able to remain listed on Nasdaq. We are not currently required to comply with the SEC rules that implement Section 404 of SOX and are therefore not required to make a formal assessment of the effectiveness of our internal control over financial reporting for that purpose. As a public company, we will be required to provide an annual management report on the effectiveness of our internal control over financial reporting commencing with our second annual report on Form 10-K, which will be filed in 2021.

We cannot provide any assurance that significant deficiencies or material weaknesses in our internal controls over financial reporting will not be identified in the future. If we fail to remediate any significant deficiencies or material weaknesses that may be identified in the future or encounter problems or delays in the implementation of internal controls over financial reporting, we may be unable to conclude that our internal controls over financial reporting are effective. We are currently implementing an internal audit function and any failure to correctly do so could lead to significant deficiencies or material weaknesses in our financial reporting. Any failure to develop or maintain effective controls or any difficulties encountered in our implementation of our internal controls over financial reporting could result in material misstatements that are not prevented or detected on a timely basis, which could potentially subject us to sanctions or investigations by the SEC or other regulatory authorities. Ineffective internal controls could cause investors to lose confidence in us and the reliability of our financial statements and cause a decline in the price of our Class A common stock.

Our independent registered public accounting firm is not required to formally attest to the effectiveness of our internal control over financial reporting until our first annual report filed with the SEC where we are an "accelerated filer" or a "large accelerated filer". At such time, our independent registered public accounting firm may issue a report that is adverse in the event it is not satisfied with the level at which our internal control over financial reporting is documented, designed or operating. Any failure to maintain effective disclosure controls and internal control over financial reporting could materially and adversely affect our business, results of operations and financial condition and could cause a decline in the trading price of our Class A common stock.

If our estimates or judgments relating to our critical accounting policies are based on assumptions that change or prove to be incorrect, our operating results 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 Class A common stock.

The preparation of financial statements in conformity with generally accepted accounting principles in the United States ("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 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. 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 Class A common stock.

Risks related to litigation and our intellectual property

We are involved in significant litigation which has consumed significant resources and management time and adverse resolution of these lawsuits could require us to pay significant damages, and prevent us from selling our products, which would severely adversely impact our business, financial condition or results of operations.

Our success depends in part on our non-infringement of the patents or proprietary rights of third parties. Third parties have asserted and may in the future assert that our products infringe patents that they have obtained and may in the future obtain. We have incurred and could incur substantial costs and divert the attention of our management and technical personnel in defending ourselves against any of these claims. Any adverse ruling or perception of an adverse ruling in defending ourselves against these claims could have an adverse impact on our business, financial condition or results of operations. Furthermore, parties making claims against us have obtained and may in the future be able to obtain injunctive or other relief, which effectively could block our ability to further develop, commercialize, market or sell products or services and have resulted and could in the future result in the award of substantial damages against us. In the event of a successful infringement claim against us, we may be required to pay damages and obtain one or more licenses from third parties or be prohibited from selling certain products or services. In addition, we may be unable to obtain these licenses at a reasonable cost, if at all. We could therefore incur substantial costs related to royalty payments for licenses obtained from third parties, which could negatively affect our gross margins and earnings per share. In addition, we could encounter delays in product introductions while we attempt to develop alternative methods or products. Defense of any lawsuit or failure to obtain any of these licenses on favorable terms could prevent us from commercializing products and the prohibition of sale of any of our products or services could adversely affect our ability to grow or achieve or maintain profitability. Regardless of merit or eventual outcome, lawsuits brought against us may result in decreased demand for our products, injury to our reputation and increased insurance costs.

We have been involved in multiple patent litigation matters in the past several years and we expect that given the litigious history of our industry and the high profile of operating as a public company, other third parties, in addition to the parties identified herein, may claim that our products infringe their intellectual property rights. Our success depends in part on our ability to defend ourselves against such claims and maintain the validity of our patents and other proprietary rights.

In particular, we are currently involved in the following litigation matters related to substantially all of our products, the loss of any of which could have a material adverse effect on our business, operations, financial results and reputation. Beginning in 2015, Bio-Rad has filed six separate patent infringement cases against substantially all of our products, including instruments and consumables. These litigations are generally distinct and involve different Bio-Rad patents, however, the patents asserted by Bio-Rad in the U.S. International Trade Commission ("ITC") are also asserted in the district court case filed in the Northern District of California.

The details of these litigation matters are described below:

The 2015 Delaware Action

In February 2015, Raindance and the University of Chicago filed suit against us in the U.S. District Court for the District of Delaware, alleging that substantially all of our products that use our GEM microfluidic chips are infringing seven U.S. patents owned by or exclusively licensed to Raindance (the "Delaware Action"). In May 2017, Bio-Rad was substituted as the plaintiff following its acquisition of Raindance. A jury trial was held in November 2018. The jury found that all of our accused products infringed one or more of U.S. Patent Nos. 8,304,193, 8,329,407 and 8,889,083. The jury also concluded that our infringement was willful and awarded Bio-Rad approximately $24 million in damages. Post-trial, Bio-Rad moved for a permanent injunction, treble damages for willful infringement, attorneys' fees, supplemental damages for the period from the second quarter of 2018 through the end of the trial as well as pre- and post-judgment interest.

The Court denied Bio-Rad's request for attorneys' fees and enhanced damages for willful infringement. The Court awarded supplemental damages for the period from the second quarter of 2018 through the end of trial as well as pre- and post-judgment interest. The Court entered final judgment against us in the amount of approximately $35 million in August 2019. In the fourth quarter of 2018, we began recording an accrual for estimated royalties as cost of revenue. This accrual is based on an estimated royalty rate of 15% of worldwide sales of our Chromium instruments operating our GEM microfluidic chips and associated consumables. As of March 31, 2020, we had accrued a total of $73.3 million relating to this matter which includes the $35 million judgment and our estimated 15% royalty for subsequent sales through that date.

The Court also granted Bio-Rad a permanent injunction against our GEM microfluidic chips and associated consumables that were found to infringe the Bio-Rad patents, which have historically constituted a significant amount of our product sales. However, under the injunction, we are permitted to continue to sell our GEM microfluidic chips and associated consumables for use with our historical installed base of instruments provided that we pay into escrow a royalty of 15% of our net revenue related to such sales. We appealed the injunction to the Federal Circuit. The Federal Circuit granted an interim order staying the injunction pending resolution of our motion with respect to our Single Cell CNV and Linked-Read solutions subject to the 15% royalty payment described above. On September 24, 2019, the Federal Circuit extended the stay with respect to the Single Cell CNV and Linked-Read solutions for the pendency of the appeal, but otherwise denied our request to stay the injunction. We also appealed the judgment to the Federal Circuit, which held oral arguments in April 2020.

We have dedicated significant resources to designing and manufacturing our Next GEM microfluidic chips which use fundamentally different physics from our GEM microfluidic chips. Neither the jury verdict nor the injunction relate to our Next GEM microfluidic chips based on our new proprietary design and associated consumables which we launched in May 2019 for three of our single cell solutions – Single Cell Gene Expression, Single Cell Immune Profiling and Single Cell ATAC. Since August 28, 2019, all Chromium instruments that we sell and have sold operate exclusively with our Next GEM solutions and we currently expect that our Chromium products utilizing our Next GEM microfluidic chips will constitute substantially all of our Chromium consumables sales by the end of 2020.

Although our Next GEM microfluidic chips were designed to replace our GEM microfluidic chips, we cannot assure you that we will be able to make our Next GEM microfluidic chip work with all of our solutions, that our Next GEM microfluidic chip will allow our customers to maintain the level of performance or quality of our GEM microfluidic chip, that our Next GEM microfluidic chip will replace the sales of the GEM microfluidic chip or that we will be able to manufacture the Next GEM microfluidic chips in sufficient volumes in a timely fashion. Our Next GEM microfluidic chips may be subject to future claims of infringement by Bio-Rad or others and are currently the subject of the litigation described in this risk factor. While we believe that our Chromium solutions, when used with our Next GEM microfluidic chip, would not infringe the asserted Bio-Rad patents, we cannot assure you that our Next GEM microfluidic chip would not become subject to additional patent infringement litigation, which could prevent us from making, selling and importing our Next GEM microfluidic chips. In addition, it is possible that Bio-Rad could, in the future, claim that our continued sale of products violates orders issued by the court and request that the court impose sanctions or other penalties on us for such violations.

In addition, we have not developed Next GEM microfluidic chips for our Single Cell CNV and Linked-Read solutions. Although the Federal Circuit has stayed the injunction with respect to our Single Cell CNV and Linked-Read solutions during the pendency of the appeal, we have not yet released a new version of our instrument that would allow our customers to use these solutions using our GEM microfluidic chip during the pendency of the appeal. Furthermore, it is possible that the injunction could be reinstated with respect to our Single Cell CNV and Linked-Read solutions using our GEM microfluidic chips after the appeal if the Federal Circuit does not rule in our favor.

As of March 31, 2020, we had accrued a total of $73.7 million relating to this matter. Depending upon the ultimate outcome of the litigation with Bio-Rad, we may be required to pay damages, interest and other amounts at a time specified by the court in excess of

these reserves should our accruals prove insufficient to cover the actual damages awarded in the case. While we will continue to evaluate and review our estimate of amounts payable from time to time for any indications that could require us to change our assumptions relating to the amounts already recorded, we cannot assure investors that our estimates and related reserves will be sufficient.

Also in 2015, we filed multiple petitions for *inter partes* review ("IPR") at the Patent Trial and Appeal Board ("PTAB") of the U.S. Patent and Trademark Office ("USPTO") against Raindance and the University of Chicago relating to the patents asserted in the Delaware Action, including U.S. Patent Nos. 7,129,091, 8,658,430, 8,304,193, 8,273,573, 8,329,407, 8,889,083 and 8,822,148. Among these proceedings, all the claims in the '430 patent were determined by the PTAB to be invalid, all the claims in the '573 patent were canceled, and our invalidity challenges to the remaining Bio-Rad patents were unsuccessful. Accordingly, we may be precluded from challenging the '091, '193, '407 and '148 patents at the PTAB in the future as a result of these decisions. Further, because all the claims in the '083 patent survived the IPR challenge, we will be precluded from making certain invalidity challenges to this patent at the PTAB, or in a district court or ITC litigation in the future.

The ITC 1068 Action

On July 31, 2017, Bio-Rad and Lawrence Livermore National Security, LLC filed a complaint against us in the ITC pursuant to Section 337 of the Tariff Act of 1930, alleging that substantially all of our products infringe U.S. Patents Nos. 9,089,844, 9,126,160, 9,500,664, 9,636,682 and 9,649,635 (the "ITC 1068 Action"). Bio-Rad is seeking an exclusion order preventing us from importing the accused microfluidic chips, including (1) our GEM microfluidic chip, (2) our gel bead manufacturing microfluidic chip and (3) our Next GEM microfluidic chip, into the United States and a cease and desist order preventing us from selling such imported chips. An evidentiary hearing for the ITC 1068 Action was held in May of 2018 and the presiding judge issued an Initial Determination in September 2018, finding that our GEM microfluidic chips infringe the '664, '682 and '635 patents but not the '160 patent. The judge further found that our gel bead manufacturing microfluidic chip and Next GEM microfluidic chip do not infringe any claim asserted against them (the "Initial Determination").

On December 18, 2019, the ITC issued its final determination in the ITC 1068 Action (the "Final Determination"). The Final Determination affirmed the Initial Determination that our Next GEM microfluidic chips and gel bead manufacturing microfluidic chips do not infringe any of the claims asserted against them. The Final Determination also affirmed the ruling that our GEM microfluidic chips infringe the '664, '682 and '635 patents but not the '160 patent. The ITC issued (1) a limited exclusion order prohibiting the unlicensed importation of the GEM microfluidic chips into the United States and (2) a cease and desist order preventing us from selling such imported GEM microfluidic chips in the United States. The ITC expressly allowed the importation and sale of the GEM microfluidic chips for use by researchers who were using such chips as of December 18, 2019, and who have a documented need to continue receiving such chips for a specific current ongoing research project for which that need cannot be met by any alternative product. The Final Determination was subject to a 60-day presidential review period. During the presidential review period, we were permitted to continue importation and sales of the GEM microfluidic chips subject to payment of a bond of three (3) percent of the entered value of the accused microfluidic chips. We have appealed the Final Determination to the Federal Circuit. We expect oral arguments to be held around the first quarter of 2021 and a decision around mid-2021.

In order to allow our customers to continue their important research, we have dedicated significant resources to developing the capabilities to manufacture our microfluidic chips in the United States prior to the entry of the exclusion order or cease and desist order which took effect in February 2020. Prior to the second quarter of 2019, all of our microfluidic chips were manufactured outside of the United States. Our United States manufacturing facilities achieved volume production of certain of our GEM microfluidic chips accounting for the majority of our United States consumable revenue beginning in the third quarter of 2019. We cannot assure investors that our U.S. manufacturing facilities can produce our microfluidic chips to the same level of functionality, quality or quantity as our current foreign manufacturer. Moreover, Bio-Rad has also filed other suits against us, including in the U.S. District Court for the Northern District of California, which is discussed separately below. If Bio-Rad succeeds in obtaining an injunction in the district court case or any of the other cases, we could be prohibited from selling our GEM microfluidic chips, regardless of where they are manufactured. If we are prohibited from selling our GEM microfluidic chips, our business, operations, financial results and reputation would be significantly adversely impacted.

Further, although the ITC affirmed that our Next GEM microfluidic chips do not infringe the Bio-Rad patents asserted in this action, we expect Bio-Rad to appeal this non-infringement ruling to the Court of Appeals for the Federal Circuit. We expect the appeal to be completed in approximately mid-2021, and we cannot assure investors that this non-infringement ruling will not be reversed on appeal. We have not yet manufactured our Next GEM microfluidic chips in the United States. If the Federal Circuit reverses the non-infringement finding about our Next GEM microfluidic chips and prohibits us from importing such chips or selling previously imported chips, our business, operations, financial results and reputation would be significantly adversely impacted.

In addition, it is possible that Bio-Rad could, in the future, file enforcement proceedings claiming that we have violated the exclusion order and/or cease and desist order entered in the ITC 1068 Action and requesting that the ITC impose sanctions or other penalties on us for such violations. Our Next GEM microfluidic chips could also become subject to other patent infringement litigations. If we are prohibited from selling our Next GEM microfluidic chips, our business, operations, financial results and reputation would be significantly adversely impacted.

The Northern District of California Action

On July 31, 2017, Bio-Rad and Lawrence Livermore National Security, LLC also filed suit against us in the U.S. District Court for the Northern District of California, alleging that the Company's GEM products infringe U.S. Patents Nos. 9,216,392, 9,347,059 and the five patents asserted in the ITC 1068 Action. The complaint seeks injunctive relief, unspecified monetary damages, costs and attorneys' fees. This litigation has been stayed pending resolution of the Federal Circuit appeal of the ITC 1068 Action. If we are found to infringe these patents or if we are prohibited from selling our products, our business, operations, financial results and reputation could be significantly adversely impacted.

In 2017 and 2018, we filed multiple petitions for IPR at the PTAB against Bio-Rad regarding U.S. Patent Nos. 9,126,160, 9,216,392, 9,649,635, 9,089,844, 9,636,682 and 9,500,664, all of which were also asserted in the ITC 1068 Action or the Northern District of California Case. The PTAB denied institution of all the IPRs, which may preclude us from challenging these patents at the PTAB in the future.

The Germany Action

On February 13, 2018, Bio-Rad filed suit against us in Germany in the Munich Region Court alleging that our Chromium instruments, GEM microfluidic chips and certain accessories infringe German Utility Model No. DE 20 2011 110 979. Bio-Rad seeks unspecified damages and an injunction prohibiting sales of these products in Germany and requiring us to recall these products sold in Germany subsequent to February 11, 2018. An initial hearing was held on November 27, 2018, and a subsequent hearing was held on May 15, 2019. The Court issued a ruling on November 20, 2019. The Court ruled that the Company's GEM microfluidic chips, as well as certain Chromium instruments and accessories used with GEM microfluidic chips, infringed the German Utility Model. The Court issued an injunction with respect to such GEM microfluidic chips, Chromium instruments and accessories used with such systems, prohibiting among other things the sale of these products in Germany and the importation of such products into Germany. The Court found that the Company is obligated to compensate Bio-Rad for unspecified damages and required that these products be recalled from distribution channels in Germany. The Court further found that the Company has to bear the statutory costs of the legal dispute in a minimum amount of at least 61,000 Euros. The Court's ruling did not address the Company's Next GEM products, which were not accused in this action and which constitute substantially all of the Company's sales in Germany. We are currently appealing the Court's ruling. On April 6, 2020, the Munich Higher Regional Court (the "Higher Court") issued a ruling completely staying enforcement of the ruling of the lower Court, including the injunction, subject to the payment of a bond by the Company. The Higher Court found that the lower Court's claim construction was not justifiable and that the facts did not provide a basis for a finding of infringement. On April 16, 2020, we paid a 2.8 million Euro bond to the Higher Court to completely stay enforcement of the ruling. The bond is refundable upon a favorable ruling on the merits by the Higher Court. We expect the Higher Court to rule on the merits around the end of 2020. If we are prohibited from selling our products in Germany, or if our products are recalled in Germany, our business, operations, financial results and reputation could be adversely impacted.

The 2018 Delaware Action

On October 25, 2018, Bio-Rad filed suit against us in the U.S. District Court for the District of Delaware, alleging that substantially all of our Chromium products, including our GEM products and Next GEM products, infringe U.S. Patent Nos. 9,562,837 and 9,896,722. Bio-Rad seeks injunctive relief, unspecified monetary damages, costs and attorneys' fees. Discovery is in progress. A Markman hearing is scheduled in June 2020. A trial is scheduled in September 2021.

In October 2019, we filed four petitions for *inter partes* review ("IPR") challenging the validity of both asserted patents. On April 27, 2020, the Patent Trials and Appeals Board ("PTAB") instituted review of the validity of both of the asserted patents on all four of these petitions. A final written decision is expected from the PTAB in April 2021.

If we are found to infringe these patents or if we are prohibited from selling our products, our business, operations, financial results and reputation could be significantly adversely impacted.

The Massachusetts Action

On September 11, 2019, Bio-Rad filed suit against us in the U.S. District Court for the District of Delaware, alleging that our Next GEM products infringe certain claims of U.S. Patent No. 8,871,444. On November 5, 2019, Bio-Rad amended the complaint to additionally allege that our Next GEM products infringe certain claims of U.S. Patent Nos. 9,919,277 and 10,190,115. The '444 and '277 patents are exclusively licensed by Bio-Rad from Harvard University, which subsequently joined the suit as a party plaintiff. The '444 and '277 patents are projected to expire in 2024.

On December 18, 2019, Bio-Rad dismissed this action in the District of Delaware and refiled it in the U.S. District Court for the District of Massachusetts. The case was assigned to Judge William G. Young. On January 14, 2020, the Court consolidated this case with a separate action, *Bio-Rad Laboratories Inc. et al. v. Stilla Technologies, Inc.*, in which Bio-Rad is asserting the '444 patent (among other patents) against Stilla's droplet digital PCR product. On January 23, 2020, we filed a motion to dismiss the case and to transfer the '115 patent to the Northern District of California, where the related '059 patent is stayed.

On January 24, 2020, we filed antitrust counterclaims against Bio-Rad alleging violations of (a) Section 7 of the Clayton Act, (b) Section 2 of the Sherman Act and (c) California unfair competition laws, for illegally acquiring Raindance and illegally monopolizing or attempting to monopolize markets relating to droplet digital PCR products, droplet single cell products and droplet genetic analysis technology. On February 19, 2020, Bio-Rad moved to dismiss, or alternatively to stay and sever, our antitrust claims.

On February 5, 2020, we filed additional counterclaims against Bio-Rad alleging that Bio-Rad's single cell ATAC-seq products infringe U.S. Patent No. 9,029,085 and 9,850,526 that are exclusively licensed to us from Harvard University. On February 26, 2020, Bio-Rad moved to sever and stay the patent counterclaims. On March 6, 2020, the Court denied the motion to stay and deferred the motion to sever until prior to trial.

On March 25, 2020, the Court held a hearing with respect to (a) our motion to dismiss Bio-Rad's patent claims, (b) our motion to transfer the '115 patent and (c) Bio-Rad's motion to dismiss our antitrust counterclaims. On April 30, 2020, the Court denied our motion to dismiss with respect to Bio-Rad's patent claims and granted our motion to transfer the '115 patent to the Northern District of California. The Court has not yet ruled on Bio-Rad's motion to dismiss our antitrust counterclaims.

On March 23, 2020, Stilla moved for a 90 day stay of the case due to the impact of COVID-19 on Stilla's operations. The Court issued a 90 day stay of the Massachusetts Action, effective March 30, 2020, including a stay of all of Bio-Rad's and our claims and counterclaims. A Markman hearing is expected in September 2020, and a trial with respect to our antitrust counterclaims is expected in July 2021. A trial date for Bio-Rad's patent claims and our patent counterclaims has not yet been set, but may be set for shortly after the antitrust trial.

If we are found to infringe the asserted patents or if we are prohibited from selling our products, our business, operations, financial results and reputation could be significantly adversely impacted.

We are involved in lawsuits to protect, enforce or defend our patents and other intellectual property rights, which are expensive, time consuming and could ultimately be unsuccessful.

On January 11, 2018, we filed a complaint against Bio-Rad at the ITC pursuant to Section 337 of the Tariff Act of 1930 alleging that Bio-Rad infringes our U.S. Patent Nos. 9,644,204, 9,689,024, 9,695,468 and 9,856,530 (the "ITC 1100 Action"). The judge issued an Initial Determination on July 12, 2019 finding that Bio-Rad's ddSEQ products infringe the '024, '468 and '530 patents. The judge also found all of our asserted patents to be valid and rejected Bio-Rad's claim of ownership in all of the asserted patents.

On February 12, 2020, the ITC issued its Final Determination affirming the judge's findings with respect to Bio-Rad's violation of the '024, '468 and '530 patents, including the judge's findings for those patents with respect to infringement, validity and ownership. The ITC issued an exclusion order prohibiting Bio-Rad from importing into the United States infringing microfluidic devices, components thereof and products containing same, including the ddSEQ products. The ITC also issued a cease and desist order preventing Bio-Rad from selling such imported products in the United States. The ITC's remedial orders do not identify any ddSEQ assay as exempted from their potential scope. The ITC orders do not prohibit the importation or sale of microfluidic consumables imported into the U.S. for use by researchers who are using such consumables as of February 12, 2020, and who have a documented need to continue receiving such consumables for a specific current ongoing research project for which that need cannot be met by any alternative product. The Final Determination is subject to a 60-day presidential review period. We expect Bio-Rad to appeal the Final Determination to the Court of Appeals for the Federal Circuit. We expect appeals to be completed in mid-2021, and we cannot guarantee investors that the Final Determination will not be reversed on appeal.

Also in January 2018, we filed a related but separate suit against Bio-Rad in the U.S. District Court for the Northern District of California, alleging that Bio-Rad infringes the '204, '024, '468 and '530 patents. The '204, '024, '468 and '530 patents generally relate to gel bead reagents that are used in our Chromium products, which historically have constituted a significant amount of our current sales. This litigation has been stayed pending resolution of the ITC 1100 Action.

In January 2019, Bio-Rad also filed petitions for IPR of the '024, '468 and '530 patents at the PTAB seeking to invalidate these patents. In July and August of 2019, the PTAB denied institution of all of these Bio-Rad IPR petitions.

In addition to the litigation and legal proceedings discussed above, we are currently and may in the future be a party to other litigation or legal proceedings to determine the scope and validity of our intellectual property, which, if resolved adversely to us, could invalidate or render unenforceable our intellectual property or generally preclude us from restraining, enjoining or otherwise seeking to exclude competitors from commercializing products using technology developed or used by us. For example, our patents and any patents which we in-license may be challenged, narrowed, invalidated or circumvented. If patents we own or license are invalidated or otherwise limited, other companies may be better able to develop products that compete with ours, which would adversely affect our competitive position, business prospects, results of operations and financial condition.

The following are examples of litigation and other adversarial proceedings or disputes that we could become a party to involving our patents or patents licensed to us:

- we have initiated, and in the future may initiate, litigation or other proceedings against third parties to enforce our patent rights;
- third parties have initiated, and in the future may initiate, litigation or other proceedings seeking to invalidate patents owned by or licensed to us or to obtain a declaratory judgment that their product or technology does not infringe our patents or patents licensed to us or that such patents are invalid or unenforceable;
- third parties have initiated, and in the future may initiate, oppositions, IPRs, post grant reviews or reexamination proceedings challenging the validity or scope of our patent rights, requiring us and/or licensors to participate in such proceedings to defend the validity and scope of our patents;
- there are, and in the future may be, more challenges or disputes regarding inventorship or ownership of patents currently identified as being owned by or licensed to us; or
- at our initiation or at the initiation of a third-party, the USPTO may initiate an interference between patents or patent applications owned by or licensed to us and those of our competitors, requiring us and/or licensors to participate in an interference proceeding to determine the priority of invention, which could jeopardize our patent rights.

Furthermore, many of our employees were previously employed at universities or other life sciences companies, including our competitors or potential competitors. We or our employees may be subject to claims that these employees or we have inadvertently or otherwise used or disclosed trade secrets or other proprietary information of their former employers. Although no such claims are currently pending, litigation may be necessary to defend against such claims if they arise in the future. If we fail to successfully defend such claims, in addition to paying monetary damages, we may be subject to injunctive relief and lose valuable intellectual property rights. A loss of key research personnel work product could hamper or prevent our ability to commercialize certain potential products, which could severely harm our business. Even if we are successful in defending against these claims, litigation could result in substantial costs and be a distraction to management.

If we are unable to protect our intellectual property effectively, our business would be harmed.

We rely on patent protection as well as trademark, copyright, trade secret and other intellectual property rights protection and contractual restrictions to protect our proprietary technologies, all of which provide limited protection and may not adequately protect our rights or permit us to gain or keep any competitive advantage. As of April 30, 2020, worldwide we owned or exclusively licensed over 230 issued or allowed patents and 500 pending patent applications. We also license additional patents on a non-exclusive and/or territory restricted basis. We continue to file new patent applications to attempt to obtain further legal protection of the full range of our technologies. If we fail to protect our intellectual property, third parties may be able to compete more effectively against us and we may incur substantial litigation costs in our attempts to recover or restrict the use of our intellectual property.

Our success depends in part on obtaining patent protection for our products and processes, preserving trade secrets, patents, copyrights and trademarks, operating without infringing the proprietary rights of third parties and acquiring licenses for technology or products. We may exercise our business judgment and choose to relinquish rights in trade secrets by filing applications that disclose and describe our inventions and certain trade secrets when we seek patent protection for certain of our products and technology. We cannot assure investors that any of our currently pending or future patent applications will result in issued patents and we cannot predict how long it will take for such patents to be issued. Further, in some cases, we have only filed provisional patent applications on certain aspects of our products and technologies and each of these provisional patent applications is not eligible to become an issued patent until, among other things, we file a non-provisional patent application within 12 months of the filing date of the applicable provisional patent application. Such provisional patents may not become issued patents for a variety of reasons, including our failure to file a non-provisional patent application within the permitted timeframe or a decision that doing so no longer makes business or financial sense. Publications of discoveries in scientific literature often lag behind the actual discoveries and patent applications in the United States and other jurisdictions are typically not published until 18 months after filing or in some cases not at all. Therefore, we cannot know with certainty whether we were the first to make the inventions claimed in our owned or licensed patents or pending patent applications, or that we were the first to file for patent protection of such inventions. As a result, the issuance, scope, validity, enforceability and commercial value of our patent rights are highly uncertain, despite the importance of seeking patent protection in our industry.

Further, we cannot assure investors that other parties will not challenge any patents issued to us or that courts or regulatory agencies will hold our patents to be valid or enforceable. We cannot guarantee investors that we will be successful in defending challenges made against our patents and patent applications, even if we spend significant resources defending such challenges. Any successful third-party challenge to our patents could result in the unenforceability or invalidity of such patents and could deprive us of the ability to prevent others from using the technologies claimed in such issued patents.

Changes in either the patent laws or in interpretations of patent laws in the United States or other countries may diminish the value of our intellectual property. We cannot predict the breadth of claims that may be allowed or enforced in our patents or in third-party patents.

In addition to pursuing patents on our technology, we take steps to protect our intellectual property and proprietary technology by entering into confidentiality agreements and intellectual property assignment agreements with our employees, consultants, corporate partners and, when needed, our advisors. 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. 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 illegally obtained and was using our trade secrets, it would be expensive and time consuming and the outcome would be unpredictable.

We also seek trademark registration to protect key trademarks such as our 10X, CHROMIUM and VISIUM marks, however, we have not yet registered all of our trademarks in all of our current and potential markets. If we apply to register these trademarks, our applications may not be allowed for registration and our registered trademarks may not be maintained or enforced. In addition, opposition or cancellation proceedings may be filed against our trademark applications and registrations and our trademarks may not survive such proceedings. If we do not secure registrations for our trademarks, we may encounter more difficulty in enforcing them against third parties than we otherwise would.

With respect to all categories of intellectual property protection, our competitors could purchase our products and attempt to replicate some or all of the competitive advantages we derive from our development efforts, willfully infringe our intellectual property rights, design around our protected technology or develop their own competitive technologies that fall outside of our intellectual property rights. In addition, competitors may develop their own versions of our products in countries where we did not apply for patents, where our patents have not issued or where our intellectual property rights are not recognized and compete with us in those countries and markets.

The laws of some countries do not protect intellectual property rights to the same extent as the laws of the United States and many companies have encountered significant problems in protecting and defending such rights in foreign jurisdictions. The legal systems of certain countries, particularly certain developing countries, do not favor the enforcement of patents and other intellectual property protection, particularly those relating to biotechnology, which could make it difficult for us to stop the infringement of our patents. The legal systems in certain countries may also favor state-sponsored or companies headquartered in particular jurisdictions over our first-in-time patents and other intellectual property protection. We are aware of incidents where such entities have stolen the intellectual property of domestic companies in order to create competing products and we believe we may face such circumstances ourselves in the future. In the Office of the United States Trade Representative (“USTR”) annual “Special 301” Report released in 2019, the adequacy and effectiveness of intellectual property protection in a number of foreign countries were analyzed. A number of countries in which both we and our distributors operate are identified in the report as being on the Priority Watch List. In China, for instance, the USTR noted a range of IP-related concerns, including a need to “strengthen IP protection and enforcement, including as to trade secret theft, online piracy and counterfeiting, the high-volume manufacture and export of counterfeit goods, and impediments to pharmaceutical innovation.” The absence of harmonized intellectual property protection laws and effective enforcement makes it difficult to ensure consistent respect for patent, trade secret, and other intellectual property rights on a worldwide basis. As a result, it is possible that we will not be able to enforce our rights against third parties that misappropriate our proprietary technology in those countries.

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

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. Specifically, these decisions stand for the proposition that patent claims that recite laws of nature (for example, the relationships between gene expression levels and the likelihood of risk of recurrence of cancer) 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, in December 2014 the USPTO, published revised guidelines for patent examiners to apply when examining process claims for patent eligibility. This guidance was updated by the USPTO in July 2015 and additional illustrative examples provided in May 2016. The USPTO provided additional guidance on examination procedures pertaining to subject matter eligibility in April 2018 and June 2018. The guidance indicates that claims directed to a law of nature, a natural phenomenon or an abstract idea that do not meet the eligibility requirements should be rejected as non-statutory, patent ineligible subject matter; however, method of treatment claims that practically apply natural relationships should be considered patent eligible. We cannot assure you 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. 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 and validity of patents within the life sciences and any such changes could have a negative impact on our business.

Risks related to ownership of our Class A common stock

The market price of our Class A common stock may be volatile, which could result in substantial losses for investors.

The trading price of our Class A common stock has been and may continue to be highly volatile and could be subject to wide fluctuations in response to various factors, some of which are beyond our control. In addition to the factors discussed in this "Risk Factors" section and elsewhere in this report, these factors include:

- the timing of our launch of future products and degree to which the launch and commercialization thereof meets the expectations of securities analysts and investors;
- the outcomes of and related rulings in the litigation and administrative proceedings in which we are currently or may in the future become involved;
- the timing and rate of market acceptance of our Next GEM microfluidic chips, the successful transition of our customers to our Next GEM microfluidic chips and our ability to make our Next GEM microfluidic chip work with all of our solutions;
- 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;
- the success of existing or new competitive businesses or technologies;
- announcements about new research programs or products of our competitors;
- developments or disputes concerning patent applications, issued 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 sector generally, or the genomics sector specifically;
- investor perceptions of us or our industry;
- the level of expenses related to any of our research and development programs or products;
- actual or anticipated changes in our estimates as to our financial results or development timelines, variations in our financial results or those of companies that are perceived to be similar to us or changes in estimates or recommendations by securities analysts, if any, that cover our Class A 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;
- stock-based compensation expense under applicable accounting standards;
- sales of our Class A common stock or Class B common stock by us, our insiders or other stockholders;
- general economic, industry and market conditions;
- natural disasters, infectious diseases, epidemics or pandemics including COVID-19, outbreaks or major catastrophic events; and
- the other factors described in this "*Risk Factors*" section.

In recent years, stock markets in general, and the market for life sciences technology companies in particular (including companies in the genomics, biotechnology, diagnostics and related sectors), have experienced significant price and volume fluctuations that have often been unrelated or disproportionate to changes in the operating performance of the companies whose stock is experiencing those price and volume fluctuations. Broad market and industry factors may seriously affect the market price of our Class A common stock, regardless of our actual operating performance. In the past, when the market price of a stock has been volatile, securities class action litigation has often been brought against that company. Because of the potential volatility of our stock price, we may become the target of securities litigation in the future. Securities litigation could result in substantial costs and divert management's attention and resources from our business.

Sales of a substantial number of shares of our Class A common stock by our existing stockholders could cause the price of our Class A common stock to decline.

Sales of a substantial number of shares of our Class A common stock in the public market could occur at any time. Moreover, certain holders of our common stock have rights, subject to conditions, to require us to file registration statements with the SEC covering their shares or to include their shares in registration statements that we may file for ourselves or other stockholders. We have also registered

all shares of Class A common stock that we may issue under our equity compensation and employee stock purchase plans. These shares can be freely sold in the public market upon issuance and, if applicable, vesting, subject to our insider trading policy, where applicable, and applicable securities laws including volume limitations applicable to affiliates under Rule 144 and Rule 701. Sales of Class A common stock in the public market or pursuant to registration rights may make it more difficult for us to sell equity securities in the future at a time and at a price that we deem appropriate. These sales also could cause the trading price of our Class A common stock to fall and make it more difficult for you to sell shares of our Class A common stock.

Raising additional capital may cause dilution to our existing stockholders or restrict our operations.

We anticipate that we will seek additional capital through a combination of public and private equity offerings, debt financings, strategic partnerships and alliances and licensing arrangements in the future to fund our operations. We, and indirectly, our stockholders, will bear the cost of issuing and servicing such securities. Because our decision to issue debt or equity securities in any future offering will depend on market conditions and other factors beyond our control, we cannot predict or estimate the amount, timing or nature of any future offerings. Our decision to issue debt or equity securities will also depend on contractual, legal and other restrictions that may limit our ability to raise additional capital. For example, the terms of our Loan and Security Agreement prohibit, subject to certain exceptions, our ability to incur indebtedness. To the extent that we raise additional capital through the sale of equity or debt securities, your ownership interest will be diluted and the terms may include liquidation or other preferences that adversely affect your rights as a stockholder. The incurrence of indebtedness would result in fixed payment obligations and could involve restrictive covenants, such as limitations on our ability to incur additional debt, limitations on our ability to acquire, sell or license intellectual property rights and other operating restrictions that could adversely impact our ability to conduct our business. Certain of the foregoing transactions may require us to obtain stockholder approval, which we may not be able to obtain.

The multi-class structure of our common stock has the effect of concentrating voting control with those stockholders who held our capital stock prior to the completion of our IPO, including our co-founders, and may depress the trading price of our Class A common stock.

Our Class A common stock has one vote per share and our Class B common stock has ten votes per share, except as otherwise required by law. Because of the ten-to-one voting ratio between our Class B common stock and Class A common stock, the holders of our Class B common stock collectively control a majority of the combined voting power of our common stock and therefore are able to control all matters submitted to our stockholders for approval. This concentrated control is expected to limit or preclude your ability to influence corporate matters for the foreseeable future, including the election of directors, amendments of our organizational documents and any merger, consolidation, sale of all or substantially all of our assets or other major corporate transaction requiring stockholder approval. In addition, this may prevent or discourage unsolicited acquisition proposals or offers for our capital stock that you may feel are in your best interest as one of our stockholders.

Future transfers by holders of Class B common stock will generally result in those shares converting to Class A common stock, subject to limited exceptions, such as certain transfers effected for estate planning purposes where sole dispositive power and exclusive voting control with respect to the shares of Class B common stock is retained by the transferring holder and transfers between our co-founders. In addition, each outstanding share of Class B common stock held by a stockholder who is a natural person, or held by the permitted entities of such stockholder (as described in our amended and restated certificate of incorporation), will convert automatically into one share of Class A common stock upon the death of such natural person. In the event of the death or permanent and total disability of a co-founder, shares of Class B common stock held by such co-founder or his permitted entities will convert to Class A common stock, provided that the conversion will be deferred for nine months, or up to 18 months if approved by a majority of our independent directors, following his death or permanent and total disability. Transfers between our co-founders are permitted transfers and will not result in conversion of the shares of Class B common stock that are transferred. The conversion of Class B common stock to Class A common stock has had, and will continue to have, the effect, over time, of increasing the relative voting power of those individual holders of Class B common stock who retain their shares in the long term. To date, such conversions have had the effect of increasing the relative voting power of our co-founders and certain of our directors and will continue to have such an effect if our co-founders and such directors retain their shares in the long term.

In addition, in July 2017, FTSE Russell and Standard & Poor's announced that they would cease to allow most newly public companies utilizing dual or multi-class capital structures to be included in their indices. Affected indices include the Russell 2000 and the S&P 500, S&P MidCap 400 and S&P SmallCap 600, which together make up the S&P Composite 1500. Under the announced policies, our multi-class capital structure makes us ineligible for inclusion in any of these indices, and as a result, mutual funds, exchange-traded funds and other investment vehicles that attempt to passively track these indices will not be investing in our stock. It is as of yet unclear what effect, if any, these policies have had and will have on the valuations of publicly traded companies excluded from the indices, but it is possible that these policies may depress valuations of excluded companies as compared to those of other similar companies that are included.

We are an "emerging growth company" and the reduced disclosure requirements applicable to emerging growth companies may make our Class A common stock less attractive to investors.

We are an "emerging growth company," as defined in the JOBS Act. For so long as we remain an emerging growth company, we are permitted by SEC rules and plan to rely on exemptions from certain disclosure requirements that are applicable to other SEC-

registered public companies that are not emerging growth companies. These exemptions include not being required to comply with the auditor attestation requirements of Section 404 of the SOX, 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, reduced disclosure obligations regarding executive compensation and exemptions from the requirements of holding a nonbinding advisory vote on executive compensation and stockholder approval of any golden parachute payments not previously approved. As a result, the information we provide stockholders will be different than the information that is available with respect to other public companies. We cannot predict whether investors will find our Class A common stock less attractive if we rely on these exemptions. If some investors find our Class A common stock less attractive as a result, there may be a less active trading market for our Class A common stock and our stock price may be more volatile.

In addition, 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. This allows an emerging growth company to delay the adoption of certain accounting standards until those standards would otherwise apply to private companies. We have elected to avail ourselves of this exemption from new or revised accounting standards and, therefore, we will not be subject to the same new or revised accounting standards as other public companies that are not emerging growth companies. As a result, our financial statements may not be comparable to companies that comply with new or revised accounting pronouncements as of public company effective dates.

We have incurred and will continue to incur increased costs as a result of operating as a public company, and our management will be required to devote substantial time to new compliance initiatives and corporate governance practices, including maintaining an effective system of internal controls over financial reporting.

As a public company, and particularly after we are no longer an emerging growth company, we have incurred and will continue to incur significant legal, accounting and other expenses that we did not incur as a private company. The Dodd-Frank Wall Street Reform and Consumer Protection Act, SOX, the listing requirements of Nasdaq and other applicable federal and Delaware rules and regulations impose various requirements on public companies, including establishment and maintenance of effective disclosure and financial controls and corporate governance practices. We expect that we will need to hire additional accounting, finance and other personnel in connection with our being a public company and our management and other personnel will need to devote a substantial amount of time towards maintaining compliance with these requirements. These requirements will increase our legal and financial compliance costs and will make some activities more time-consuming and costly.

The rules and regulations applicable to us as a public company and recent trends in the insurance market have made it more expensive for us to obtain director and officer liability insurance. We have currently obtained only director and officer liability coverage (commonly referred to as "Side A" coverage). This means that while our directors and officers have direct insurance coverage for acts which the company is not legally required or permitted to indemnify them, the company itself does not have coverage for amounts incurred in defending, among other things, stockholder derivative or securities class action lawsuits or in the event of certain investigative actions, for amounts it must pay as a result of such suits or amounts it must pay to indemnify our directors or officers. We are in essence self-insuring for these costs. Any costs incurred in connection with such litigation could have a material adverse effect on our business, financial condition and results of operations.

In September 2018, California enacted a law that requires publicly held companies headquartered in California to have at least one female director by the end of 2019 and at least three by the end of 2021, depending on the size of the board. The law would impose financial penalties for failure to comply. We are currently in compliance with the requirements of the law but we may incur costs associated with complying with the law in future years, including costs associated with expanding our board of directors or identifying qualified candidates for appointment to our board of directors, or financial penalties or harm to our brand and reputation if we fail to comply. We cannot predict or estimate the amount of additional costs we may incur or the timing of such costs.

Pursuant to SOX Section 404, we expect that we will be required to furnish a report by our management on our internal control over financial reporting beginning with the filing of our Annual Report on Form 10-K for the year ended December 31, 2020. However, while we remain an emerging growth company, we will not be required to include an attestation report on internal control over financial reporting issued by our independent registered public accounting firm. To achieve compliance with SOX 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, potentially engage outside consultants, 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. Despite our efforts, there is a risk that we will not be able to conclude, within the prescribed timeframe or at all, that our internal control over financial reporting is effective as required by SOX Section 404. If we identify one or more material weaknesses, it could result in an adverse reaction in the financial markets due to a loss of confidence in the reliability of our financial statements.

As a public company, we are required to file with the SEC annual and quarterly information and other reports that are specified in Section 13 of the Exchange Act. We are also required to ensure that we have the ability to prepare financial statements that are fully compliant with all SEC reporting requirements on a timely basis. We are also subject to other reporting and corporate governance

requirements, including the requirements of Nasdaq and certain provisions of SOX and the regulations promulgated thereunder, which impose significant compliance obligations upon us. As a public company, we have to and will continue to, among other things:

- prepare and distribute periodic public reports and other stockholder communications in compliance with our obligations under the federal securities laws and applicable Nasdaq rules;
- create or expand the roles and duties of our board of directors and committees of the board;
- institute more comprehensive financial reporting and disclosure compliance functions;
- supplement our internal accounting, auditing and reporting function, including hiring additional staff with expertise in accounting and financial reporting for a public company;
- enhance and formalize closing procedures at the end of our accounting periods;
- enhance our internal audit and tax functions;
- enhance our investor relations function;
- establish new internal policies, including those relating to disclosure controls and procedures; and
- involve and retain to a greater degree outside counsel and accountants in the activities listed above.

We may not be successful in implementing these requirements and the significant commitment of resources required for implementing them could adversely affect our business, financial condition and results of operations. In addition, if we fail to implement the requirements with respect to our internal accounting and audit functions, our ability to report our results of operations on a timely and accurate basis could be impaired and we could suffer adverse regulatory consequences or violate the Nasdaq rules. There could also be a negative reaction in the financial markets due to a loss of investor confidence in us and the reliability of our financial statements.

The requirements of being a public company require a significant commitment of resources and management oversight that has increased and may continue to increase our costs and might place a strain on our systems and resources. As a result, our management's attention might be diverted from other business concerns. If we fail to maintain an effective internal control environment or to comply with the numerous legal and regulatory requirements imposed on public companies, we could make material errors in, and be required to restate, our financial statements. Any such restatement could result in a loss of public confidence in the reliability of our financial statements and sanctions imposed on us by the SEC. In addition, the rules and regulations imposed on public companies are often subject to varying interpretations and, as a result, their application in practice may evolve over time as new guidance is provided by regulatory and governing bodies. This could result in continuing uncertainty regarding compliance matters and higher costs necessitated by ongoing revisions to disclosure and governance practices.

Delaware law and provisions in our amended and restated certificate of incorporation and amended and restated bylaws might discourage, delay or prevent a change in control of our company or changes in our management and, therefore, depress the trading price of our Class A 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 restated certificate of incorporation and restated bylaws contain provisions that may make the acquisition of our company more difficult, including the following:

- any transaction that would result in a change in control of our company requires the approval of a majority of our outstanding Class B common stock voting as a separate class;
- our multi-class common stock structure provides our holders of Class B common stock with the ability to significantly influence the outcome of matters requiring stockholder approval, even if they own significantly less than a majority of the shares of our outstanding Class A common stock and Class B common stock;
- our board of directors is classified into three classes of directors with staggered three-year terms and directors are only able to be removed from office for cause by the affirmative vote of holders of at least two-thirds of the voting power of our then outstanding capital stock;
- certain amendments to our amended and restated certificate of incorporation require the approval of stockholders holding two-thirds of the voting power of our then outstanding capital stock;
- any stockholder-proposed amendment to our amended and restated bylaws requires the approval of stockholders holding two-thirds of the voting power of our then outstanding capital stock;
- our stockholders are only able to take action at a meeting of stockholders and are not able to take action by written consent for any matter;

- our stockholders are able to act by written consent only if the action is first recommended or approved by the board of directors;
- vacancies on our board of directors are able to be filled only by our board of directors and not by stockholders;
- only our chairman of the board of directors, chief executive officer or a majority of the board of directors are authorized to call a special meeting of stockholders;
- certain litigation against us can only be brought in Delaware;
- our restated certificate of incorporation authorizes undesignated preferred stock, the terms of which may be established and shares of which may be issued, without the approval of the holders of our capital stock; and
- advance notice procedures apply for stockholders to nominate candidates for election as directors or to bring matters before an annual meeting of stockholders.

These anti-takeover defenses could discourage, delay or prevent a transaction involving a change in control of our company. These provisions could also discourage proxy contests and make it more difficult for stockholders to elect directors of their choosing and to cause us to take other corporate actions they desire, any of which, under certain circumstances, could limit the opportunity for our stockholders to receive a premium for their shares of our capital stock and could also affect the price that some investors are willing to pay for our Class A common stock.

Our amended and restated bylaws designate a state or federal court located within the State of Delaware as the exclusive forum for substantially all disputes between us and our stockholders, which could limit our stockholders' ability to choose the judicial forum for disputes with us or our directors, officers or employees.

Our amended and restated bylaws provide that, unless we consent in writing to the selection of an alternative forum, (i) any derivative action or proceeding brought on our behalf, (ii) any action asserting a claim of breach of a fiduciary duty owed by any of our directors, officers, stockholders or employees to us or our stockholders, (iii) any action asserting a claim arising pursuant to any provision of the Delaware General Corporation Law, our certificate of incorporation or our amended and restated bylaws or (iv) any action asserting a claim governed by the internal affairs doctrine of the law of the State of Delaware shall, to the fullest extent permitted by law, be exclusively brought in the Court of Chancery of the State of Delaware or, if such court does not have subject matter jurisdiction thereof, the federal district court of the State of Delaware. Our amended and restated bylaws further provide that, unless we consent in writing to the selection of an alternative forum, the federal district courts of the United States are the exclusive forum for the resolution of any claims under the Securities Act or any successor thereto. Nothing in our amended and restated bylaws precludes stockholders that assert claims under the Exchange Act, or any successor thereto, from bringing such claims in state or federal court, subject to applicable law. Any person or entity purchasing or otherwise acquiring or holding any interest in any of our securities shall be deemed to have notice of and consented to the foregoing forum selection provisions. These exclusive-forum provisions may limit a stockholder's ability to bring a claim in a judicial forum of such stockholder's choosing for disputes with us or our directors, officers or other employees, which may discourage lawsuits against us and our directors, officers and other employees. If a court were to find the exclusive-forum provisions in our amended and restated bylaws to be inapplicable or unenforceable in an action, we may incur additional costs associated with resolving the dispute in other jurisdictions, which could harm our results of operations.

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

Sales of Unregistered Securities

None during the three months ended March 31, 2020.

Use of Proceeds

On September 11, 2019, our Registration Statement on Form S-1 (File No. 333-233361) relating to the IPO of our Class A common stock was declared effective by the SEC. Pursuant to such Registration Statement, we sold an aggregate of 11,500,000 shares of our common stock, including 1,500,000 shares sold pursuant to the underwriters' full exercise of their option to purchase additional shares, at a price of $39.00 per share. Including the underwriters' option exercise, the aggregate gross proceeds from the offering were $448.5 million, before deducting underwriting discounts and commissions and estimated offering expenses. J.P. Morgan LLC, Goldman Sachs & Co. LLC and BofA Merrill Lynch acted as lead joint book-running managers for the offering. Cowen acted as lead manager for the offering. On September 16, 2019, we closed the sale of such shares, resulting in aggregate cash proceeds to us of approximately $410.8 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 expected use of the net proceeds from our IPO, as described in our Annual Report on Form 10-K filed with the SEC on February 27, 2020.

Item 3. Defaults Upon Senior Securities.

Not applicable.

Item 4. Mine Safety Disclosures.

Not applicable.

Item 5. Other Information.

None.

Item 6. Exhibits.

Exhibit Number	Exhibit Title	Incorporated by Reference			
		Form	File No.	Exhibit	Filing Date
3.1	Amended and Restated Certificate of Incorporation of the Registrant.	8-K	001-39035	3.1	9/16/2019
3.2	Amended and Restated Bylaws of the Registrant.	8-K	001-39035	3.1	3/26/2020
4.1	Amended and Restated Investors' Rights Agreement, date as of October 18, 2018, by and among the Registrant and the other parties thereto.	S-1/A	333-233361	4.1	8/19/2019
4.2	Form of Stock Certificate for Class A common stock of the Registrant.	S-1	333-233361	4.2	8/19/2019
10.1	Second Amendment to Second Amended and Restated Loan and Security Agreement, dated September 9, 2019, by and between the Registrant and Silicon Valley Bank.	S-1/A	333-233361	10.3	9/10/2019
10.2+	Amended and Restated 2012 Stock Plan and forms of award agreements thereunder.	S-1/A	333-233361	10.10	9/3/2019
10.3+	2019 Omnibus Incentive Plan and forms of award agreements thereunder.	S-1/A	333-233361	10.11	9/3/2019
10.4+	2019 Employee Stock Purchase Plan and forms of agreements thereunder.	10-Q	001-39035	10.04	11/12/2019
10.5+	Non-Employee Director Compensation Policy.	S-1	333-233361	10.13	8/19/2019
10.6+	Form of Indemnification Agreement between the Registrant and each of its directors and executive officers.	S-1/A	333-233361	10.17	9/3/2019
31.1	Certification of Principal Executive Officer Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.				
31.2	Certification of Principal Financial and Accounting Officer Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.				
32.1*	Certification of Principal Executive Officer Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.				

32.2*	Certification of Principal Financial and Accounting Officer Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
101.INS	XBRL Instance Document.
101.SCH	XBRL Taxonomy Extension Schema Document.
101.CAL	XBRL Taxonomy Extension Calculation Linkbase Document.
101.DEF	XBRL Taxonomy Extension Definition Linkbase Document.
101.LAB	XBRL Taxonomy Extension Label Linkbase Document.
101.PRE	XBRL Taxonomy Extension Presentation Linkbase Document.

+ Management contract or compensatory plan or arrangement.
* This certification is deemed not filed for purposes of Section 18 of the Exchange Act, or otherwise subject to the liability of that section, nor shall it be deemed incorporated by reference into any filing under the Securities Act or the Exchange Act.

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Signatures

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned thereunto duly authorized.

10x Genomics, Inc.

Date: May 12, 2020

By: /s/ Serge Saxonov
Serge Saxonov
Chief Executive Officer and Director
(Principal Executive Officer)

Date: May 12, 2020

By: /s/ Justin McAnear
Justin McAnear
Chief Financial Officer
(Principal Financial and Accounting Officer)

Exhibit 31.1

CERTIFICATION OF PERIODIC REPORT UNDER SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

I, Serge Saxonov, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of 10x Genomics, 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 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: May 12, 2020

By: /s/ Serge Saxonov
Serge Saxonov
Chief Executive Officer and Director
(Principal Executive Officer)

Exhibit 31.2

CERTIFICATION OF PERIODIC REPORT UNDER SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

I, Justin McAnear, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of 10x Genomics, 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 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: May 12, 2020

By: /s/ Justin McAnear
Justin McAnear
Chief Financial Officer
(Principal Financial and Accounting Officer)

Exhibit 32.1

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

Pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, I, Serge Saxonov, the Chief Executive Officer of 10x Genomics, Inc. (the "Company"), hereby certify, that, to my knowledge:

1. The Quarterly Report on Form 10-Q for the period ended March 31, 2020 (the "Report") of the Company fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

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

Date: May 12, 2020

By: /s/ Serge Saxonov
Serge Saxonov
Chief Executive Officer and Director
(Principal Executive Officer)

Exhibit 32.2

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

Pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, I, Justin McAnear, the Chief Financial Officer of 10x Genomics, Inc. (the "Company"), hereby certify, that, to my knowledge:

1. The Quarterly Report on Form 10-Q for the period ended March 31, 2020 (the "Report") of the Company fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

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

Date: May 12, 2020

By: /s/ Justin McAnear
Justin McAnear
Chief Financial Officer
(Principal Financial and Accounting Officer)