

FLUIDIGM CORP
Form 424B5
December 11, 2018
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Filed Pursuant to Rule 424(b)(5)
Registration No. 333-216542

The information in this preliminary prospectus supplement is not complete and may be changed. A registration statement relating to these securities has been filed with the Securities and Exchange Commission and is effective. This preliminary prospectus supplement and the accompanying prospectus are not an offer to sell these securities and they are not soliciting an offer to buy these securities in any jurisdiction where the offer or sale is not permitted.

SUBJECT TO COMPLETION, DATED DECEMBER 11, 2018

PRELIMINARY PROSPECTUS SUPPLEMENT

(To the Prospectus dated May 2, 2017)

Shares

Common Stock

We are offering _____ shares of our common stock.

Our common stock is listed on the NASDAQ Global Select Market under the symbol FLDM. The last reported sale price of our common stock on December 10, 2018 was \$7.68 per share.

Our business and an investment in our common stock involves significant risks. See **Risk Factors** beginning on page S-6 of this prospectus supplement.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or passed upon the adequacy or accuracy of this prospectus supplement or the accompanying prospectus. Any representation to the contrary is a criminal offense.

	Per Share	Total
Public offering price	\$	\$
Underwriting discounts and commissions		
Proceeds, before expenses, to us		

The underwriter has a 30-day option to purchase up to _____ additional shares of common stock from us at the public offering price, less underwriting discounts and commissions.

The underwriters expect to deliver the shares against payment on or about December , 2018.

Joint Book-Running Managers

Piper Jaffray

Prospectus Supplement dated December , 2018.

UBS Investment Bank

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ABOUT THIS PROSPECTUS SUPPLEMENT

This document is in two parts. The first part is the prospectus supplement, including the documents incorporated by reference, which describes the specific terms of this offering. The second part, the accompanying prospectus, including the documents incorporated by reference, provides more general information. Generally, when we refer to this prospectus, we are referring to both parts of this document combined. Before you invest, you should carefully read this prospectus supplement, the accompanying prospectus, all information incorporated by reference herein and therein, as well as the additional information described under “Where You Can Find Additional Information” on page S-51 of this prospectus supplement. These documents contain information you should consider when making your investment decision. This prospectus supplement may add, update or change information contained in the accompanying prospectus. To the extent that any statement that we make in this prospectus supplement is inconsistent with statements made in the accompanying prospectus or any documents incorporated by reference therein, the statements made in this prospectus supplement will be deemed to modify or supersede those made in the accompanying prospectus and such documents incorporated by reference therein.

We have not, and the underwriters have not, authorized any other person to provide you with any information that is different than that contained or incorporated by reference in this prospectus supplement, the accompanying prospectus and any related free writing prospectus that we provide you in connection with the offering. If anyone provides you with different or inconsistent information, you should not rely on it. We are offering to sell, and seeking offers to buy, shares of our common stock only in jurisdictions where offers and sales are permitted. The distribution of this prospectus supplement and the offering of the common stock in certain jurisdictions may be restricted by law. Persons outside the United States who come into possession of this prospectus supplement must inform themselves about, and observe any restrictions relating to, the offering of the common stock and the distribution of this prospectus supplement outside the United States. This prospectus supplement does not constitute, and may not be used in connection with, an offer to sell, or a solicitation of an offer to buy, any securities offered by this prospectus supplement by any person in any jurisdiction in which it is unlawful for such person to make such an offer or solicitation.

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PROSPECTUS SUPPLEMENT SUMMARY

This summary highlights selected information about us, this offering and information appearing elsewhere in this prospectus supplement, in the accompanying prospectus and in the documents we incorporate by reference. This summary is not complete and does not contain all the information you should consider before investing in our common stock pursuant to this prospectus supplement and the accompanying prospectus. Before making an investment decision, to fully understand this offering and its consequences to you, you should carefully read this entire prospectus supplement and the accompanying prospectus, including Risk Factors beginning on page S-6 of this prospectus supplement, the financial statements, and related notes, and the other information that we incorporated by reference herein, including our Annual Report on Form 10-K for the year ended December 31, 2017, our Quarterly Reports on Form 10-Q and our other filings with the SEC that we file from time to time. Unless otherwise indicated or the context otherwise requires, all references in this prospectus supplement to Fluidigm, the Company, we, us, and our mean Fluidigm Corporation and its subsidiaries.

Fluidigm Corporation

Overview

We create, manufacture, and market innovative technologies and tools for life sciences research. We sell instruments and consumables, including integrated fluidic circuits, or IFCs, assays and reagents, to academic institutions, clinical research laboratories, and biopharmaceutical, biotechnology, and agricultural biotechnology, or Ag-Bio, companies and contract research organizations, or CROs. Our technologies and tools are directed at the analysis of deoxyribonucleic acid, or DNA, ribonucleic acid, or RNA, and proteins in a variety of different sample types, from individual cells to bulk tissue.

We were a pioneer in the application of microfluidics to enable high-throughput and highly-multiplexed polymerase chain reactions, or PCR, for genetic analysis, as well as a field known as single-cell genomics, in which the genetic composition of individual cells is assayed. In February 2014, we purchased DVS Sciences, Inc., whose mass cytometry system enables the highly-multiplexed analysis of cellular surface and intracellular proteins in both blood and tissue.

Researchers have successfully employed our products to help achieve breakthroughs in a variety of fields, including single-cell gene and protein expression, gene regulation, genetic variation, cellular function and applied genetics. These breakthroughs include using our systems to help detect life-threatening mutations in cancer cells, discover cancer associated biomarkers, analyze the genetic composition of individual stem cells and assess the quality of agricultural products, such as seeds or livestock.

We distribute our systems through our direct sales force and support organizations located in North America, Europe, and Asia-Pacific, and through distributors or sales agents in several European, Latin American, Middle Eastern, and Asia-Pacific countries. Our manufacturing operations are located in Singapore, Canada, and South San Francisco, California. Our facility in Singapore manufactures our genomics instruments, several of which are assembled at facilities of our contract manufacturers in Singapore, with testing and calibration of the assembled products performed at our Singapore facility. All our IFCs for commercial sale and some IFCs for our research and development purposes also are fabricated at our Singapore facility. Our mass

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cytometry instruments for commercial sale, as well as for internal research and development purposes, are manufactured at our facility in Canada. We also manufacture assays and reagents at our facilities in the United States.

Corporate Information

We were incorporated in California in May 1999 as Mycometrix Corporation, changed our name to Fluidigm Corporation in April 2001 and reincorporated in Delaware in July 2007. Our principal executive offices are located at 7000 Shoreline Court, Suite 100, South San Francisco, California 94080.

Our telephone number is (650) 266-6000. We maintain an Internet website at www.fluidigm.com. We have not incorporated the information on our website by reference into this prospectus supplement, and you should not consider it to be a part of this prospectus supplement.

Fluidigm, the Fluidigm logo, Access Array, Advanta, Biomark, C1, Callisto, CyTOF, Delta Gene, EP Helios, Hyperion, Imaging Mass Cytometry, Juno, Polaris, and SNP Type are our trademarks or registered trademarks. Other service marks, trademarks and trade names appearing or incorporated by reference into this prospectus supplement and the accompanying prospectus are the property of their respective owners.

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The Offering

Common stock offered by us	shares
Common stock to be outstanding after this offering	shares
Option to purchase additional shares	We have granted the underwriters a 30-day option to purchase up to additional shares of common stock from us at the public offering price, less underwriting discounts and commissions.
Use of Proceeds	We intend to use the net proceeds from this offering for general corporate purposes, including working capital, capital expenditures, and continued research and development with respect to products and technologies. We may also use a portion of the net proceeds of this offering to fund possible investments in or acquisitions of complementary businesses, products, or technologies. As of the date of this prospectus supplement, we have no agreements or commitments to complete any such transaction. See Use of Proceeds on page S-39.
Risk Factors	See Risk Factors beginning on page S-6 of this prospectus supplement for a discussion of factors that you should read and consider before investing in our securities.
Nasdaq Global Select Market symbol	FLDM
The number of shares of our common stock to be outstanding following this offering is based on 39,315,785 shares of our common stock outstanding as of September 30, 2018. This number of shares excludes the following:	

2,352,286 shares of common stock issuable upon exercise of options outstanding as of September 30, 2018, at a weighted average exercise price of \$7.6554 per share;

2,023,215 shares of common stock issuable upon the vesting of restricted stock units outstanding as of September 30, 2018;

4,805,858 shares of common stock reserved for future issuance under stock-based compensation plans, including 2,366,657 shares of common stock reserved for issuance under our 2011 Equity Incentive Plan and any future automatic increase in shares reserved for issuance under such plan, 1,607,968 shares of common stock reserved for issuance under our 2017 Inducement Award Plan, and 831,233 shares of common stock reserved for future issuance under our 2017 Employee Stock Purchase Plan; and

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shares of common stock issuable upon conversion of our outstanding convertible notes.
Except as otherwise indicated, all information in this prospectus supplement assumes no exercise by the underwriters of their option to acquire additional shares of our common stock.

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We have derived the summary consolidated statement of operations data for the years ended December 31, 2015, December 31, 2016 and December 31, 2017 from our audited consolidated financial statements incorporated by reference in this prospectus supplement and the accompanying prospectus. We have derived the summary consolidated statement of operations data for the nine months ended September 30, 2017 and 2018, and the consolidated balance sheet data as of September 30, 2018 from our unaudited condensed consolidated financial statements incorporated by reference in this prospectus supplement and the accompanying prospectus. Our historical results are not necessarily indicative of the results that may be expected in the future, and results from interim periods are not necessarily indicative of results that may be expected for the entire year. The following summary consolidated financial data should be read in conjunction with Management's Discussion and Analysis of Financial Condition and Results of Operations and our consolidated financial statements and related notes incorporated by reference in this prospectus supplement and the accompanying prospectus.

	Year Ended December 31,			Nine Months Ended	
	2015	2016	2017	2017	2018
	(In thousands, except per share data)				
Revenue:					
Product revenue	\$ 102,140	\$ 89,003	\$ 84,399	\$ 61,383	\$ 66,496
Service Revenue	12,315	15,205	17,348	12,620	14,143
License revenue	257	238	190	190	
Total revenue	114,712	104,446	101,937	74,193	80,639
Costs and expenses:					
Cost of product revenue	43,001	41,110	45,039	33,060	33,017
Cost of Service Revenue	3,629	4,899	4,916	3,437	4,784
Research and development	39,264	38,415	30,826	23,668	22,072
Selling, general and administrative	82,959	93,212	79,516	63,653	57,812
Gain on escrow settlement	(3,986)				
Total costs and expenses	164,867	177,636	160,297	123,818	117,685
Loss from operations	(50,155)	(73,190)	(58,360)	(49,625)	(37,046)
Interest expense	(5,808)	(5,820)	(5,824)	(4,367)	(9,824)
Gain from sale of investment in Verinata	2,330				
Other income (expense), net	(1,157)	(1,167)	385	571	465
Loss before income taxes	(54,790)	(80,177)	(63,799)	(53,421)	(46,405)
Benefit from income taxes	1,475	4,192	3,264	3,343	2,167
Net loss	\$ (53,315)	\$ (75,985)	\$ (60,535)	\$ (50,078)	\$ (44,238)

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Net loss per share, basic and diluted ⁽¹⁾	\$ (1.86)	\$ (2.62)	\$ (1.84)	\$ (1.61)	\$ (1.13)
Shares used in computing net loss per share, basic and diluted ⁽¹⁾	28,711	29,008	32,980	31,051	39,033

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- (1) Please see Note 2 to our audited consolidated financial statements incorporated into this prospectus supplement and the accompanying prospectus by reference from our Annual Report on Form 10-K for the year ended December 31, 2017 for an explanation of the method used to calculate basic and diluted net loss per share attributed to common stockholders for the years ended December 31, 2015, 2016 and 2017. Please see Note 2 to our unaudited condensed consolidated financial statements incorporated into this prospectus supplement and the accompanying prospectus by reference from our Quarterly Report on Form 10-Q for the quarter ended September 30, 2018 for an explanation of the method used to calculate basic and diluted net loss per share attributed to common stockholders for the nine months ended September 30, 2018.

	As of September 30, 2018	
	(In thousands)	
Consolidated Balance Sheet Data⁽¹⁾:		
Working capital	\$	32,995
Total assets		252,290
Convertible notes, net		169,345
Total stockholders' equity		22,412

- (1) The Company has also entered into a revolving credit facility with Silicon Valley Bank in an aggregate principal amount of up to the lesser of (i) \$15.0 million or (ii) the sum of (a) 85% of our eligible receivables and (b) 50% of our eligible inventory, in each case, subject to certain limitations. As of September 30, 2018, availability under the revolving credit facility was \$12.8 million. There were no borrowings outstanding under the revolving credit facility at September 30, 2018.

Table of Contents**RISK FACTORS**

Investors should carefully consider the risks described below and in the filings incorporated by reference before deciding whether to invest in our securities. The risks described below and those described in the filings incorporated by reference are not the only ones we face. If any of the following risks actually occurs, our business, financial condition or results of operations could be adversely affected. In such case, the trading price of our common stock could decline and you could lose all or part of your investment. Our actual results could differ materially from those anticipated in the forward-looking statements made throughout this prospectus supplement and in the documents incorporated by reference as a result of different factors, including the risks we face described below and those described in the filings incorporated by reference.

Risks Related to our Business and Strategy

Our financial results and revenue growth rates have varied significantly from quarter-to-quarter and year-to-year due to a number of factors, and a significant variance in our operating results or rates of growth, if any, could lead to substantial volatility in our stock price.

Our total revenue was \$101.9 million in 2017, \$104.4 million in 2016, and \$114.7 million in 2015. The decrease in overall revenue over this period was due in significant part to decreasing sales of single-cell genomics instruments, driven by a combination of factors including changes in customer demand, increased competition, and performance issues in certain IFCs used in our C1 systems.

Our revenue, results of operations, and revenue growth rates have varied in the past and may continue to vary significantly from quarter-to-quarter or year-to-year. For example, in 2011, 2012, 2014 and 2015, we experienced higher sales in the fourth quarter than in the first quarter of the next fiscal year. Although this was not the case in the fourth quarter of 2013 compared to the first quarter of 2014, this seasonal historical trend continued in 2014 and 2015 with a decrease in revenue in the first quarters of 2015 and 2016, respectively. However, sales increased slightly in the first quarter of 2017 compared to the fourth quarter of 2016. Additionally, for the quarters ended March 31, 2015 and September 30, 2015, we experienced year-over-year revenue growth rates that were substantially lower than revenue growth rates experienced in other periods since our initial public offering, and we experienced a year-over-year decline in revenue for the quarters ended September 30, 2017, June 30, 2017, March 31, 2017, September 30, 2016, June 30, 2016 and September 30, 2015, and for the years ended December 31, 2017, 2016 and 2015. We may experience substantial variability in our product mix from period-to-period as revenue from sales of our instruments relative to sales of our consumables may fluctuate or deviate significantly from expectations. Variability in our quarterly or annual results of operations, mix of product revenue, or rates of revenue growth, if any, may lead to volatility in our stock price as research analysts and investors respond to these fluctuations. These fluctuations are due to numerous factors that are difficult to forecast, including: fluctuations in demand for our products; changes in customer budget cycles and capital spending; seasonal variations in customer operations; tendencies among some customers to defer purchase decisions to the end of the quarter; the large unit value of our systems, particularly our proteomics systems; changes in our pricing and sales policies or the pricing and sales policies of our competitors; our ability to design, manufacture, market, sell, and deliver products to our customers in a timely and cost-effective manner; fluctuations or reductions in revenue from sales of legacy instruments that may have contributed significant revenue in prior periods; quality control or yield problems in our manufacturing operations; our ability to timely obtain adequate quantities of the materials or components used in our products, which in certain cases are purchased through sole and single source suppliers; new product introductions and enhancements by us and our competitors; unanticipated increases in costs or expenses; our complex, variable and, at times, lengthy sales cycle; global economic conditions; and fluctuations in foreign currency exchange rates. Additionally, we have certain customers who have historically placed large orders in multiple quarters during a calendar year. A significant reduction in orders from one

or more of these customers could

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adversely affect our revenue and operating results, and if these customers defer or cancel purchases or otherwise alter their purchasing patterns, our financial results and actual results of operations could be significantly impacted. Other unknown or unpredictable factors also could harm our results.

The foregoing factors, as well as other factors, could materially and adversely affect our quarterly and annual results of operations and rates of revenue growth, if any. We have experienced significant revenue growth in the past but we may not achieve similar growth rates in future periods. You should not rely on our operating results for any prior quarterly or annual period as an indication of our future operating performance. If we are unable to return to adequate revenue growth, our operating results could suffer and our stock price could decline. In addition, a significant amount of our operating expenses are relatively fixed due to our manufacturing, research and development, and sales and general administrative efforts. Any failure to adjust spending quickly enough to compensate for a shortfall relative to our anticipated revenue could magnify the adverse impact of such shortfalls on our results of operations. We expect that our sales will continue to fluctuate on an annual and quarterly basis and that our financial results for some periods may be below those projected by securities analysts, which could significantly decrease the price of our common stock.

We have incurred losses since inception, and we may continue to incur substantial losses for the foreseeable future.

We have incurred significant losses in each fiscal year since our inception, including net losses of \$14.8 million and \$44.2 million during the three and nine months ended September 30, 2018, and net losses of \$60.5 million and \$76.0 million for the years ended December 31, 2017 and 2016, respectively. As of September 30, 2018, we had an accumulated deficit of \$544.1 million. These losses have resulted principally from costs incurred in our research and development programs, and from our manufacturing costs and selling, general, and administrative expenses. We believe that our continued investment in research and development, sales, and marketing is essential to our long-term competitive position and future revenue growth.

Due to our negative revenue growth in 2016 and 2015, we implemented certain operational efficiency and cost-savings initiatives beginning in the first quarter of 2017 intended to align our resources with our product strategy, reduce our operating expenses, and manage our cash flows. These cost efficiency initiatives have included targeted workforce reductions, optimizing our facilities, and reducing excess space. Further actions such as these may be required on an ongoing basis to optimize our organization. For example, we may need to decrease or defer capital expenditures and development activities or implement further operating expense reduction measures. Such measures may impair our ability to invest in developing, marketing and selling new and existing products. Furthermore, if such efficiency and cost reduction efforts are unsuccessful, our cash position could be negatively impacted and we may, among other things, be required to seek additional sources of financing. Until we are able to generate additional revenue to support our level of operating expenses, we will continue to incur operating and net losses and negative cash flow from operations. Because of the numerous risks and uncertainties associated with our commercialization efforts and future product development, we are unable to predict when we will become profitable, and we may never become profitable. Even if we do achieve profitability, we may not be able to sustain or increase our profitability.

If we require additional funds in the future, we may not be able to obtain such funds on acceptable terms, or at all. If we raise funds by issuing equity securities, our stockholders could experience dilution. Debt financing, if available, may involve covenants restricting our operations or our ability to incur additional debt. Any additional debt or equity financing that we raise may contain terms that are not favorable to us or our stockholders. If we do not have, or are not able to obtain sufficient funds, we may have to delay development or commercialization of our products or license to third parties the rights to commercialize products or technologies that we would otherwise seek to commercialize. We may also

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have to reduce marketing, customer support, research and development or other resources devoted to our products.

We have significant outstanding convertible debt, and may be required to repay, refinance or restructure a portion of such debt before 2021. In February 2014, we issued \$201.3 million aggregate principal amount of our 2.75% Senior Convertible Notes due 2034 (2014 Notes), pursuant to an underwriting agreement, dated January 29, 2014. In March 2018, we entered into separate privately negotiated transactions with certain holders of our 2014 Notes to exchange \$150.0 million in aggregate principal amount of the 2014 Notes for new convertible notes (the 2018 Notes). Following the exchange, approximately \$51.3 million aggregate principal amount of the 2014 Notes remain outstanding in addition to \$150.0 million in aggregate principal amount of the 2018 Notes (collectively, the Convertible Notes). The Convertible Notes accrue interest at a rate of 2.75% per year, payable semi-annually in arrears on February 1 and August 1 of each year. The Convertible Notes will mature on February 1, 2034, unless earlier converted, redeemed, or repurchased in accordance with the terms of the respective Notes. Holders of the 2014 Notes may require us to repurchase all or a portion of their 2014 Notes on each of February 6, 2021, February 6, 2024, and February 6, 2029 at a repurchase price in cash equal to 100% of the principal amount of the Notes plus accrued and unpaid interest. Holders of the 2018 Notes may require us to repurchase all or a portion of their 2018 Notes on each of February 6, 2023, February 6, 2026, and February 6, 2029 at a repurchase price in cash equal to 100% of the accreted principal amount (i.e., up to 120% of the outstanding principal amount) of the 2018 Notes plus accrued and unpaid interest. If we undergo a fundamental change, as defined in the terms of each of the applicable series of Notes, (i) holders of the 2014 Notes may require us to repurchase the 2014 Notes in whole or in part for cash at a repurchase price equal to 100% of the principal amount of the 2014 Notes plus accrued and unpaid interest and (ii) holders of the 2018 Notes may require us to repurchase the 2018 Notes in whole or in part for cash at a repurchase price equal to 100% of the accreted principal amount (i.e., up to 120% of the outstanding principal amount) of the 2018 Notes plus accrued and unpaid interest. If we refinance the debt owed under the 2014 Notes and the 2018 Notes, we may issue additional convertible notes or other debt, which could include additional company obligations and represent more dilution to existing stockholders and noteholders.

The life science markets are highly competitive and subject to rapid technological change, and we may not be able to successfully compete.

The markets for our products are characterized by rapidly changing technology, evolving industry standards, changes in customer needs, emerging competition, new product introductions, and strong price competition. We compete with both established and development stage life science research companies that design, manufacture, and market instruments and consumables for gene expression analysis, single-cell targeted gene expression or protein expression analysis, single nucleotide polymorphism genotyping, or SNP genotyping, polymerase chain reaction, or PCR, digital PCR, other nucleic acid detection, flow cytometry, cell imaging, and additional applications using well established laboratory techniques, as well as newer technologies such as bead encoded arrays, microfluidics, nanotechnology, high-throughput DNA sequencing, microdroplets, and photolithographic arrays. Most of our current competitors have significantly greater name recognition, greater financial and human resources, broader product lines and product packages, larger sales forces, larger existing installed bases, larger intellectual property portfolios, and greater experience and scale in research and development, manufacturing, and marketing than we do. For example, companies such as 10X Genomics, Inc., Affymetrix, Inc. (now part of Thermo Fisher Scientific Inc.), Agena Bioscience, Inc., Agilent Technologies, Inc., Becton, Dickinson and Company, Bio-Rad Laboratories, Inc., Cellular Research, Inc. (now a part of Becton, Dickinson and Company), Danaher Corporation, Illumina, Inc., Life Technologies Corporation (now part of Thermo Fisher Scientific Inc.), LGC Limited, Luminex Corporation, Millipore Corporation, NanoString Technologies, Inc., PerkinElmer, Inc. (through its acquisition of Caliper Life Sciences, Inc.), RainDance Technologies, Inc. (acquisition by Bio-Rad

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Laboratories, Inc. pending), Roche Diagnostics Corporation, Sony Corporation, Thermo Fisher Scientific Inc., WaferGen Bio-systems, Inc., Cytex Biosciences, Inc., Akoya Biosciences, Inc., Innova Biosciences Ltd., QIAGEN N.V., 1CellBio, Inc., Berkeley Lights, Inc., and Mission Bio, Inc. have products that compete in certain segments of the market in which we sell our products. In addition, we have in recent quarters experienced increased competition in the single-cell genomics market, including new product releases from 10X Genomics, Inc. and WaferGen Bio-systems, Inc. (recently acquired by Takara Bio Inc.), as well as the acquisition of Cellular Research by Becton Dickinson and Company and an announced exclusive partnership between Illumina, Inc. and Bio-Rad Laboratories, Inc. In addition, due to the release of our Hyperion imaging mass cytometry system, we now are exposed to competition from companies offering imaging-based systems, specialized reagents and/or services including Carl Zeiss Inc., Leica Biosystems, Nikon Corporation, Olympus America Inc., Roche Diagnostics Corporation, PerkinElmer, Inc., Agilent Technologies, Inc., IonPath Inc., Zellwerk GmbH, Bruker Corporation, Shimadzu Corporation, NanoString Technologies, Inc., and Neogenomics (Multiomyx).

Competitors may be able to respond more quickly and effectively than we can to new or changing opportunities, technologies, standards, or customer requirements. In light of these advantages, even if our technology is more effective than the product or service offerings of our competitors, current or potential customers might accept competitive products and services in lieu of purchasing our technology. We anticipate that we will continue to 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. Increased competition is likely to result in pricing pressures, which could reduce our profit margins and increase our sales and marketing expenses. In addition, mergers, consolidations, or other strategic transactions between two or more of our competitors, or between our competitor and one of our key customers, could change the competitive landscape and weaken our competitive position, adversely affecting our business.

Market opportunities may not develop as quickly as we expect, limiting our ability to successfully sell our products, or our product development and strategic plans may change and our entry into certain markets may be delayed, if it occurs at all.

The application of our technologies to high-throughput genomics, single-cell genomics and, particularly, mass cytometry applications are in many cases emerging market opportunities. We believe these opportunities will take several years to develop or mature and we cannot be certain that these market opportunities will develop as we expect. The future growth of our markets and the success of our products depend on many factors beyond our control, including recognition and acceptance by the scientific community, and the growth, prevalence, and costs of competing methods of genetic and protein analysis. Additionally, our success depends on the ability of our sales organization to successfully sell our products into these new markets. Our commercial organization has undergone significant changes in 2016 and 2017, and we are in the early stages of establishing sales of our products for many key applications. If we are not able to successfully market and sell our products, or achieve the revenue or margins we expect, our operating results may be harmed and we may not recover our product development and marketing expenditures. In addition, our product development and strategic plans may change, which could delay or impede our entry into these markets.

If our products fail to achieve and sustain sufficient market acceptance, our revenue will be adversely affected.

Our success depends on our ability to develop and market products that are recognized and accepted as reliable, enabling and cost-effective. Most of our potential customers already use expensive research systems in their laboratories and may be reluctant to replace those systems. Market acceptance of our systems will depend on many factors, including our ability to convince potential customers that our systems are an attractive alternative to existing technologies. Compared to some competing technologies, our technology is relatively new, and most potential customers have limited knowledge of, or experience

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with, our products. Prior to adopting our systems, some potential customers may need to devote time and effort to testing and validating our systems. Any failure of our systems to meet these customer benchmarks could result in customers choosing to retain their existing systems or to purchase systems other than ours, and revenue from the sale of legacy instruments that may have contributed significant revenue in prior periods may decrease.

In addition, it is important that our systems be perceived as accurate and reliable by the scientific and medical research community as a whole. Historically, a significant part of our sales and marketing efforts has been directed at convincing industry leaders of the advantages of our systems and encouraging such leaders to publish or present the results of their evaluation of our system. If we are unable to continue to induce leading researchers to use our systems, or if such researchers are unable to achieve and publish or present significant experimental results using our systems, acceptance and adoption of our systems will be slowed and our ability to increase our revenue would be adversely affected.

We may experience development or manufacturing problems or delays that could limit the potential growth of our revenue or increase our losses.

We may encounter unforeseen situations in the manufacturing and assembly of our products that would result in delays or shortfalls in our production. For example, our production processes and assembly methods may have to change to accommodate any significant future expansion of our manufacturing capacity, which may increase our manufacturing costs, delay production of our products, reduce our product margin, and adversely impact our business. Conversely, if demand for our products shifts such that a manufacturing facility is operated below its capacity for an extended period, we may adjust our manufacturing operations to reduce fixed costs, which could lead to uncertainty and delays in manufacturing times and quality during any transition period.

Additionally, all of our IFCs for commercial sale are manufactured at our facility in Singapore. Production of the elastomeric block that is at the core of our IFCs is a complex process requiring advanced clean rooms, sophisticated equipment, and strict adherence to procedures. Any contamination of the clean room, equipment malfunction, or failure to strictly follow procedures can significantly reduce our yield in one or more batches. We have in the past experienced variations in yields due to such factors. A drop in yield can increase our cost to manufacture our IFCs or, in more severe cases, require us to halt the manufacture of our IFCs until the problem is resolved. Identifying and resolving the cause of a drop in yield can require substantial time and resources.

Furthermore, developing an IFC for a new application may require developing a specific production process for that type of IFC. While all of our IFCs are produced using the same basic processes, significant variations may be required to ensure adequate yield of any particular type of IFC. Developing such a process can be very time consuming, and any unexpected difficulty in doing so can delay the introduction of a product.

If our manufacturing activities are adversely impacted, or if we are otherwise unable to keep up with demand for our products by successfully manufacturing, assembling, testing, and shipping our products in a timely manner, our revenue could be impaired, market acceptance for our products could be adversely affected and our customers might instead purchase our competitors' products.

If our research and product development efforts do not result in commercially viable products within anticipated timelines, if at all, our business and results of operations will be adversely affected.

Our business is dependent on the improvement of our existing products, our development of new products to serve existing markets, and our development of new products to create new markets and applications that were previously not practical with existing systems. We intend to devote significant personnel and financial resources to research and

development activities designed to advance the

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capabilities of our technology. We have developed design rules for the implementation of our technology that are frequently revised to reflect new insights we have gained about the technology. In addition, we have discovered that biological or chemical reactions sometimes behave differently when implemented on our systems rather than in a standard laboratory environment. Furthermore, many such reactions take place within the confines of single cells, which have also demonstrated unexpected behavior when grown and manipulated within microfluidic environments. As a result, research and development efforts may be required to transfer certain reactions and cell handling techniques to our systems. In the past, product development projects have been significantly delayed when we encountered unanticipated difficulties in implementing a process on our systems. We may have similar delays in the future, and we may not obtain any benefits from our research and development activities. Any delay or failure by us to develop and release new products or product enhancements would have a substantial adverse effect on our business and results of operations.

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

Our systems utilize novel and complex technology and such systems may develop or contain undetected defects or errors. We cannot assure you that material performance problems, defects, or errors will not arise, and as we increase the density and integration of our systems, these risks may increase. We generally provide warranties that our systems will meet performance expectations and will be free from defects. The costs incurred in correcting any defects or errors may be substantial and could adversely affect our operating margins. For example, we have experienced a performance issue with respect to certain IFCs used in our C1 systems due to the presence of more than one cell in an IFC chamber. Although we have redesigned such C1 IFCs, we may experience additional unexpected product defects or errors that could affect our ability to adequately address these performance issues.

In manufacturing our products, including our systems, IFCs, and assays, we depend upon third parties for the supply of various components, many of which require a significant degree of technical expertise to produce. In addition, we purchase certain products from third-party suppliers for resale. If our suppliers fail to produce components to specification or provide defective products to us for resale and our quality control tests and procedures fail to detect such errors or defects, or if we or our suppliers use defective materials or workmanship in the manufacturing process, the reliability and performance of our products will be compromised.

If our products contain defects, we may experience:

a failure to achieve market acceptance or expansion of our product sales;

loss of customer orders and delay in order fulfillment;

damage to our brand reputation;

increased cost of our warranty program due to product repair or replacement;

product recalls or replacements;

inability to attract new customers;

diversion of resources from our manufacturing and research and development departments into our service department; and

legal claims against us, including product liability claims, which could be costly and time consuming to defend and result in substantial damages.

In addition, certain of our products are marketed for use with products sold by third parties. For example, certain of our systems are marketed as compatible with major next-generation DNA sequencing

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instruments. If such third-party products are not produced to specification, are produced in accordance with modified specifications, or are defective, they may not be compatible with our products. In such case, the reliability and performance of our products may be compromised.

The occurrence of any one or more of the foregoing could negatively affect our business, financial condition, and results of operations.

Our business depends on research and development spending levels of academic, clinical, and governmental research institutions, biopharmaceutical, biotechnology, and Ag-Bio companies, and CROs, a reduction in which could limit our ability to sell our products and adversely affect our business.

We expect that our revenue in the foreseeable future will be derived primarily from sales of our systems, IFCs, assays, and reagents to academic institutions, clinical research laboratories that use our technology to develop tests, and biopharmaceutical, biotechnology, Ag-Bio companies and CROs worldwide. Our success will depend upon their demand for and use of our products. Accordingly, the spending policies of these customers could have a significant effect on the demand for our technology. These policies may be based on a wide variety of factors, including concerns regarding any future federal government budget sequestrations, the availability of resources to make purchases, the spending priorities among various types of equipment, policies regarding spending during recessionary periods, and changes in the political climate. In addition, academic, governmental, and other research institutions that fund research and development activities may be subject to stringent budgetary constraints that could result in spending reductions, reduced allocations, or budget cutbacks, which could jeopardize the ability of these customers to purchase our products. Our operating results may fluctuate substantially due to reductions and delays in research and development expenditures by these customers. For example, reductions in capital and operating expenditures by these customers may result in lower than expected sales of our systems, IFCs, assays, and reagents. These reductions and delays may result from factors that are not within our control, such as:

changes in economic conditions;

natural disasters;

changes in government programs that provide funding to research institutions and companies;

changes in the regulatory environment affecting life science and Ag-Bio companies engaged in research and commercial activities;

differences in budget cycles across various geographies and industries;

market-driven pressures on companies to consolidate operations and reduce costs;

mergers and acquisitions in the life science and Ag-Bio industries; and

other factors affecting research and development spending.

Any decrease in our customers' budgets or expenditures, or in the size, scope, or frequency of capital or operating expenditures, could materially and adversely affect our operations or financial condition.

If one or more of our manufacturing facilities become unavailable or inoperable, we will be unable to continue manufacturing our instruments, IFCs, assays and/or reagents and, as a result, our business will be harmed until we are able to secure a new facility.

We manufacture our genomics analytical and preparatory instruments and IFCs for commercial sale at our facility in Singapore, our mass cytometry instruments for commercial sale at our facility in Canada, and our assays and reagents for commercial sale at our headquarters in the United States. No other

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manufacturing facilities are currently available to us, particularly facilities of the size and scope of our Singapore and Canada operations. Our facilities and the equipment we use to manufacture our instruments, IFCs, assays, and reagents would be costly to replace and could require substantial lead times to repair or replace. Our facilities may be harmed or rendered inoperable by natural or man-made disasters, which may render it difficult or impossible for us to manufacture our products for some period of time. If any of our facilities become unavailable to us, we cannot provide assurances that we will be able to secure a new manufacturing facility on acceptable terms, if at all. The inability to manufacture our products, combined with our limited inventory of manufactured supplies, 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. 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. If our manufacturing capabilities are impaired, we may not be able to manufacture and ship our products in a timely manner, which would adversely impact our business.

We generate a substantial portion of our revenue internationally and are subject to various risks relating to such international activities, which could adversely affect our sales and operating performance. In addition, any disruption or delay in the shipping or off-loading of our products, whether domestically or internationally, may have an adverse effect on our financial condition and results of operations.

During the nine months ended September 30, 2018, and 2017, and the years ended December 31, 2017, and 2016, approximately 56%, 53%, 55% and 49%, respectively, of our product and service revenue was generated from sales to customers located outside of the United States. We believe that a significant percentage of our future revenue will come from international sources as we expand our international operations and develop opportunities in other countries. Engaging in international business inherently involves a number of difficulties and risks, including:

required compliance with existing and changing foreign regulatory requirements and laws that are or may be applicable to our business in the future, such as the RoHS and WEEE directives, which regulate the use of certain hazardous substances in, and require the collection, reuse, and recycling of waste from, products we manufacture;

required compliance with anti-bribery laws, such as the U.S. Foreign Corrupt Practices Act and U.K. Bribery Act, data privacy requirements, labor laws, and anti-competition regulations;

export or import restrictions;

laws and business practices favoring local companies;

longer payment cycles and difficulties in enforcing agreements and collecting receivables through certain foreign legal systems;

unstable economic, political, and regulatory conditions;

potentially adverse tax consequences, tariffs, customs charges, bureaucratic requirements, and other trade barriers;

difficulties and costs of staffing and managing foreign operations; and

difficulties protecting or procuring intellectual property rights.

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

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During June 2016, the referendum by British voters to exit the European Union (Brexit) adversely impacted global markets and resulted in a sharp decline of the British pound sterling against the US dollar. In February 2017, the British Parliament voted in favor of allowing the British government to begin the formal process of Brexit, and the United Kingdom submitted its required notice under the applicable treaties that it intended to leave the European Union in March 2017, which initiated a negotiation process between the United Kingdom and the European Union that could last up to two years. In the short-term, volatility in the British pound sterling could continue as the United Kingdom negotiates its anticipated exit from the European Union. In the longer term, any impact from Brexit on our United Kingdom operations will depend, in part, on the outcome of tariff, trade, regulatory, and other negotiations.

A majority of our product sales are currently denominated in U.S. dollars and fluctuations in the value of the U.S. dollar relative to foreign currencies could decrease demand for our products and adversely impact our financial performance. For example, if the value of the U.S. dollar increases relative to foreign currencies, our products could become more costly to the international consumer and therefore less competitive in international markets, or if the value of the U.S. dollar decreases relative to the Singapore dollar or the Canadian dollar, it would become more costly in U.S. dollars for us to manufacture our products in Singapore and/or in Canada. Additionally, our expenses are generally denominated in the currencies of the countries in which our operations are located, which is primarily in the United States, with a portion of expenses incurred in Singapore and Canada where a significant portion of our manufacturing operations are located. Our results of operations and cash flows are, therefore, subject to fluctuations due to changes in foreign currency exchange rates. The volatility of exchange rates depends on many factors that we cannot forecast with reliable accuracy. We have experienced and will continue to experience fluctuations in our net income or loss as a result of transaction gains or losses related to revaluing certain current asset and current liability balances that are denominated in currencies other than the functional currency of the entities in which they are recorded. For example, we experienced foreign currency gain of \$0.4 million during the nine months ended September 30, 2018, and losses of \$0.1 million and \$1.5 million during the years ended December 31, 2017 and 2016, respectively. Fluctuations in currency exchange rates could have an adverse impact on our financial results in the future.

We rely on shipping providers to deliver products to our customers globally. Labor, tariff, or World Trade Organization-related disputes, piracy, physical damage to shipping facilities or equipment caused by severe weather or terrorist incidents, congestion at shipping facilities, inadequate equipment to load, dock, and offload our products, energy-related tie-ups, or other factors could disrupt or delay shipping or off-loading of our products domestically and internationally. Such disruptions or delays may have an adverse effect on our financial condition and results of operations.

We are dependent on single 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.

We rely on single and sole source suppliers for certain components and materials used in our products. Additionally, several of our instruments are assembled at the facilities of contract manufacturers in Singapore. We do not have long term contracts with our suppliers of these components and materials or our assembly service providers. The loss of a single or sole source supplier of any of the following components and/or materials would require significant time and effort to locate and qualify an alternative source of supply, if at all:

The IFCs used in our microfluidic systems are fabricated using a specialized polymer, and other specialized materials, that are available from a limited number of sources. In the past, we have encountered quality issues that have reduced our manufacturing yield or required the use of additional

manufacturing processes.

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Specialized pneumatic and electronic components for our C1, Callisto, Juno, and Polaris systems are available from a limited number of sources.

The electron multiplier detector included in the Hyperion/Helios systems and certain metal isotopes used with the Hyperion/Helios systems are purchased from sole source suppliers.

The movement stage included in the Hyperion imaging mass cytometer system is purchased from a sole source supplier.

The nickel sampler cone used with the Hyperion/Helios systems is purchased from single source suppliers and is available from a limited number of sources.

The raw materials for our Delta Gene and SNP Type assays and Access Array target-specific primers are available from a limited number of sources.

Our reliance on single and sole source suppliers and assembly service providers also subjects us to other risks that could harm our business, including the following:

we may be subject to increased component or assembly costs;

we may not be able to obtain adequate supply or services in a timely manner or on commercially reasonable terms;

our suppliers or service providers may make errors in manufacturing or assembly of components that could negatively affect the efficacy of our products or cause delays in shipment of our products; and

our suppliers or service providers may encounter capacity constraints or financial hardships unrelated to our demand for components or services, which could inhibit their ability to fulfill our orders and meet our requirements.

We have in the past experienced quality control and supply problems with some of our suppliers, such as manufacturing errors, and may again experience problems in the future. We may not be able to quickly establish additional or replacement suppliers, particularly for our single source components, or assembly service providers. Any interruption or delay in the supply of components or materials or assembly of our instruments, or our inability to obtain components, materials, or assembly services from alternate sources at acceptable prices in a timely manner, could impair our ability to meet the demand of our customers and cause them to cancel orders or switch to competitive products.

Our future success is dependent upon our ability to expand our customer base and introduce new applications.

Our customer base is primarily composed of academic institutions, clinical research laboratories that use our technology to develop tests, and biopharmaceutical, biotechnology, and Ag-Bio companies that perform analyses for research and commercial purposes. Our success will depend, in part, upon our ability to increase our market share among these customers, attract additional customers outside of these markets, and market new applications to existing and new customers as we develop such applications. Attracting new customers and introducing new applications require substantial time and expense. For example, it may be difficult to identify, engage, and market to customers who are unfamiliar with the current applications of our systems. Any failure to expand our existing customer base or launch new applications would adversely affect our ability to increase our revenue.

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We may not be able to develop new products or enhance the capabilities of our existing systems to keep pace with rapidly changing technology and customer requirements, which could have a material adverse effect on our business, revenue, financial condition, 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 systems. New technologies, techniques, or products could emerge that might offer better combinations of price and performance than our current or future product lines and systems. Existing markets for our products, including high-throughput genomics, single-cell genomics and mass cytometry, as well as potential markets for our products such as high-throughput DNA sequencing and molecular applications, are characterized by rapid technological change and innovation. It is critical to our success for us to anticipate changes in technology and customer requirements and to successfully introduce new, enhanced, and competitive technology to meet our customers' and prospective customers' needs on a timely and cost-effective basis. Developing and implementing new technologies will require us to incur substantial development costs and we may not have adequate resources available to be able to successfully introduce new applications of, or enhancements to, our systems. We cannot guarantee that we will be able to maintain technological advantages over emerging technologies in the future. While we typically plan improvements to our systems, we may not be able to successfully implement these improvements. If we fail to keep pace with emerging technologies, demand for our systems will not grow and may decline, and our business, revenue, financial condition, and operating results could suffer materially. In addition, if we introduce enhanced systems but fail to manage product transitions effectively, customers may delay or forgo purchases of our systems and our operating results may be adversely affected by product obsolescence and excess inventory. Even if we successfully implement some or all of these planned improvements, we cannot guarantee that our current and potential customers will find our enhanced systems to be an attractive alternative to existing technologies, including our current products.

Impairment of our goodwill or other intangible assets could materially and adversely affect our business, operating results, and financial condition.

As of September 30, 2018, we had approximately \$169.0 million of goodwill and net intangible assets, including approximately \$104.1 million of goodwill and approximately \$64.9 million of net intangible assets. These assets represent a significant portion of the assets recorded on our consolidated balance sheet and relate primarily to our acquisition of DVS Sciences, Inc., or DVS, in February 2014. In addition, if in the future we acquire additional businesses, technologies, or other intangible assets, a substantial portion of the value of such assets may be recorded as goodwill or intangible assets.

The carrying amounts of goodwill and intangible assets are affected whenever events or changes in circumstances indicate that their carrying amounts may not be recoverable. We review goodwill and indefinite lived intangible assets for impairment at least annually and more frequently under certain circumstances. Other intangible assets that are deemed to have finite useful lives will continue to be amortized over their useful lives but must be reviewed for impairment when events or changes in circumstances indicate that the carrying amount of these assets may not be recoverable. Events or changes in circumstances that could affect the likelihood that we will be required to recognize an impairment charge include declines in our stock price or market capitalization, declines in our market share or revenues, an increase in our losses, rapid changes in technology, failure to achieve the benefits of capacity increases and utilization, significant litigation arising out of an acquisition, or other matters. In particular, these or other adverse events or changes in circumstances may affect the estimated undiscounted future operating cash flows expected to be derived from our goodwill and intangible assets. We have recently experienced substantial declines in our stock price, and continued weakness or further declines in our stock price increase the likelihood that we may be required to recognize impairment charges. Any impairment charges could have a material adverse effect on our operating results and net asset value in the quarter in which we recognize the impairment charge. We cannot provide assurances that we

will not in the future be required to recognize impairment charges.

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Our business operations are dependent upon our new senior management team and the ability of our other new employees to learn their new roles. If we are unable to recruit and retain key executives, scientists, and technical support personnel, we may be unable to achieve our goals.

Our performance is substantially dependent on the performance of our senior management, which has substantially changed over the last few years, including, for example, a change in our chief executive officer in October 2016. In addition to our chief executive officer, several other members of our senior management team have started at Fluidigm since mid-2016. As new employees gain experience in their roles, we could experience inefficiencies or a lack of business continuity due to loss of historical knowledge and a lack of familiarity of new employees with business processes, operating requirements, policies and procedures, and we may experience additional costs as new employees learn their roles and gain necessary experience. It is important to our success that these key employees quickly adapt to and excel in their new roles. If they are unable to do so, our business and financial results could be materially adversely affected. In addition, the loss of the services of any member of our senior management or our scientific or technical support staff might significantly delay or prevent the development of our products or achievement of other business objectives by diverting management's attention to transition matters and identification of suitable replacements, if any, and could have a material adverse effect on our business. Our research and product development efforts could also be delayed or curtailed if we are unable to attract, train, and retain highly skilled employees, particularly, senior scientists and engineers. We do not maintain fixed term employment contracts or significant key man life insurance with any of our employees.

Additionally, to expand our research and product development efforts, we need to retain and recruit key scientists skilled in areas such as molecular and cellular biology, assay development, and manufacturing. We also need highly trained technical support personnel with the necessary scientific background and ability to understand our systems at a technical level to effectively support potential new customers and the expanding needs of current customers. Competition for these people is intense and we may face challenges in retaining and recruiting such individuals if, for example, our stock price declines, reducing the retention value of equity awards, or our business or technology is no longer perceived as leading in our field. Because of the complex and technical nature of our systems and the dynamic market in which we compete, any failure to attract and retain a sufficient number of qualified employees could materially harm our ability to develop and commercialize our technology.

Our efficiency and cost-savings initiatives could be disruptive to our operations and adversely affect our results of operations and financial condition, and we may not realize some or all of the anticipated benefits of these initiatives in the time frame anticipated or at all.

Beginning in the first quarter of 2017, we implemented efficiency and cost-savings initiatives intended to stabilize our business operations and return to growth. We identified areas for cost efficiencies including targeted workforce reductions and optimizing our facilities, and reducing excess space. Other initiatives may also include decreasing or deferring capital expenditures and development activities. The implementation of these efficiency and cost-savings initiatives, including the impact of workforce reductions, could impair our ability to invest in developing, marketing and selling new and existing products, be disruptive to our operations, make it difficult to attract or retain employees, result in higher than anticipated charges, divert the attention of management, result in a loss of accumulated knowledge, impact our customer and supplier relationships, and otherwise adversely affect our results of operations and financial condition. In addition, our ability to complete our efficiency and cost-savings initiatives and achieve the anticipated benefits within the expected time frame is subject to estimates and assumptions and may vary materially from our expectations, including as a result of factors that are beyond our control. Furthermore, our efforts to stabilize our business and return to growth may not be successful.

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To use our products, our Biomark, EP1, and Helios/CyTOF 2 systems in particular, customers typically need to purchase specialized reagents. Any interruption in the availability of these reagents for use in our products could limit our ability to market our products.

Our products, our Biomark, EP1, and Helios systems in particular, must be used in conjunction with one or more reagents designed to produce or facilitate the particular biological or chemical reaction desired by the user. Many of these reagents are highly specialized and available to the user only from a single supplier or a limited number of suppliers. Although we sell reagents for use with certain of our products, our customers may purchase these reagents directly from third-party suppliers, and we have no control over the supply of those materials. In addition, our products are designed to work with these reagents as they are currently formulated. We have no control over the formulation of reagents sold by third-party suppliers, and the performance of our products might be adversely affected if the formulation of these reagents is changed. If one or more of these reagents were to become unavailable or were reformulated, our ability to market and sell our products could be materially and adversely affected.

In addition, the use of a reagent for a particular process may be covered by one or more patents relating to the reagent itself, the use of the reagent for the particular process, the performance of that process, or the equipment required to perform the process. Typically, reagent suppliers, who are either the patent holders or their authorized licensees, sell the reagents along with a license or covenant not to sue with respect to such patents. The license accompanying the sale of a reagent often purports to restrict the purposes for which the reagent may be used. If a patent holder or authorized licensee were to assert against us or our customers that the license or covenant relating to a reagent precluded its use with our systems, our ability to sell and market our products could be materially and adversely affected. For example, our Biomark system involves real-time quantitative PCR, or qPCR. Leading suppliers of reagents for real-time qPCR reactions include Life Technologies Corporation (now part of Thermo Fisher Scientific) and Roche Diagnostics Corporation, who are our direct competitors, and their licensees. These real-time qPCR reagents are typically sold pursuant to limited licenses or covenants not to sue with respect to patents held by these companies. We do not have any contractual supply agreements for these real-time qPCR reagents, and we cannot assure you that these reagents will continue to be available to our customers for use with our systems, or that these patent holders will not seek to enforce their patents against us, our customers, or suppliers.

If we seek to be regulated as a medical device manufacturer by the U.S. Food and Drug Administration, or FDA, and foreign regulatory authorities, and seek approval and/or clearance for our products, the regulatory approval process would take significant time and expense and could fail to result in FDA clearance or approval for the intended uses we believe are commercially attractive. If our products were successfully approved and/or cleared, we would be subject to ongoing and extensive regulatory requirements, which would increase our costs and divert resources away from other projects. If we obtained FDA clearance or approval and we failed to comply with these requirements, our business and financial condition could be adversely impacted.

Our products are currently labeled, promoted and sold to academic institutions, life sciences laboratories, biopharmaceutical, biotechnology, Ag-Bio companies and CROs for research use only, or RUO, and are not designed for, or intended to be used for, diagnostic tests or as medical devices as currently marketed. Before we can begin to label and market our products for use as, or in the performance of, clinical diagnostics in the United States, thereby subjecting them to FDA regulation as medical devices, we would be required to obtain premarket 510(k) clearance or premarket approval (PMA) from the FDA, unless an exception applies.

We may in the future register with the FDA as a medical device manufacturer and list some of our products with the FDA pursuant to an FDA Class I listing for general purpose laboratory equipment. We are currently assessing whether and when to make an initial registration. While this regulatory classification is exempt from certain FDA requirements, such as the need to submit a premarket

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notification commonly known as a 510(k), and some of the requirements of the FDA's Quality System Regulations, or QSRs, we would be subject to ongoing FDA general controls, which include compliance with FDA regulations for labeling, inspections by the FDA, complaint evaluation, corrections and removals reporting, promotional restrictions, reporting adverse events or malfunctions for our products, and general prohibitions against misbranding and adulteration.

In addition, we may in the future submit 510(k) premarket notifications to the FDA to obtain FDA clearance of certain of our products on a selected basis. It is possible, in the event we elect to submit 510(k) applications for certain of our products, that the FDA would take the position that a more burdensome premarket application, such as a premarket approval application or a de novo application is required for some of our products. If such applications were required, greater time and investment would be required to obtain FDA approval. Even if the FDA agreed that a 510(k) was appropriate, FDA clearance can be expensive and time consuming. It generally takes a significant amount of time to prepare a 510(k), including conducting appropriate testing on our products, and several months to years for the FDA to review a submission. Notwithstanding the effort and expense, FDA clearance or approval could be denied for some or all of our products. Even if we were to seek and obtain regulatory approval or clearance, it may not be for the intended uses we believe are important or commercially attractive.

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

In addition, we could decide to seek similar regulatory clearance or approval for certain of our products in countries outside of the United States. Sales of such products outside the United States will likely be subject to foreign regulatory requirements, which can vary greatly from country to country. As a result, the time required to obtain clearances or approvals outside the United States may differ from that required to obtain FDA clearance or approval and we may not be able to obtain foreign regulatory approvals on a timely basis or at all. Clearance or approval by the FDA does not ensure approval by regulatory authorities in other countries, and approval by one foreign regulatory authority does not ensure approval by regulatory authorities in other countries or by the FDA. In Europe, we would need to comply with the Medical Device Directive 93/42 EEC and/or the In Vitro Diagnostics Directive 98/79/EC, which are required to market medical devices in the European Union. These directives have been replaced by Medical Device Regulation 2017/745 and In Vitro Diagnostic Regulation 2017/746, with official entry into force in May 26, 2017 and date of applications of May 26, 2020 and May 26, 2022 respectively. This will increase the difficulty of regulatory approvals in Europe in the future. In addition, the FDA regulates exports of medical devices. Failure to comply with these regulatory requirements or obtain and maintain required approvals, clearances and certifications could impair our ability to commercialize our products for diagnostic use outside of the United States.

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Our products could become subject to regulation as medical devices by the FDA or other regulatory agencies before we have obtained regulatory clearance or approval to market our products for diagnostic purposes, which would adversely impact our ability to market and sell our products and harm our business.

As products that are currently labeled, promoted and intended for RUO, our products are not currently subject to regulation as medical devices by the FDA or comparable agencies of other countries. However, the FDA or comparable agencies of other countries could disagree with our conclusion that our products are currently intended for research use only or deem our current marketing and promotional efforts as being inconsistent with research use only products. For example, our customers may independently elect to use our research use only labeled products in their own laboratory developed tests, or LDTs, for clinical diagnostic use. The FDA has historically exercised enforcement discretion in not enforcing the medical device regulations against laboratories offering LDTs. However, on October 3, 2014, the FDA issued two draft guidance documents that set forth the FDA's proposed risk-based framework for regulating LDTs, which are designed, manufactured, and used within a single laboratory. The draft guidance documents provide the anticipated details through which the FDA would propose to establish an LDT oversight framework, including premarket review for higher-risk LDTs, such as those that have the same intended use as FDA-approved or cleared companion diagnostic tests currently on the market. In January 2017, the FDA announced that it would not issue final guidance on the oversight of LDTs and LDT manufacturers, but would seek further public discussion on an appropriate oversight approach, and give Congress an opportunity to develop a legislative solution. Any future legislative or administrative rule making or oversight of LDTs and LDT manufacturers, if and when finalized, may impact the sales of our products and how customers use our products, and may require us to change our business model in order to maintain compliance with these laws. We cannot predict how these various efforts will be resolved, how Congress or the FDA will regulate LDTs in the future, or how that regulatory system will impact our business.

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

If the FDA modifies its approach to our products labeled and intended for RUO, or otherwise determines our products or related applications should be subject to additional regulation as in vitro diagnostic devices based upon customers use of our products for clinical diagnostic or therapeutic purposes, before we have obtained regulatory clearance or approval to market our products for diagnostic purposes, our ability to market and sell our products could be impeded and our business, prospects, results of operations and financial condition may be adversely affected. In addition, if the FDA determines that our products labeled for RUO were intended, based on a review of the totality of circumstances, for use in clinical investigation or diagnosis, those products could be considered misbranded or adulterated under the Federal Food, Drug, and Cosmetic Act and subject to recall and/or other enforcement action.

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Compliance or the failure to comply with current and future regulations affecting our products and business operations worldwide, such as environmental regulations enacted in the European Union, could cause us significant expense and adversely impact our business.

We are subject to many federal, state, local, and foreign regulations relating to various aspects of our business operations. Governmental entities at all levels are continuously enacting new regulations, and it is difficult to identify all applicable regulations and anticipate how such regulations will be implemented and enforced. We continue to evaluate the necessary steps for compliance with applicable regulations. To comply with applicable regulations, we have and will continue to incur significant expense and allocate valuable internal resources to manage compliance-related issues. In addition, such regulations could restrict our ability to expand or equip our facilities, or could require us to acquire costly equipment or to incur other significant expenses to comply with the regulations. For example, the Restriction on the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Directive, or RoHS, and the Waste Electrical and Electronic Equipment Directive, or WEEE, enacted in the European Union, regulate the use of certain hazardous substances in, and require the collection, reuse, and recycling of waste from, products we manufacture. Certain of our products sold in these countries are subject to WEEE and RoHS. These and similar regulations that have been or are in the process of being enacted in other countries may require us to redesign our products, use different types of materials in certain components, or source alternative components to ensure compliance with applicable standards, and may reduce the availability of parts and components used in our products by negatively impacting our suppliers' ability to source parts and components in a timely and cost-effective manner.

Any such redesigns, required use of alternative materials, or limited availability of parts and components used in our products may detrimentally impact the performance of our products, add greater testing lead times for product introductions, reduce our product margins, or limit the markets for our products, and if we fail to comply with any present and future regulations, we could be subject to future fines, penalties, and restrictions, such as the suspension of manufacturing of our products or a prohibition on the sale of products we manufacture. Any of the foregoing could adversely affect our business, financial condition, or results of operations.

If we fail to maintain effective internal control over financial reporting in the future, the accuracy and timing of our financial reporting may be impaired, which could adversely affect our business and our stock price.

The Sarbanes-Oxley Act requires, among other things, that we maintain effective internal control over financial reporting and disclosure controls and procedures. In particular, we must perform system and process evaluation and testing of our internal control over financial reporting to allow management to report on the effectiveness of our internal control over financial reporting, as required by Section 404 of the Sarbanes-Oxley Act. Our testing may reveal deficiencies in our internal control over financial reporting that are deemed to be material weaknesses.

Our compliance with Section 404 requires that we incur substantial accounting expense and expend significant management time on compliance-related issues. We currently do not have an internal audit group, and we continue to evaluate our need for additional accounting and financial staff with appropriate public company experience and technical accounting knowledge. Moreover, if we do not comply with the requirements of Section 404, or if we or our independent registered public accounting firm identify deficiencies in our internal control over financial reporting that are deemed to be material weaknesses, the market price of our stock could decline and we could be subject to sanctions or investigations by the NASDAQ Global Select Market, or NASDAQ, the SEC or other regulatory authorities, which would require additional financial and management resources.

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Our future capital needs are uncertain and we may need to raise additional funds in the future, which may cause dilution to stockholders or may be upon terms that are not favorable to us.

We believe that our existing cash and cash equivalents and availability under the Revolving Credit Facility will be sufficient to meet our anticipated cash requirements for at least the next 18 months. We have continued to experience losses and, if that trend continues, we may need to seek additional sources of financing. In addition, we may need to raise substantial additional capital for various purposes, including:

expanding the commercialization of our products;

funding our operations;

furthering our research and development; and

acquiring other businesses or assets and licensing technologies.

Our future funding requirements will depend on many factors, including:

market acceptance of our products;

the cost of our research and development activities;

the cost of filing and prosecuting patent applications;

the cost of defending any litigation including intellectual property, employment, contractual or other litigation;

the cost and timing of regulatory clearances or approvals, if any;

the cost and timing of establishing additional sales, marketing, and distribution capabilities;

the cost and timing of establishing additional technical support capabilities;

fluctuations in cash demands (e.g., due to interest payments or payouts under existing cash compensation plans);

sales variability through the year and timing of related cash collections;

the effectiveness of our recent efficiency and cost-savings initiatives;

the effect of competing technological and market developments; and

the extent to which we acquire or invest in businesses, products, and technologies, although we currently have no commitments or agreements relating to any of these types of transactions.

To the extent we draw on our \$15.0 million revolving senior credit facility (the 2018 Facility) or otherwise incur additional indebtedness, the risks described above could increase. Further, if we increase our indebtedness, our actual cash requirements in the future may be greater than expected. Our cash flow from operations may not be sufficient to repay all of the outstanding debt as it becomes due, and we cannot assure you that we will be able to obtain additional funds on acceptable terms, or at all. If we raise additional funds by issuing equity securities, our stockholders may experience dilution. Debt financing in addition to the 2018 Facility, if available, may involve covenants restricting our operations or our ability to incur additional debt. Any additional debt or equity financing that we raise may contain terms that are not favorable to us or our stockholders. If we raise additional funds through collaboration and licensing arrangements with third parties, it may be necessary to relinquish some rights to our technologies or our products, or grant licenses on terms that are not favorable to us. If we are unable to raise adequate funds, we may have to liquidate some or all of our assets, delay development or commercialization of our products, or license to third parties the rights to commercialize products or

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technologies that we would otherwise seek to commercialize. We also may have to reduce marketing, customer support, or other resources devoted to our products, or cease operations. Any of these factors could harm our operating results.

If we fail to comply with the covenants and other obligations under our credit facility, the lenders may be able to accelerate amounts owed under the facilities and may foreclose upon the assets securing our obligations.

In August 2018, we entered into the Revolving Credit Facility. The Revolving Credit Facility provides for secured revolving loans in an aggregate amount of up to \$15.0 million. The Revolving Credit Facility is secured by substantially all of the Company's assets, other than intellectual property. The Revolving Credit Facility contains customary affirmative and negative covenants which, unless waived by the bank, limit the Company's ability to, among other things, incur additional indebtedness, grant liens, make investments, repurchase stock, pay dividends, transfer assets, enter into affiliate transactions, undergo a change of control, or engage in merger and acquisition activity, including merging or consolidating with a third party. If we fail to comply with the covenants and our other obligations under the 2018 Facility, the lenders would be able to accelerate the required repayment of amounts due under the 2018 Credit Agreement and, if they are not repaid, could foreclose upon the assets securing our obligations under the 2018 Facility.

We are subject to risks related to taxation in multiple jurisdictions and if taxing authorities disagree with our interpretations of existing tax laws or regulations, our effective income tax rate could be adversely affected and we could have additional tax liability.

We are subject to income taxes in both the United States and certain foreign jurisdictions. Significant judgments based on interpretations of existing tax laws or regulations are required in determining the provision for income taxes. For example, we have made certain interpretations of existing tax laws or regulations based upon the operations of our business internationally and we have implemented intercompany agreements based upon these interpretations and related transfer pricing analyses. If the U.S. Internal Revenue Service or other taxing authorities disagree with the positions, our effective income tax rate could be adversely affected and we could have additional tax liability, including interest and penalties. From time to time, we may review our corporate structure and tax positions in other international jurisdictions and such review may result in additional changes to how we structure our international business operations, which may adversely impact our effective income tax rate. Our effective income tax rate could also be adversely affected by 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 laws or tax rates, changes in the level of non-deductible expenses (including share-based compensation), changes in our future levels of research and development spending, mergers and acquisitions, or the result of examinations by various tax authorities. Legislation commonly referred to as the 2017 Tax Cuts and Jobs Act was enacted in the United States on December 22, 2017 and introduced a number of changes to U.S. federal income tax laws. Based on our current assessment, we do not believe the impact of this legislation would be material, but our assumptions may prove to be wrong. Payment of additional amounts as a result of changes in applicable tax law or upon final adjudication of any disputes could have a material impact on our results of operations and financial position.

Adverse conditions in the global economy and disruption of financial markets may significantly harm our revenue, profitability, and results of operations.

The global credit and financial markets have in recent years experienced volatility and disruptions, including diminished liquidity and credit availability, increased concerns about inflation and deflation, and the downgrade of U.S. debt and exposure risks on other sovereign debts, decreased consumer confidence, lower economic growth, volatile energy costs, increased unemployment rates, and uncertainty about economic stability. Volatility and

disruption of financial markets could limit our

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customers' ability to obtain adequate financing or credit to purchase and pay for our products in a timely manner or to maintain operations, which could result in a decrease in sales volume that could harm our results of operations. General concerns about the fundamental soundness of domestic and international economies may also cause our customers to reduce their purchases. Changes in governmental banking, monetary, and fiscal policies to address liquidity and increase credit availability may not be effective. Significant government investment and allocation of resources to assist the economic recovery of sectors which do not include our customers may reduce the resources available for government grants and related funding for life science, Ag-Bio, and clinical research and development. Continuation or further deterioration of these financial and macroeconomic conditions could significantly harm our sales, profitability, and results of operations.

We may pursue acquisitions of complementary businesses, products of technologies to grow our business. If we are unable to identify, finance, or integrate future acquisitions successfully, our operating results and prospects could be harmed.

In order to grow our business, we may make acquisitions to improve our product offerings and technologies or to expand into new markets. Our future acquisition strategy will depend on our ability to identify, negotiate, complete, and integrate acquisitions and, if necessary, to obtain satisfactory debt or equity financing to fund those acquisitions. Mergers and acquisitions are inherently risky, and any transaction we complete may not be successful. To date, we have completed only one material acquisition, the acquisition of DVS in 2014, and there can be no assurances that we will be able to source, negotiate, or complete acquisitions that are complementary to our business. In addition, we may be required to finance future acquisitions through debt financings, which may not be available on terms our board of directors believes to be commercially reasonable, or we may fund acquisitions through the issuance of equity securities, which could be dilutive to existing stockholders. Any merger or acquisition we may pursue would involve numerous risks, including but not limited to the following:

difficulties in integrating and managing the operations, technologies, and products of the companies we acquire;

diversion of our management's attention from normal daily operation of our business;

our inability to maintain the key business relationships and the reputations of the businesses we acquire;

our inability to retain key personnel of the acquired company;

uncertainty of entry into markets in which we have limited or no prior experience and in which competitors have stronger market positions;

our dependence on unfamiliar affiliates and customers of the companies we acquire;

insufficient revenue to offset our increased expenses associated with acquisitions;

our responsibility for the liabilities of the businesses we acquire, including those which we may not anticipate; and

our inability to maintain internal standards, controls, procedures, and policies.

Furthermore, market reaction to any proposed or completed acquisition may be negative which may materially and adversely affect the market price of our common stock.

If we are unable to expand our direct sales and marketing force or distribution capabilities to adequately address our customers' needs, our business may be adversely affected.

We may not be able to market, sell, and, distribute our products effectively enough to support our planned growth. We sell our products primarily through our own sales force and through distributors in

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certain territories. Our future sales will depend in large part on our ability to continue to develop and substantially expand our direct sales force and to increase the scope of our marketing efforts. Our products are technically complex and used for highly specialized applications. As a result, we believe it is necessary to continue to develop a direct sales force that includes people with specific scientific backgrounds and expertise, and a marketing group with technical sophistication. Competition for such employees is intense. In addition, we have experienced significant changes in our sales organization in recent quarters due to reorganizations and changes in leadership. We may not be able to attract and retain personnel or be able to build an efficient and effective sales and marketing force, which would negatively impact sales of our products and reduce our revenue and profitability.

In addition, we may continue to enlist one or more sales representatives and distributors to assist with sales, distribution, and customer support globally or in certain regions of the world. If we do seek to enter into such arrangements, we may not be successful in attracting desirable sales representatives and distributors, or we may not be able to enter into such arrangements on favorable terms. If our sales and marketing efforts, or those of any third-party sales representatives and distributors, are not successful, our technologies and products may not gain market acceptance, which would materially and adversely impact our business operations.

If we seek to implement a company-wide implementation of an enterprise resource planning, or ERP, system, such implementation could adversely affect our business and results of operations or the effectiveness of internal control over financial reporting.

We have considered implementing a company-wide ERP system to handle the business and financial processes within our operations and corporate functions. ERP implementations are complex and time-consuming projects that involve substantial expenditures on system software 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. If we decide to implement a company-wide 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 the 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.

Changes in accounting principles, or interpretations thereof, could have a significant impact on our financial position and results of operations.

We prepare our consolidated financial statements in accordance with accounting principles generally accepted in the United States of America, referred to as U.S. GAAP. These principles are subject to interpretation by the SEC and various bodies formed to interpret and create appropriate accounting principles. A change in these principles can have a significant effect on our reported results and may even retroactively affect previously reported transactions. Additionally, the adoption of new or revised accounting principles may require that we make significant changes to our systems, processes and controls.

For example, the U.S.-based Financial Accounting Standards Board, referred to as FASB, is currently working together with the International Accounting Standards Board, referred to IASB, on several projects to further align accounting principles and facilitate more comparable financial reporting between companies who are required to follow U.S. GAAP under SEC regulations and those who are required to follow International Financial Reporting Standards outside of the United States. These efforts by the FASB and IASB may result in different accounting principles under U.S. GAAP that may result in materially different financial results for us in areas including, but not limited to, principles for recognizing revenue and lease accounting. Additionally, significant changes to U.S. GAAP resulting from

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the FASB's and IASB's efforts may require that we change how we process, analyze and report financial information and that we change financial reporting controls. Additionally, the FASB issued new guidance (ASU 2014-09) relating to Revenue from Contracts with Customers which supersedes nearly all existing U.S. GAAP revenue recognition guidance. The new guidance is effective for our fiscal year 2018. We adopted ASU 2014-09 in the first quarter of 2018 using the modified retrospective method. The adoption is not expected to have a material impact on our consolidated financial statements. Under the modified retrospective method, periods prior to the adoption of ASU 2014-09 are not restated and the cumulative effect of initially applying the new standard is reflected in the opening balance of retained earnings as of January 1, 2018. Additional disclosures are required for significant differences between the reported results under the new standard and those that would have been reported under the legacy standard. While we continue to evaluate the effect of the new standard on our ongoing financial reporting, we currently do not expect the cumulative effect of the new standard to be material. We continue to identify the appropriate changes to our business processes, systems, and controls to support revenue recognition and disclosure under the new standard.

It is not clear if or when these potential changes in accounting principles may become effective, whether we have the proper systems and controls in place to accommodate such changes and the impact that any such changes may have on our financial position and results of operations.

Our ability to use net operating loss carryforwards to offset future taxable income for U.S. federal income tax purposes and other tax benefits may be limited.

Section 382 of the Internal Revenue Code of 1986, as amended, referred to as the Code, imposes an annual limitation on the amount of taxable income that may be offset if a corporation experiences an ownership change as defined in Section 382 of the Code. An ownership change occurs when a company's five-percent shareholders (as defined in Section 382 of the Code) collectively increase their ownership in the company by more than 50 percentage points (by value) over a rolling three-year period. Additionally, various states have similar limitations on the use of state net operating losses, referred to as our NOLs, following an ownership change.

If we experience an ownership change, our ability to use our NOLs, any loss or deduction attributable to a net unrealized built-in loss and other tax attributes, which we refer to as tax benefits, could be substantially limited, and the timing of the usage of the tax benefits could be substantially delayed, which could significantly impair the value of the tax benefits. There is no assurance that we will be able to fully utilize the tax benefits and we could be required to record an additional valuation allowance related to the amount of the tax benefits that may not be realized, which could adversely impact our results of operations.

We believe that these tax benefits are a valuable asset for us. However, legislation commonly known as the 2017 Tax Cuts and Jobs Act includes a decrease in the U.S. federal corporate income tax rate from 35% to 21%, and our tax benefits were revalued at the newly enacted rate. We do not expect this to have a material impact on our financial statements because we currently maintain a full valuation allowance on our U.S. deferred tax assets; however, this reduction in the U.S. federal corporate income tax rate results in a corresponding reduction in the value of our tax benefits. We believe our NOLs are not at material risk of limitation based on an ownership change pursuant to Section 382 and we will continue to monitor our NOLs and any needs for tax benefit preservation plans. Any future tax benefit preservation plan could make it more difficult for a third party to acquire, or could discourage a third party from acquiring, us or a large block of our common stock.

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We have a significant amount of outstanding indebtedness, and our financial condition and results of operations could be adversely affected if we do not efficiently manage our liabilities.

As of September 30, 2018, we had outstanding \$150.0 million aggregate principal amount of our 2018 Notes and \$51.3 million aggregate principal amount of our 2014 Notes. This significant amount of debt has important risks to us and our investors, including:

requiring a portion of our cash flow from operations to make interest payments on this debt;

increasing our vulnerability to general adverse economic and industry conditions;

reducing the cash flow available to fund capital expenditures and other corporate purposes and to grow our business;

limiting our flexibility in planning for, or reacting to, changes in our business and the industry; and

limiting our ability to borrow additional funds as needed or take advantage of business opportunities as they arise.

In addition, to the extent we draw on our Revolving Credit Facility or otherwise incur additional indebtedness, the risks described above could increase. Further, if we increase our indebtedness, our actual cash requirements in the future may be greater than expected. Our cash flow from operations may not be sufficient to repay all of the outstanding debt as it becomes due, and we may not be able to borrow money, sell assets or otherwise raise funds on acceptable terms, or at all, to refinance our debt.

Risks Related to Intellectual Property

Our ability to protect our intellectual property and proprietary technology through patents and other means is uncertain.

Our commercial success depends in part on our ability to protect our intellectual property and proprietary technologies. We rely on patent protection, where appropriate and available, as well as a combination of copyright, trade secret, and trademark laws, and nondisclosure, confidentiality, and other contractual restrictions to protect our proprietary technology. However, these legal means afford only limited protection and may not adequately protect our rights or permit us to gain or keep any competitive advantage. We apply for patents covering our products and technologies and uses thereof, as we deem appropriate. However, we may fail to apply for patents on important products and technologies in a timely fashion or at all. Our pending U.S. and foreign patent applications may not issue as patents or may not issue in a form that will be sufficient to protect our proprietary technology and gain or keep our competitive advantage. Any patents we have obtained or do obtain may be subject to re-examination, reissue, opposition, or other administrative proceeding, or may be challenged in litigation, and such challenges could result in a determination that the patent is invalid or unenforceable. In addition, competitors may be able to design alternative methods or devices that avoid infringement of our patents. Both the patent application process and the process of managing patent disputes can be time consuming and expensive.

Furthermore, the laws of some foreign countries may not protect our intellectual property rights to the same extent as do the laws of the United States, and many companies have encountered significant problems in protecting and defending such rights in foreign jurisdictions. Proceedings to enforce our patent rights in foreign jurisdictions could result in substantial cost and divert our efforts and attention from other aspects of our business. 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. For example:

We might not have been the first to make the inventions covered by each of our pending patent applications;

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We might not have been the first to file patent applications for these inventions;

The patents of others may have an adverse effect on our business; and

Others may independently develop similar or alternative products and technologies or duplicate any of our products and technologies.

To the extent our intellectual property, including licensed intellectual property, offers inadequate protection, or is found to be invalid or unenforceable, our competitive position and our business could be adversely affected.

We may be involved in lawsuits to protect or enforce our patents and proprietary rights, to determine the scope, coverage and validity of others' proprietary rights, or to defend against third party claims of intellectual property infringement, any of which could be time-intensive and costly and may adversely impact our business or stock price.

Litigation may be necessary for us to enforce our patent and proprietary rights, determine the scope, coverage, and validity of others' proprietary rights, and/or defend against third party claims of intellectual property infringement against us as well as against our suppliers, distributors, customers, and other entities with whom we do business. Litigation could result in substantial legal fees and could adversely affect the scope of our patent protection. The outcome of any litigation or other proceeding is inherently uncertain and might not be favorable to us, and we might not be able to obtain licenses to technology that we require. Even if such licenses are obtainable, they may not be available at a reasonable cost. We could therefore incur substantial costs related to royalty payments for licenses obtained from third parties, which could negatively affect our product margins or financial position. Further, we could encounter delays in product introductions, or interruptions in product sales, as we develop alternative methods or products.

As we move into new markets and applications for our products, incumbent participants in such markets may assert their patents and other proprietary rights against us as a means of impeding our entry into such markets or as a means to extract substantial license and royalty payments from us. Our commercial success may depend in part on our non-infringement of the patents or proprietary rights of third parties. Numerous significant intellectual property issues have been litigated, and will likely continue to be litigated, between existing and new participants in our existing and targeted markets. For example, some of our products provide for the testing and analysis of genetic material, and patent rights relating to genetic materials remain a developing area of patent law. A recent U.S. Supreme Court decision held, among other things, that claims to isolated genomic DNA occurring in nature are not patent eligible, while claims relating to synthetic DNA may be patent eligible. We expect the ruling will result in additional litigation in our industry. In addition, third parties may assert that we are employing their proprietary technology without authorization, and if they are successful in making such claims, we may be forced to enter into license agreements, pay additional royalties or license fees, or enter into settlements that include monetary obligations or restrictions on our business.

Our customers have been sued for various claims of intellectual property infringement in the past, and we expect that our customers will be involved in additional litigation in the future. In particular, our customers may become subject to lawsuits claiming that their use of our products infringes third-party patent rights, and we could become subject to claims that we contributed to or induced our customer's infringement. In addition, our agreements with some of our suppliers, distributors, customers, and other entities with whom we do business may require us to defend or indemnify these parties to the extent they become involved in infringement claims against us, including the claims described above. We could also voluntarily agree to defend or indemnify third parties in instances where we are not obligated to

do so if we determine it would be important to our business relationships. If we are required or agree to defend or indemnify any of these third parties in connection with any infringement claims, we could incur

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significant costs and expenses that could adversely affect our business, operating results, or financial condition.

We may be subject to damages resulting from claims that we or our employees have wrongfully used or disclosed alleged trade secrets of our employees former employers or other institutions or third parties with whom such employees may have been previously affiliated.

Many of our employees were previously employed at universities or other life science or Ag-Bio companies, including our competitors or potential competitors. In the future, we may become subject to claims that our employees, or we, have inadvertently or otherwise used or disclosed trade secrets or other proprietary information of their former employers or other third parties or institutions with whom our employees may have been previously affiliated. Litigation may be necessary to defend against these claims. For example, we were a defendant in litigation brought against us and one of our non-executive employees by Thermo Fisher Scientific Inc. (Thermo) alleging, among other claims, misappropriation of proprietary information and breach of contractual and fiduciary obligations. While we resolved our dispute with Thermo in July 2017, if we fail in defending against similar claims brought in the future we could be subject to injunctive relief against us. A loss of key research personnel work product could hamper or prevent our ability to commercialize certain potential products or a loss of or inability to hire key marketing, sales or research and development personnel could adversely affect our future product development, sales and revenues, any of which could severely harm our business. Even if we are successful in defending against any similar claims brought in the future, litigation could result in substantial costs and be a distraction to management.

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, which would have an adverse effect on our business.

We rely on licenses in order to be able to use various proprietary technologies that are material to our business, including our core IFC, multi-layer soft lithography, and mass cytometry technologies. In some cases, we do not control the prosecution, maintenance, or filing of the patents to which we hold licenses, or the enforcement of these patents against third parties. Additionally, our business and product development plans anticipate and may substantially depend on future in-license agreements with additional third parties, some of which are currently in the early discussion phase. For example, Fluidigm Canada Inc., or Fluidigm Canada, an Ontario corporation and wholly-owned subsidiary of Fluidigm Sciences, was party to an interim license agreement, now expired, with Nodality, Inc., or Nodality, under which Nodality granted Fluidigm Canada a worldwide, non-exclusive, research use only, royalty bearing license to certain cytometric reagents, instruments, and other products. While we were able to secure a license under a new license agreement with Nodality, we cannot provide assurances that we will always be able to obtain suitable license rights to technologies or intellectual property of other third parties on acceptable terms, if at all.

In-licensed intellectual property rights that are fundamental to the business being operated present numerous risks and limitations. For example, all or a portion of the license rights granted may be limited for research use only, and in the event we attempt to expand into diagnostic applications, we would be required to negotiate additional rights, which may not be available to us on commercially reasonable terms, if at all.

Our rights to use the technology we license are also subject to the negotiation and continuation of those licenses. Certain of our licenses contain provisions that allow the licensor to terminate the license upon specific conditions. Our rights under the licenses are subject to our continued compliance with the terms of the license, including the payment of royalties due under the license. Because of the complexity of our products and the patents we have licensed, determining the scope of the license and related royalty obligation can be difficult and can lead to disputes between us and the licensor. An unfavorable

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resolution of such a dispute could lead to an increase in the royalties payable pursuant to the license. If a licensor believed we were not paying the royalties due under the license or were otherwise not in compliance with the terms of the license, the licensor might attempt to revoke the license. If such an attempt were successful and the license is terminated, we might be barred from marketing, producing, and selling some or all of our products, which would have an adverse effect on our business. Potential disputes between us and one of our existing licensors concerning the terms or conditions of the applicable license agreement could result, among other risks, in substantial management distraction; increased expenses associated with litigation or efforts to resolve disputes; substantial customer uncertainty concerning the direction of our product lines; potential infringement claims against us and/or our customers, which could include efforts by a licensor to enjoin sales of our products; customer requests for indemnification by us; and, in the event of an adverse determination, our inability to operate our business as currently operated. Termination of material license agreements could prevent us from manufacturing and selling our products unless we can negotiate new license terms or develop or acquire alternative intellectual property rights that cover or enable similar functionality. Any of these factors would be expected to have a material adverse effect on our business, operating results, and financial condition and could result in a substantial decline in our stock price.

We are subject to certain manufacturing restrictions related to licensed technologies that were developed with the financial assistance of U.S. governmental grants.

We are subject to certain U.S. government regulations because we have licensed technologies that were developed with U.S. government grants. 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, referred to as 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. All of our microfluidic systems revenue is dependent upon the availability of our IFCs, which incorporate technology developed with U.S. government grants. Our genomics instruments, including microfluidic systems, and IFCs are manufactured at our facility in Singapore. The federal regulations allow the funding government agency to grant, at the request of the licensors of such technology, a waiver of the domestic manufacturing requirement. Waivers may be requested prior to any government notification. We have assisted the licensors of these technologies with the analysis of the domestic manufacturing requirement, and, in December 2008, the sole licensor subject to the requirement applied for a waiver of the domestic manufacturing requirement with respect to the relevant patents licensed to us by this licensor. In July 2009, the funding government agency granted the requested waiver of the domestic manufacturing requirement for a three-year period commencing in July 2009. In June 2012, the licensor requested a continued waiver of the domestic manufacturing requirement with respect to the relevant patents, but the government agency has not yet taken any action in response to this request. If the government agency does not grant the requested waiver or the government fails to grant additional waivers of such requirement that may be sought in the future, then the U.S. government could exercise its march-in rights with respect to the relevant patents licensed to us. In addition, the license agreement under which the relevant patents are licensed to us contains provisions that obligate us to comply with this domestic manufacturing requirement. We are not currently manufacturing instruments and IFCs in the United States that incorporate the relevant licensed technology. If our lack of compliance with this provision constituted a material breach of the license agreement, the license of the relevant patents could be terminated or we could be compelled to relocate our manufacturing of microfluidic systems and IFCs to the United States to avoid or cure a material breach of the license agreement. Any of the exercise of march-in rights, the termination of our license of the relevant patents or the relocation of our manufacturing of microfluidic systems and IFCs to the United States could materially adversely affect our business, operations and financial condition.

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We may be subject to information technology failures, including data protection breaches and cyber-attacks, that could disrupt our operations, damage our reputation and adversely affect our business, operations, and financial results.

We rely on our information technology systems for the effective operation of our business and for the secure maintenance and storage of confidential data relating to our business and third-party businesses. Although we have implemented security controls to protect our information technology systems, experienced programmers or hackers may be able to penetrate our security controls, and develop and deploy viruses, worms, and other malicious software programs that compromise our confidential information or that of third parties and cause a disruption or failure of our information technology systems. Any such compromise of our information technology systems could result in the unauthorized publication of our confidential business or proprietary information, result in the unauthorized release of customer, supplier or employee data, result in a violation of privacy or other laws, expose us to a risk of litigation, or damage our reputation. The cost and operational consequences of implementing further data protection measures either as a response to specific breaches or as a result of evolving risks, could be significant. In addition, our inability to use or access our information systems at critical points in time could adversely affect the timely and efficient operation of our business. Any delayed sales, significant costs or lost customers resulting from these technology failures could adversely affect our business, operations, and financial results.

Third parties with which we conduct business have access to certain portions of our sensitive data. In the event that these third parties do not properly safeguard our data that they hold, security breaches could result and negatively impact our business, operations, and financial results.

We are subject to certain obligations and restrictions relating to technologies developed in cooperation with Canadian government agencies.

Some of our Canadian research and development is funded in part through government grants and by government agencies. The intellectual property developed through these projects is subject to rights and restrictions in favor of government agencies and Canadians generally. In most cases the government agency retains the right to use intellectual property developed through the project for non-commercial purposes and to publish the results of research conducted in connection with the project. This may increase the risk of public disclosure of information relating to our intellectual property, including confidential information, and may reduce its competitive advantage in commercializing intellectual property developed through these projects. In certain projects, we have also agreed to use commercially reasonable efforts to commercialize intellectual property in Canada, or more specifically in the province of Ontario, for the economic benefit of Canada and the province of Ontario. These restrictions will limit our choice of business and manufacturing locations, business partners and corporate structure and may, in certain circumstances, restrict our ability to achieve maximum profitability and cost efficiency from the intellectual property generated by these projects. In one instance, a dispute with the applicable government funded entity may require mediation, which could lead to unanticipated delays in our commercialization efforts to that project. One of our Canadian government funded projects is also subject to certain limited march-in rights in favor of the government of the Province of Ontario, under which we may be required to grant a license to our intellectual property, including background intellectual property developed outside the scope of the project, to a responsible applicant on reasonable terms in circumstances where the government determines that such a license is necessary in order to alleviate emergency or extraordinary health or safety needs or for public use. In addition, we must provide reasonable assistance to the government in obtaining similar licenses from third parties required in connection with the use of its intellectual property. Instances in which the government of the Province of Ontario has exercised similar march-in rights are rare; however, the exercise of such rights could materially adversely affect our business, operations and financial condition.

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Risks Related to Our Outstanding Convertible Notes

Our outstanding convertible notes are effectively subordinated to our secured debt and any liabilities of our subsidiaries.

Our outstanding 2014 Notes and 2018 Notes, which, collectively, we refer to as our Notes, rank:

senior in right of payment to any of our indebtedness that is expressly subordinated in right of payment to the Notes;

equal in right of payment to all of our liabilities that are not so subordinated;

effectively junior in right of payment to any of our secured indebtedness, including, but not limited to, any indebtedness under the Revolving Credit Facility, to the extent of the value of the assets securing such indebtedness; and

structurally junior to all indebtedness and other liabilities (including trade payables) of our subsidiaries. In February 2014, we completed the offering of our 2014 Notes with an aggregate outstanding principal amount of \$201.3 million. In March 2018, we completed an exchange of \$150.0 million in aggregate principal amount of our 2014 Notes for \$150.0 million in aggregate principal amount of our 2018 Notes, leaving approximately \$51.3 million in aggregate principal amount of 2014 Notes outstanding. In the event of our bankruptcy, liquidation, reorganization, or other winding up, our assets that secure debt ranks senior in right of payment to Notes will be available to pay obligations on the Notes only after the secured debt, including, but not limited to, any indebtedness under the Revolving Credit Facility, has been repaid in full from these assets, and the assets of our subsidiaries will be available to pay obligations on the Notes only after all claims senior to the Notes have been repaid in full. There may not be sufficient assets remaining to pay amounts due on any or all of the Notes then outstanding. The indentures governing the Notes do not prohibit us from incurring additional senior debt or secured debt, nor do they prohibit our subsidiaries from incurring additional liabilities.

We have incurred additional debt and may still incur substantially more debt or take other actions which would intensify the risks discussed above.

We are not restricted under the terms of the indentures governing the Notes from incurring additional debt, securing existing or future debt, recapitalizing our debt, or taking a number of other actions that are not limited by the terms of the indentures governing the Notes that could have the effect of diminishing our ability to make payments on the Notes when due. Any failure by us or any of our significant subsidiaries to make any payment at maturity of indebtedness for borrowed money in excess of \$15 million or the acceleration of any such indebtedness in excess of \$15 million would, subject to the terms of the applicable indenture governing the Notes, constitute a default under the indenture. If the repayment of the related indebtedness were to be accelerated after any applicable notice or grace periods, we may not have sufficient funds to repay the Notes when required.

In August 2018, we entered into the Revolving Credit Facility with Silicon Valley Bank, which matures on August 2, 2020. Amounts drawn under the Revolving Credit Facility will be used for working capital and general corporate

purposes. While we currently have no outstanding debt under the Revolving Credit Facility, we may incur up to \$15.0 million of secured debt pursuant to the Revolving Credit Facility . See Note 4 to the Condensed Consolidated Financial Statements included in our quarterly report on Form 10-Q for the quarter ended September 30, 2018 for more information about the Revolving Credit Facility.

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We may not have the ability to raise the funds necessary to repurchase the Notes upon specified dates or upon a fundamental change, and our future debt may contain limitations on our ability to repurchase the Notes.

Holders of the Notes have the right to require us to repurchase all or a portion of their Notes on certain dates or upon the occurrence of a fundamental change at a repurchase price equal to, for the 2014 Notes, 100% of the principal amount of the 2014 Notes to be repurchased or, for 2018 Notes, 100% of the accreted principal amount (i.e., up to 120% of the outstanding principal amount) of the 2018 Notes to be repurchased, plus, in each case, accrued and unpaid interest, if any. We may not have enough available cash or be able to obtain financing at the time we are required to make repurchases of Notes surrendered therefor.

In addition, our ability to repurchase the Notes may be limited by law, regulatory authority, or agreements governing our future indebtedness. Our failure to repurchase Notes at a time when the repurchase is required by the applicable indenture would constitute a default under the applicable indenture. A default under the applicable indenture or the fundamental change itself could also lead to a default under agreements governing our future indebtedness. If the repayment of the related indebtedness were to be accelerated after any applicable notice or grace periods, we may not have sufficient funds to repay the indebtedness and repurchase the Notes when required.

Any conversions of the Notes will dilute the ownership interest of our existing stockholders, including holders who had previously converted their notes.

Any conversion of some or all of the notes will dilute the ownership interests of our existing stockholders. The initial conversion price under the 2018 Notes is approximately \$7.8775 as compared to approximately \$55.94 under the 2014 Notes. As a result, each of the outstanding 2018 Notes is initially convertible into 126.9438 shares of our common stock per \$1,000 principal amount while our outstanding 2014 Notes are initially convertible into 17.8750 shares of our common stock per \$1,000 principal amount. Issuances of shares of common stock upon conversion of our Notes could depress the market price of our common stock and impair our ability to raise capital through the sale of additional equity securities. In addition, the existence of the Notes may encourage short selling by market participants because the conversion of the Notes could depress the price of our common stock.

Risks Relating to this Offering

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

We have broad discretion in the application of the net proceeds from this offering and could spend the proceeds in ways that do not improve our results of operations or enhance the value of our common stock. We intend to use the net proceeds from this offering for general corporate purposes, including working capital, capital expenditures, and continued research and development with respect to products and technologies. We may also use a portion of the net proceeds of this offering to fund possible investments in or acquisitions of complementary businesses, products, or technologies. As of the date of this prospectus supplement, we have no agreements or commitments to complete any such transaction. We have not allocated these net proceeds for any specific purposes. We might not be able to yield a significant return, if any, on any investment of these net proceeds. Stockholders will not have the opportunity to influence our management's decisions on how to use the net proceeds, and our failure to apply the funds effectively could have a material adverse effect on our business, delay the development of our product candidates and cause the price of our common stock to decline.

You may experience immediate and substantial dilution in the net tangible book value per share of the common stock you purchase.

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The price per share of our common stock being offered may be higher than the net tangible book value per share of our common stock outstanding prior to this offering. Assuming that an aggregate

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of _____ shares are sold at a price of \$ _____ per share, for aggregate net proceeds of \$ _____ in this offering, and after deducting the underwriting discount and estimated offering expenses payable by us, you will suffer immediate and substantial dilution of \$ _____ per share, representing the difference between the as adjusted net tangible book value per share of our common stock as of September 30, 2018 after giving effect to this offering and the assumed offering price.

You may experience future dilution as a result of future equity offerings.

To raise additional capital, we may in the future offer additional shares of our common stock or other securities convertible into or exchangeable for our common stock at prices that may not be the same as the price per share in this offering. We may sell shares or other securities in any other offering at a price per share that is less than the price per share paid by investors in this offering, and investors purchasing shares or other securities in the future could have rights superior to existing stockholders. The price per share at which we sell additional shares of our common stock, or securities convertible or exchangeable into common stock, in future transactions may be higher or lower than the price per share paid by investors in this offering.

Our stock price may fluctuate significantly, particularly if holders of substantial amounts of our stock attempt to sell, and holders may have difficulty selling their shares based on current trading volumes of our stock. In addition, numerous other factors could result in substantial volatility in the trading price of our stock.

Our stock is currently traded on NASDAQ, but we can provide no assurance that we will be able to maintain an active trading market on NASDAQ or any other exchange in the future. The trading volume of our stock tends to be low relative to our total outstanding shares, and we have several stockholders who hold substantial blocks of our stock. As of September 30, 2018, we had 39,315,785 shares of common stock outstanding, and stockholders holding at least 5% of our stock, individually or with affiliated persons or entities, collectively beneficially owned or controlled approximately 70.4% of such shares and one stockholder beneficially owned 32.4% of our outstanding common stock. Sales of large numbers of shares by any of our large stockholders could adversely affect our trading price, particularly given our relatively small historic trading volumes. If stockholders holding shares of our common stock sell, indicate an intention to sell, or if it is perceived that they will sell, substantial amounts of their common stock in the public market, the trading price of our common stock could decline. Moreover, if there is no active trading market or if the volume of trading is limited, holders of our common stock may have difficulty selling their shares. In addition, the concentration of ownership of our outstanding common stock (approximately 70.4% held by our top five stockholders as of September 30, 2018) means that a relatively small number of stockholders have significant control over the outcomes of stockholder voting.

In addition, the trading price of our common stock may be highly volatile and could be subject to wide fluctuations in response to various factors, some of which are beyond our control. These factors include:

actual or anticipated quarterly variation in our results of operations or the results of our competitors;

announcements or communications by us or our competitors relating to, among other things, new commercial products, technological advances, significant contracts, commercial relationships, capital commitments, acquisitions or sales of businesses, and/or misperceptions in or speculation by the market regarding such announcements or communications;

issuance of new or changed securities analysts' reports or recommendations for our stock;

developments or disputes concerning our intellectual property or other proprietary rights;

commencement of, or our involvement in, litigation;

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market conditions in the life science, Ag-Bio, and CRO sectors;

failure to complete significant sales;

manufacturing disruptions that could occur if we were unable to successfully expand our production in our current or an alternative facility;

any future sales of our common stock or other securities in connection with raising additional capital or otherwise;

any major change to the composition of our board of directors or management; and

general economic conditions and slow or negative growth of our markets.

The stock market in general, and market prices for the securities of technology-based companies like ours in particular, have from time to time experienced volatility that often has been unrelated to the operating performance of the underlying companies. These broad market and industry fluctuations may adversely affect the market price of our common stock regardless of our operating performance. In several recent situations where the market price of a stock has been volatile, holders of that stock have instituted securities class action litigation against the company that issued the stock. If any of our stockholders were to bring a lawsuit against us, the defense and disposition of the lawsuit could be costly and divert the time and attention of our management and harm our operating results.

If securities or industry analysts publish unfavorable research about our business or cease to cover our business, our stock price and/or trading volume could decline.

The trading market for our common stock may rely, in part, on the research and reports that equity research analysts publish about us and our business. We do not have any control of the analysts or the content and opinions included in their reports. The price of our stock could decline if one or more equity research analysts downgrade our stock or issue other unfavorable commentary or research. If one or more equity research analysts ceases coverage of our company or fails to publish reports on us regularly, demand for our stock could decrease, which in turn could cause our stock price or trading volume to decline.

Anti-takeover provisions in our charter documents and under Delaware law could make an acquisition of us, which may be beneficial to our stockholders, more difficult and may prevent attempts by our stockholders to replace or remove our current management and limit the market price of our common stock.

Provisions in our certificate of incorporation and bylaws may have the effect of delaying or preventing a change of control or changes in our management, including provisions that:

authorize our board of directors to issue, without further action by the stockholders, up to 10,000,000 shares of undesignated preferred stock;

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require that any action to be taken by our stockholders be effected at a duly called annual or special meeting and not by written consent;

specify that special meetings of our stockholders can be called only by our board of directors, the chairman of the board, the chief executive officer or the president;

establish an advance notice procedure for stockholder approvals to be brought before an annual meeting of our stockholders, including proposed nominations of persons for election to our board of directors;

establish that our board of directors is divided into three classes, Class I, Class II, and Class III, with each class serving staggered three year terms;

provide that our directors may be removed only for cause;

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provide that vacancies on our board of directors may be filled only by a majority of directors then in office, even though less than a quorum;

specify that no stockholder is permitted to cumulate votes at any election of directors; and

require a super-majority of votes to amend certain of the above-mentioned provisions.

These provisions may frustrate or prevent any attempts by our stockholders to replace or remove our current management by making it more difficult for stockholders to replace members of our board of directors, which is responsible for appointing the members of our management. In addition, because we are incorporated in Delaware, we are governed by the provisions of Section 203 of the Delaware General Corporation Law, which limits the ability of stockholders owning in excess of 15% of our outstanding voting stock to merge or combine with us.

We have never paid cash dividends on our capital stock, and we do not anticipate paying any cash dividends in the foreseeable future.

We have paid no cash dividends on any of our classes of capital stock to date and currently intend to retain our future earnings to fund the development and growth of our business. In addition, we cannot pay any cash dividends on any of our classes of common stock without approval from the lender under our 2018 Credit Facility, and may become subject to covenants under future debt arrangements that place restrictions on our ability to pay dividends. As a result, capital appreciation, if any, of our common stock will be stockholders' sole source of gain for the foreseeable future.

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SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus supplement, the accompanying prospectus and the SEC filings that are incorporated by reference into this prospectus supplement and the accompanying prospectus contain or incorporate by reference forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended, or Securities Act, and Section 21E of the Securities Exchange Act of 1934, as amended, or Exchange Act, that are based on our management's beliefs and assumptions and on information currently available to our management. Forward-looking statements include information concerning our possible or assumed future results of operations, business strategies, financing plans, competitive position, industry environment, potential growth opportunities and the effects of competition. Forward-looking statements include statements that are not historical facts and can be identified by terms such as anticipates, believes, could, seeks, estimates, expects, intends, may, plans, potential, prediction, will, would or similar expressions and the negatives of those terms. Although we believe that we have a reasonable basis for each forward-looking statement contained in this prospectus supplement, the accompanying prospectus and the SEC filings that are incorporated by reference into this prospectus supplement and the accompanying prospectus, we caution you that these statements are based on our projections of the future that are subject to known and unknown risks and uncertainties and other factors that may cause our actual results, level of activity, performance or achievements expressed or implied by these forward-looking statements, to differ. The sections in this prospectus supplement captioned "Risk Factors" and in the sections of our Annual Report on Form 10-K captioned "Management's Discussion and Analysis of Financial Condition and Results of Operations" and "Business," and in the sections of our Quarterly Reports on Form 10-Q captioned "Risk Factors" and "Management's Discussion and Analysis of Financial Condition and Results of Operations," as well as other sections in such documents, discuss some of the factors that could contribute to these differences.

Other unknown or unpredictable factors also could harm our results. Consequently, actual results or developments anticipated by us may not be realized or, even if substantially realized, may not have the expected consequences to, or effects on, us. Given these uncertainties, prospective investors are cautioned not to place undue reliance on such forward-looking statements. Except as required by law, we undertake no obligation to update or revise publicly any of the forward-looking statements after the date of this prospectus supplement.

This prospectus supplement, the accompanying prospectus, and the documents incorporated by reference in this prospectus supplement contain market data that we obtained from industry sources, including independent industry publications. In presenting this information, we have also made assumptions based on such data and other similar sources and on our knowledge of, and our experience to date in, the markets for our products. This data involves a number of assumptions and limitations, and you are cautioned not to give undue weight to such estimates. While we believe the market data included in this prospectus supplement is generally reliable, such information is inherently imprecise. In addition, projections, assumptions and estimates of our future performance and the future performance of the industry in which we operate are necessarily subject to a high degree of uncertainty and risk due to a variety of factors, including those described under the heading "Risk Factors" in this prospectus supplement and "Item 1A Risk Factors" of our most recent report on Form 10-K or 10-Q which is incorporated by reference in this prospectus supplement. These and other factors could cause results to differ materially from those expressed in the estimates made by the independent parties and by us.

All forward-looking statements are based on information available to us on the date of this prospectus supplement and we will not update any of the forward-looking statements after the date of this prospectus supplement, except as required by law. Our actual results could differ materially from those discussed in this prospectus supplement. The forward-looking statements contained in this prospectus supplement, and other written and oral forward-looking statements made by us from time to time, are

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subject to certain risks and uncertainties that could cause actual results to differ materially from those anticipated in the forward-looking statements. Factors that might cause such a difference include, but are not limited to, those discussed in the following discussion and within the section of this prospectus supplement captioned Risk Factors beginning on page S-6.

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 prospectus, and although 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 a thorough 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.

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USE OF PROCEEDS

We estimate that the net proceeds of this offering, after deducting underwriting discounts and commissions and estimated offering expenses payable by us, will be approximately \$ million (or approximately \$ million if the underwriters' option to acquire additional shares of our common stock is exercised in full).

We intend to use the net proceeds from this offering for general corporate purposes, including working capital, capital expenditures, and continued research and development with respect to products and technologies. We may also use a portion of the net proceeds of this offering to fund possible investments in or acquisitions of complementary businesses, products, or technologies. As of the date of this prospectus supplement, we have no agreements or commitments to complete any such transaction. Pending these uses, we intend to invest our net proceeds from this offering primarily in investment-grade, interest-bearing instruments.

As of the date of this prospectus supplement, we cannot specify with certainty all of the particular uses for the net proceeds to be received upon the completion of this offering. The amount and timing of our expenditures will depend on several factors, including cash flows from our operations and the anticipated growth of our business. Accordingly, our management will have broad discretion in the application of the net proceeds and investors will be relying on the judgment of our management regarding the application of the proceeds from this offering. We reserve the right to change the use of these proceeds as a result of certain contingencies such as the results of our commercialization efforts, competitive developments, opportunities to acquire products, technologies or businesses and other factors.

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**CERTAIN U.S. FEDERAL INCOME TAX CONSIDERATIONS FOR
NON-U.S. HOLDERS OF COMMON STOCK**

The following is a summary of the material U.S. federal income tax consequences of the ownership and disposition of our common stock to non-U.S. holders, but does not purport to be a complete analysis of all the potential tax considerations relating thereto. This summary is based upon the provisions of the Internal Revenue Code of 1986, as amended, or the Code, Treasury regulations promulgated thereunder, administrative rulings and judicial decisions, all as of the date hereof. These authorities may be changed, possibly retroactively, so as to result in U.S. federal tax consequences different from those set forth below. We have not sought any ruling from the IRS with respect to the statements made and the conclusions reached in the following summary, and there can be no assurance that the IRS will agree with such statements and conclusions.

This summary also does not address the tax considerations arising under the laws of any non-U.S., state or local jurisdiction or under U.S. federal gift and estate tax laws, except to the limited extent below. In addition, this discussion does not address tax considerations applicable to an investor's particular circumstances or to investors that may be subject to special tax rules, including, without limitation:

banks, insurance companies or other financial institutions;

persons subject to the alternative minimum tax or net investment income tax;

tax-exempt organizations or non-U.S. governments or governmental organizations;

controlled foreign corporations, passive foreign investment companies and corporations that accumulate earnings to avoid United States federal income tax;

brokers or dealers in securities or currencies;

traders in securities that elect to use a mark-to-market method of accounting for their securities holdings;

persons that own, or are deemed to own, more than five percent of our capital stock (except to the extent specifically set forth below);

certain former citizens or long-term residents of the United States;

entities or arrangements classified as partnerships for U.S. federal income tax purposes and other pass-through entities (and investors therein);

persons who hold our common stock as a position in a hedging transaction, straddle, conversion transaction or other risk reduction transaction;

persons who hold or receive our common stock pursuant to the exercise of any employee stock option or otherwise as compensation;

persons who do not hold our common stock as a capital asset (within the meaning of Section 1221 of the Code); or

persons deemed to sell our common stock under the constructive sale provisions of the Code.

In addition, if a partnership or entity or arrangement classified as a partnership for U.S. federal income tax purposes holds our common stock, the tax treatment of a partner generally will depend on the status of the partner and upon the activities of the partnership. Accordingly, partnerships that hold our common stock, and partners in such partnerships, should consult their tax advisors.

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You are urged to consult your tax advisor with respect to the application of the U.S. federal income tax laws to your particular situation, as well as any tax consequences of the purchase, ownership and disposition of our common stock arising under the U.S. federal income, estate or gift tax rules or under the laws of any state, local, non-U.S. or other taxing jurisdiction or under any applicable tax treaty.

Non-U.S. Holder Defined

For purposes of this discussion, you are a non-U.S. holder if you are a beneficial owner of our common stock that is not, for U.S. federal income tax purposes:

an individual citizen or resident of the United States;

a corporation or other entity taxable as a corporation created or organized in the United States or under the laws of the United States or any political subdivision thereof;

an estate whose income is subject to U.S. federal income tax regardless of its source; or

a trust (x) whose administration is subject to the primary supervision of a U.S. court and which has one or more U.S. persons who have the authority to control all substantial decisions of the trust or (y) which has made an election to be treated as a U.S. person.

Distributions

We have not made any distributions on our common stock, and we do not plan to make any distributions for the foreseeable future. However, if we do make distributions on our common stock, those payments will constitute dividends for U.S. federal income tax purposes to the extent paid from our current or accumulated earnings and profits, as determined under U.S. federal income tax principles. To the extent those distributions exceed both our current and our accumulated earnings and profits, they will constitute a return of capital and will first reduce your basis in our common stock, but not below zero, and then will be treated as gain from the sale of stock.

Subject to the discussion below on FATCA, any amount distributed to you that is treated as a dividend generally will be subject to U.S. withholding tax either at a rate of 30% of the gross amount of the dividend or such lower rate as may be specified by an applicable income tax treaty. In order to receive a reduced treaty rate, you must provide us with an IRS Form W-8BEN, IRS Form W-8BEN-E or other appropriate version of IRS Form W-8 certifying qualification for the reduced rate. A non-U.S. holder of shares of our common stock eligible for a reduced rate of U.S. withholding tax pursuant to an income tax treaty may be able to obtain a refund of any excess amounts withheld by filing an appropriate claim for refund with the IRS. If the non-U.S. holder holds the stock through a financial institution or other agent acting on the non-U.S. holder's behalf, the non-U.S. holder will be required to provide appropriate documentation to the agent, which then will be required to provide certification to us or our paying agent, either directly or through other intermediaries.

Notwithstanding the preceding paragraph, dividends received by you that are effectively connected with your conduct of a U.S. trade or business (and, if required by an applicable income tax treaty, attributable to a permanent establishment maintained by you in the United States) are generally exempt from such withholding tax. In order to

obtain this exemption, you must provide us with an IRS Form W-8ECI properly certifying such exemption. Such effectively connected dividends, although not subject to withholding tax, are taxed at the same graduated rates applicable to U.S. persons, net of certain deductions and credits, subject to an applicable income tax treaty providing otherwise. In addition, if you are a corporate non-U.S. holder, dividends you receive that are effectively connected with your conduct of a U.S. trade or business may also be subject to a branch profits tax at a rate of 30% or such lower rate as may be specified by an applicable income tax treaty.

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Gain on Disposition of our Common Stock

Subject to the discussion below regarding backup withholding and FATCA, you generally will not be required to pay U.S. federal income tax on any gain realized upon the sale or other disposition of our common stock unless:

the gain is effectively connected with your conduct of a U.S. trade or business (and, if required by an applicable income tax treaty, the gain is attributable to a permanent establishment maintained by you in the United States);

you are an individual who is present in the United States for a period or periods aggregating 183 days or more during the calendar year in which the sale or disposition occurs and certain other conditions are met; or

our common stock constitutes a U.S. real property interest by reason of our status as a United States real property holding corporation for U.S. federal income tax purposes, or USRPHC, at any time within the shorter of the five-year period preceding your disposition of, or your holding period for, our common stock.

We believe that we are not currently and will not become a USRPHC. However, because the determination of whether we are a USRPHC depends on the fair market value of our U.S. real property relative to the fair market value of our other business assets, there can be no assurance that we will not become a USRPHC in the future. Even if we become a USRPHC, however, as long as our common stock is regularly traded on an established securities market, such common stock will be treated as a U.S. real property interests only if you actually or constructively hold more than five percent of such regularly traded common stock at any time during the applicable period described above.

If you are a non-U.S. holder described in the first bullet above, you will be required to pay tax on the net gain derived from the sale under regular graduated U.S. federal income tax rates, and corporate non-U.S. holders described in the first bullet above may be subject to the branch profits tax at a 30% rate or such lower rate as may be specified by an applicable income tax treaty. If you are an individual non-U.S. holder described in the second bullet above, you will be required to pay a flat 30% tax on the gain derived from the sale, which gain may be offset by U.S. source capital losses (even though you are not considered a resident of the United States, provided you have timely filed U.S. federal income tax returns with respect to such losses). You should consult your tax advisor regarding any applicable income tax or other treaties that may provide for different rules.

Backup Withholding and Information Reporting

Generally, we must report annually to the IRS the amount of dividends paid to you, your name and address, and the amount of tax withheld, if any. Pursuant to applicable income tax treaties or other agreements, the IRS may make these reports available to tax authorities in your country of residence.

Payments of dividends or of proceeds on the disposition of stock made to you may be subject to information reporting and backup withholding at a current rate of 24% unless you establish an exemption, for example by properly certifying your non-U.S. status on an IRS Form W-8BEN, IRS Form W-8BEN-E or another appropriate version of IRS Form W8.

Backup withholding is not an additional tax. If withholding results in an overpayment of taxes, a refund or credit may generally be obtained from the IRS, provided that the required information is furnished to the IRS in a timely manner.

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FATCA

Provisions of the U.S. federal income tax law commonly referred to as FATCA, impose a U.S. federal withholding tax at a rate of 30% on dividends on and, after December 31, 2018, gross proceeds from the sale or other disposition of our common stock paid to a foreign financial institution (as specially defined under the FATCA rules), unless such institution enters into an agreement with the U.S. government to withhold on certain payments and to collect and provide to the U.S. tax authorities substantial information regarding the U.S. account holders of such institution (which includes certain equity and debt holders of such institution, as well as certain account holders that are foreign entities with U.S. owners) or otherwise establishes an exemption, including through satisfaction of the requirements of an intergovernmental agreement between the United States and an applicable foreign country. FATCA also generally imposes a U.S. federal withholding tax of 30% on dividends on and gross proceeds from the sale or other disposition of our common stock paid to a non-financial foreign entity (as specially defined for purposes of these rules) unless such entity provides the withholding agent with a certification identifying certain substantial direct and indirect U.S. owners of the entity, certifies that there are none or otherwise establishes an exemption. Non-U.S. holders should consult their own tax advisors regarding the possible implications of this legislation on their investment in our common stock.

The preceding discussion of U.S. federal income tax considerations is for general information only. It is not tax advice. Each prospective investor should consult its own tax advisor regarding the particular U.S. federal, state and local and non-U.S. tax consequences of purchasing, holding and disposing of our common stock, including the consequences of any proposed change in applicable laws.

Federal Estate Tax

Our common stock beneficially owned by an individual who is not a citizen or resident of the United States (as defined for U.S. federal estate tax purposes) at the time of death will generally be includable in the decedent's gross estate for U.S. federal estate tax purposes, unless an applicable estate tax treaty provides otherwise.

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Piper Jaffray & Co. is acting as the representative of each of the underwriters named below. Subject to the terms and conditions set forth in an underwriting agreement among us and the underwriters, we have agreed to sell to the underwriters, and each of the underwriters has agreed, severally and not jointly, to purchase from us, the number of shares of our common stock set forth opposite its name below.

Underwriters	Number of Shares
Piper Jaffray & Co.	
UBS Securities LLC	
Total	

Subject to the terms and conditions set forth in the underwriting agreement, the underwriters have agreed, severally and not jointly, to purchase all of the shares sold under the underwriting agreement if any of these shares are purchased. If an underwriter defaults, the underwriting agreement provides that the purchase commitments of the nondefaulting underwriters may be increased or the underwriting agreement may be terminated.

We have agreed to indemnify the several underwriters against certain liabilities, including liabilities under the Securities Act relating to losses or claims resulting from material misstatements in or omissions from this prospectus, the registration statement of which this prospectus is a part, certain free writing prospectuses that may be used in the offering and in any marketing materials used in connection with this offering and to contribute to payments the underwriters may be required to make in respect of those liabilities.

Discounts and Commissions

The representatives have advised us that the underwriters propose initially to offer the shares to the public at the public offering price set forth on the cover page of this prospectus. After a bona fide offering of the shares of our common stock at the initial public offering price, the public offering price, concession or any other term of this offering may be changed. The underwriters reserve the right to withdraw, cancel or modify offers to the public and to reject orders in whole or in part.

The following table shows the public offering price, underwriting discount and proceeds, before expenses, to us. The information assumes either no exercise or full exercise by the underwriters of their option to purchase additional shares.

	Per Share	Without Option	With Option
Public Offering Price	\$	\$	\$
Underwriting Discount	\$	\$	\$
Proceeds, before expenses, to us	\$	\$	\$

The estimated offering expenses payable by us, exclusive of the underwriting discount and commissions, are approximately \$.

The underwriting agreement provides that the obligations of the several underwriters to pay for and accept delivery of the shares of common stock offered by this prospectus are subject to the approval of certain legal matters by their counsel and to certain other conditions. The underwriters are obligated to

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take and pay for all of the shares of common stock offered by this prospectus if any such shares are taken. However, the underwriters are not required to take or pay for the shares covered by the underwriters' option to purchase additional shares, described below. If an underwriter defaults, the underwriting agreement provides that the purchase commitments of the non-defaulting underwriters may be increased.

Option to Purchase Additional Shares

We have granted to the underwriters an option, exercisable for 30 days from the date of this prospectus, to purchase up to _____ additional shares of common stock at the public offering price listed on the cover page of this prospectus, less the underwriting discount and commissions. To the extent the option is exercised, each underwriter will become obligated, subject to certain conditions, to purchase about the same percentage of the additional shares of common stock as the number listed next to the underwriter's name in the table above bears to the total number of shares of common stock listed next to the names of all underwriters in the preceding table.

No Sales of Similar Securities

We have agreed not to sell or transfer, without the consent of the representatives, and our executive officers and directors have agreed not to sell or transfer, without the consent of Piper Jaffray & Co., any shares of our common stock or securities convertible into, exchangeable or exercisable for, or that represent the right to receive shares of our common stock, for 75 days after the date of the prospectus used to sell our common stock. Specifically, we and these other persons have agreed, with certain limited exceptions, not to directly or indirectly:

offer, pledge, announce the intention to sell, sell or contract to sell any shares of our common stock;

sell any option or contract to purchase any shares of our common stock;

purchase any option or contract to sell any shares of our common stock;

grant any option, right or warrant to purchase any shares of our common stock;

make any short sale or otherwise transfer or dispose of any shares of our common stock;

enter into any swap or other agreement that transfers, in whole or in part, the economic consequences of ownership of any shares of our common stock whether any such swap or transaction is to be settled by delivery of shares or other securities, in cash or otherwise; or

Price Stabilization, Short Positions, Penalty Bids and Passive Market Making

Until the distribution of the shares is completed, SEC rules may limit underwriters and selling group members from bidding for and purchasing shares of our common stock. However, the underwriters may engage in transactions that stabilize the price of our common stock, such as bids or purchases to peg, fix or maintain that price.

In connection with this offering, the underwriters may purchase and sell shares of our common stock in the open market. These transactions may include short sales, purchases on the open market to cover positions created by short sales and stabilizing transactions. Short sales involve the sale by the underwriters of a greater number of shares than they are required to purchase in this offering. Covered short sales are sales made in an amount not greater than the underwriters' option to purchase additional shares described above. The underwriters may close out any covered short position by either exercising their option to acquire additional shares from us or by purchasing shares in the open market. In determining the source of shares to close out the covered short position, the underwriters will consider, among other things, the price of shares available for purchase in the open market as compared to the price at which they may purchase shares through their option to acquire additional shares from us.

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Naked short sales are sales in excess of the underwriters' option to acquire additional shares from us. The underwriters must close out any naked short position by purchasing shares in the open market. A naked short position is more likely to be created if the underwriters are concerned that there may be downward pressure on the price of our common stock in the open market after pricing that could adversely affect investors who purchase in this offering. Stabilizing transactions consist of various bids for or purchases of shares of our common stock made by the underwriters in the open market prior to the closing of this offering.

The underwriters may also impose a penalty bid. This occurs when a particular underwriter repays to the underwriters a portion of the underwriting discount received by it because the representatives have repurchased shares sold by or for the account of such underwriter in stabilizing or short covering transactions.

Similar to other purchase transactions, the underwriters' purchases to cover the syndicate short sales may have the effect of raising or maintaining the market price of our common stock or preventing or retarding a decline in the market price of our common stock. As a result, the price of our common stock may be higher than the price that might otherwise exist in the open market. The underwriters may conduct these transactions on the Nasdaq Global Market, in the over-the-counter market or otherwise.

In addition, the underwriters may engage in passive market making transactions in our common stock on the NASDAQ Global Market in connection with this offering during a period before the commencement of offers or sales of common stock and extending through the completion of the distribution of this offering. In general, a passive market maker must display its bid at a price not in excess of the highest independent bid for the security. If all independent bids are lowered below the bid of the passive market maker, however, the bid must then be lowered when purchase limits are exceeded. Net purchases by a passive market maker on each day are limited to a specified percentage of the passive market maker's average daily trading volume in the common stock during a specified period and must be discontinued when that limit is reached. Passive market making may cause the price of our common stock to be higher than the price that otherwise would exist in the open market in the absence of those transactions. The underwriters are not required to engage in passive market making and may end passive market making activities at any time.

Neither we nor any of the underwriters make any representation or prediction as to the direction or magnitude of any effect that the transactions described above may have on the price of our common stock. In addition, neither we nor any of the underwriters make any representation that the representatives will engage in these transactions or that these transactions, once commenced, will not be discontinued without notice.

Electronic Offer, Sale and Distribution of Shares

In connection with this offering, certain of the underwriters or securities dealers may distribute prospectuses by electronic means, such as e-mail. In addition, one or more of the underwriters may facilitate internet distribution for this offering to certain of their Internet subscription customers. Any such underwriter may allocate a limited number of shares for sale to its online brokerage customers. An electronic prospectus is available on the internet websites maintained by any such underwriter. Other than the prospectus in electronic format, the information on the websites of any such underwriter is not part of this prospectus.

Other Relationships

The underwriters and their respective affiliates are full service financial institutions engaged in various activities, which may include securities trading, commercial and investment banking, financial advisory, investment management, investment research, principal investment, hedging, financing and brokerage

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activities. Certain of the underwriters or their affiliates may in the future engage in investment banking and other commercial dealings with us or our affiliates in the ordinary course of business, for which they may receive customary fees and commissions.

In the ordinary course of their various business activities, the underwriters and their respective affiliates may make or hold a broad array of investments and actively trade debt and equity securities (or related derivative securities) and financial instruments (including bank loans) for their own account and for the accounts of their customers, and such investment and securities activities may involve securities and/or instruments of the issuer. The underwriters and their respective affiliates may also make investment recommendations and/or publish or express independent research views in respect of such securities or instruments and may at any time hold, or recommend to clients that they acquire, long and/or short positions in such securities and instruments.

Selling Restrictions

European Economic Area

In relation to each Member State of the European Economic Area which has implemented the Prospectus Directive, each being referred to as a Relevant Member State, an offer to the public of any shares of our common stock may not be made in that Relevant Member State, except that an offer to the public in that Relevant Member State of any shares of our common stock may be made at any time under the following exemptions under the Prospectus Directive, if they have been implemented in that Relevant Member State:

- (a) to any legal entity which is a qualified investor as defined in the Prospectus Directive;
- (b) to fewer than 150, natural or legal persons (other than qualified investors as defined in the Prospectus Directive), as permitted under the Prospectus Directive, subject to obtaining the prior consent of the representative for any such offer; or
- (c) in any other circumstances falling within Article 3(2) of the Prospectus Directive, provided that no such offer of shares of our common stock shall result in a requirement for the publication by us or any underwriter of a prospectus pursuant to Article 3 of the Prospectus Directive.

For the purposes of this provision, the expression an offer to the public in relation to any shares of our common stock in any Relevant Member State means the communication in any form and by any means of sufficient information on the terms of the offer and any shares of our common stock to be offered so as to enable an investor to decide to purchase any shares of our common stock, as the same may be varied in that Member State by any measure implementing the Prospectus Directive in that Member State, the expression Prospectus Directive means Directive 2003/71/EC (and amendments thereto, including the 2010 PD Amending Directive, to the extent implemented in the Relevant Member State), and includes any relevant implementing measure in the Relevant Member State, and the expression 2010 PD Amending Directive means Directive 2010/73/EU.

United Kingdom

Each underwriter has represented and agreed that:

- (a) it has only communicated or caused to be communicated and will only communicate or cause to be communicated an invitation or inducement to engage in investment activity (within the meaning of Section 21 of the Financial Services and Markets Act 2000, or the FSMA) received by it in connection with the issue or sale of the shares of our

common stock in circumstances in which Section 21(1) of the FSMA does not apply to us; and

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(b) it has complied and will comply with all applicable provisions of the FSMA with respect to anything done by it in relation to the shares of our common stock in, from or otherwise involving the United Kingdom.

Canada

The common stock may be sold only to purchasers purchasing as principal that are both accredited investors as defined in National Instrument 45-106 Prospectus and Registration Exemptions and permitted clients as defined in National Instrument 31-103 Registration Requirements, Exemptions and Ongoing Registrant Obligations. Any resale of the shares of common stock must be made in accordance with an exemption from the prospectus requirements and in compliance with the registration requirements of applicable securities laws.

Hong Kong

The common stock may not be offered or sold in Hong Kong by means of any document other than (i) in circumstances which do not constitute an offer to the public within the meaning of the Companies Ordinance (Cap. 32, Laws of Hong Kong), or (ii) to professional investors within the meaning of the Securities and Futures Ordinance (Cap. 571, Laws of Hong Kong) and any rules made thereunder, or (iii) in other circumstances which do not result in the document being a prospectus within the meaning of the Companies Ordinance (Cap. 32, Laws of Hong Kong) and no advertisement, invitation or document relating to the shares may be issued or may be in the possession of any person for the purpose of issue (in each case whether in Hong Kong or elsewhere), which is directed at, or the contents of which are likely to be accessed or read by, the public in Hong Kong (except if permitted to do so under the laws of Hong Kong) other than with respect to shares of common stock which are or are intended to be disposed of only to persons outside Hong Kong or only to professional investors within the meaning of the Securities and Futures Ordinance (Cap. 571, Laws of Hong Kong) and any rules made thereunder.

Singapore

This prospectus has not been registered as a prospectus with the Monetary Authority of Singapore. Accordingly, this prospectus and any other document or material in connection with the offer or sale, or invitation for subscription or purchase, of the common stock may not be circulated or distributed, nor may the shares of common stock be offered or sold, or be made the subject of an invitation for subscription or purchase, whether directly or indirectly, to persons in Singapore other than (i) to an institutional investor under Section 274 of the Securities and Futures Act, Chapter 289 of Singapore, or the SFA, (ii) to a relevant person pursuant to Section 275(1), or any person pursuant to Section 275(1A), and in accordance with the conditions specified in Section 275 of the SFA or (iii) otherwise pursuant to, and in accordance with the conditions of, any other applicable provision of the SFA, in each case subject to compliance with conditions set forth in the SFA.

Where the common stock are subscribed or purchased under Section 275 of the SFA by a relevant person which is:

- (a) a corporation (which is not an accredited investor (as defined in Section 4A of the SFA)) the sole business of which is to hold investments and the entire share capital of which is owned by one or more individuals, each of whom is an accredited investor; or
- (b) a trust (where the trustee is not an accredited investor) whose sole purpose is to hold investments and each beneficiary of the trust is an individual who is an accredited investor, shares, debentures and units of shares and debentures of that corporation or the beneficiaries' rights and interest (howsoever described) in that trust shall not be transferred within six months after that corporation or that trust

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has acquired the shares of common stock pursuant to an offer made under Section 275 of the SFA except:

(i) to an institutional investor (for corporations, under Section 274 of the SFA) or to a relevant person defined in Section 275(2) of the SFA, or to any person pursuant to an offer that is made on terms that such shares, debentures and units of shares and debentures of that corporation or such rights and interest in that trust are acquired at a consideration of not less than \$200,000 (or its equivalent in a foreign currency) for each transaction, whether such amount is to be paid for in cash or by exchange of securities or other assets, and further for corporations, in accordance with the conditions specified in Section 275 of the SFA;

(ii) where no consideration is or will be given for the transfer; or

(iii) where the transfer is by operation of law.

Switzerland

The common stock may not be publicly offered in Switzerland and will not be listed on the SIX Swiss Exchange, or the SIX, or on any other stock exchange or regulated trading facility in Switzerland. This document has been prepared without regard to the disclosure standards for issuance prospectuses under art. 652a or art. 1156 of the Swiss Code of Obligations or the disclosure standards for listing prospectuses under art. 27 ff. of the SIX Listing Rules or the listing rules of any other stock exchange or regulated trading facility in Switzerland. Neither this document nor any other offering or marketing material relating to the shares of common stock or the offering may be publicly distributed or otherwise made publicly available in Switzerland.

Neither this document nor any other offering or marketing material relating to the offering, or the common stock have been or will be filed with or approved by any Swiss regulatory authority. In particular, this document will not be filed with, and the offer of common stock will not be supervised by, the Swiss Financial Market Supervisory Authority, and the offer of shares of common stock has not been and will not be authorized under the Swiss Federal Act on Collective Investment Schemes, or the CISA. Accordingly, no public distribution, offering or advertising, as defined in CISA, its implementing ordinances and notices, and no distribution to any non-qualified investor, as defined in CISA, its implementing ordinances and notices, shall be undertaken in or from Switzerland, and the investor protection afforded to acquirers of interests in collective investment schemes under CISA does not extend to acquirers of common stock.

United Arab Emirates

This offering has not been approved or licensed by the Central Bank of the United Arab Emirates, or the UAE, Securities and Commodities Authority of the UAE and/or any other relevant licensing authority in the UAE including any licensing authority incorporated under the laws and regulations of any of the free zones established and operating in the territory of the UAE, in particular the Dubai Financial Services Authority, or the DFSA, a regulatory authority of the Dubai International Financial Centre, or the DIFC. The offering does not constitute a public offer of securities in the UAE, DIFC and/or any other free zone in accordance with the Commercial Companies Law, Federal Law No 8 of 1984 (as amended), DFSA Offered Securities Rules and NASDAQ Dubai Listing Rules, accordingly, or otherwise. The shares of common stock may not be offered to the public in the UAE and/or any of the free zones.

The shares of common stock may be offered and issued only to a limited number of investors in the UAE or any of its free zones who qualify as sophisticated investors under the relevant laws and regulations of the UAE or the free zone concerned.

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France

This prospectus (including any amendment, supplement or replacement thereto) is not being distributed in the context of a public offering in France within the meaning of Article L. 411-1 of the French Monetary and Financial Code (Code monétaire et financier).

This prospectus has not been and will not be submitted to the French Autorité des marchés financiers, or the AMF, for approval in France and accordingly may not and will not be distributed to the public in France.

Pursuant to Article 211-3 of the AMF General Regulation, French residents are hereby informed that:

1. the transaction does not require a prospectus to be submitted for approval to the AMF;
2. persons or entities referred to in Point 2°, Section II of Article L. 411-2 of the Monetary and Financial Code may take part in the transaction solely for their own account, as provided in Articles D. 411-1, D. 734-1, D. 744-1, D. 754-1 and D. 764-1 of the Monetary and Financial Code; and
3. the financial instruments thus acquired cannot be distributed directly or indirectly to the public otherwise than in accordance with Articles L. 411-1, L. 411-2, L. 412-1 and L. 621-8 to L. 621-8-3 of the Monetary and Financial Code.

This prospectus is not to be further distributed or reproduced (in whole or in part) in France by the recipients of this prospectus. This prospectus has been distributed on the understanding that such recipients will only participate in the issue or sale of our common stock for their own account and undertake not to transfer, directly or indirectly, our common stock to the public in France, other than in compliance with all applicable laws and regulations and in particular with Articles L. 411-1 and L. 411-2 of the French Monetary and Financial Code.

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LEGAL MATTERS

The validity of the shares of common stock offered hereby will be passed upon for us by Wilson Sonsini Goodrich & Rosati, Professional Corporation, Palo Alto, California. Gibson, Dunn & Crutcher LLP, New York, New York, is acting as counsel to the underwriters.

EXPERTS

The financial statements and management's assessment of the effectiveness of internal control over financial reporting (which is included in Management's Report on Internal Control over Financial Reporting) incorporated in this Prospectus by reference to the Annual Report on Form 10-K for the year ended December 31, 2017 have been so incorporated in reliance on the report of PricewaterhouseCoopers LLP, an independent registered public accounting firm, given on the authority of said firm as experts in auditing and accounting.

WHERE YOU CAN FIND ADDITIONAL INFORMATION

We file annual, quarterly and other reports, proxy statements and other information with the SEC. Our SEC filings are available to the public over the Internet at the SEC's website at <http://www.sec.gov>. You may also read and copy any document we file at the SEC's Public Reference Room at 100 F Street, NE, Washington, D.C. 20549. Please call the SEC at 1-800-SEC-0330 for further information on the Public Reference Room. Our Annual Report on Form 10-K, Quarterly Reports on Form 10-Q, and Current Reports on Form 8-K, including any amendments to those reports, and other information that we file with or furnish to the SEC pursuant to Section 13(a) or 15(d) of the Exchange Act can also be accessed free of charge by linking directly from our website at <http://www.fluidigm.com> under the "About Investors" SEC Filings caption. These filings will be available as soon as reasonably practicable after we electronically file such material with, or furnish it to, the SEC. Information contained on our website is not part of this prospectus.

You should rely only on the information provided in, and incorporated by reference in, this prospectus supplement and the accompanying prospectus and the registration statement. We have not authorized anyone else to provide you with different information. Our securities are not being offered in any state where the offer is not permitted. The information contained in documents that are incorporated by reference in this prospectus supplement is accurate only as of the dates of those documents. Our business, financial condition, results of operations and prospects may have changed since those dates.

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INCORPORATION OF CERTAIN INFORMATION BY REFERENCE

The SEC allows us to incorporate by reference the information we file with it, which means that we can disclose important information to you by referring you to another document that we have filed separately with the SEC. You should read the information incorporated by reference because it is an important part of this prospectus supplement. We incorporate by reference the following information or documents that we have filed with the SEC (excluding those portions of any Form 8-K that are not deemed filed pursuant to the General Instructions of Form 8-K):

our Annual Report on Form 10-K for the year ended December 31, 2017 filed with the SEC on March 8, 2018, including portions of our definitive Proxy Statement on Schedule 14A, as filed with the SEC on April 27, 2018 in connection with our 2018 annual meeting of stockholders, to the extent specifically incorporated by reference therein;

our Quarterly Report on Form 10-Q for the quarter ended March 31, 2018 filed with the SEC on May 8, 2018;

our Quarterly Report on Form 10-Q for the quarter ended June 30, 2018 filed with the SEC on August 8, 2018;

our Quarterly Report on Form 10-Q for the quarter ended September 30, 2018 filed with the SEC on November 6, 2018;

the description of our common stock contained in our Registration Statement on Form 8-A (File No. 001-34180) filed with the SEC on February 7, 2011, pursuant to Section 12(b) of the Exchange Act, including any amendment or report filed for the purpose of updating such description; and

our Current Reports on Form 8-K filed with the SEC on February 7, 2018, March 2, 2018, March 6, 2018, March 13, 2018, March 19, 2018, June 1, 2018, August 2, 2018 (only with respect to information filed under Item 1.01, 2.03, 5.02, and Item 9.01 related thereto), September 20, 2018, and October 31, 2018.

All reports and other documents we subsequently file pursuant to Section 13(a), 13(c), 14 or 15(d) of the Exchange Act prior to the termination of this offering, including all such documents we may file with the SEC after the date of the initial registration statement and prior to the effectiveness of the registration statement, but excluding any information furnished to, rather than filed with, the SEC, will also be incorporated by reference into this prospectus and deemed to be part of this prospectus from the date of the filing of such reports and documents.

Any statement contained in any document incorporated by reference herein shall be deemed to be modified or superseded for purposes of this prospectus to the extent that a statement contained in this prospectus or any prospectus supplement modifies or supersedes such statement. Any statement so modified or superseded shall not be deemed, except as so modified or superseded, to constitute a part of this prospectus.

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We will provide without charge to each person, including any beneficial owner, to whom this prospectus is delivered, upon written or oral request, a copy of any or all documents that are incorporated by reference into this prospectus, but not delivered with the prospectus, other than exhibits to such documents unless such exhibits are specifically incorporated by reference into the documents that this prospectus incorporates. You should direct written requests to: Fluidigm Corporation, 7000 Shoreline Court, Suite 100, South San Francisco, CA 94080, Attn: Investor Relations, or you may call us at (650) 266-6000.

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PROSPECTUS

\$125,000,000

Fluidigm Corporation may offer, from time to time,

common stock
warrants

preferred stock
debt securities

All of the securities listed above may be sold separately or as units with other securities.

We may from time to time in one or more offerings offer and sell common stock, preferred stock, debt securities, warrants to purchase common stock or preferred stock or debt securities, or any combination of the foregoing, either individually or as units comprised of one or more of the other securities.

The aggregate offering price of the securities sold pursuant to this prospectus will not exceed \$125,000,000.

This prospectus may not be used to sell securities unless accompanied by a prospectus supplement, which will describe the method and the terms of the offering. We will provide you with the specific amount, price and terms of the applicable offered securities in one or more supplements to this prospectus. You should read this prospectus and any supplement carefully before you purchase any of our securities.

Our common stock is listed on the NASDAQ Global Market under the symbol FLDM. On March 7, 2017, the last reported sale price on the NASDAQ Global Market was \$5.46 per share. There is currently no market for the other securities we may offer.

Investing in our securities involves risks. Please carefully read the information under the headings Risk Factors beginning on page 5 of this prospectus and Item 1A Risk Factors of our most recent report on Form 10-K or 10-Q which is incorporated by reference in this prospectus before you invest in our securities.

NEITHER THE SECURITIES AND EXCHANGE COMMISSION NOR ANY STATE SECURITIES COMMISSION HAS APPROVED OR DISAPPROVED OF THESE SECURITIES OR DETERMINED IF THIS PROSPECTUS IS TRUTHFUL OR COMPLETE. ANY REPRESENTATION TO THE CONTRARY IS A CRIMINAL OFFENSE.

These securities may be offered and sold to or through one or more underwriters, dealers and agents, or directly to purchasers, on a continuous or delayed basis. If underwriters, dealers, or agents are used to sell the securities, we will name them and describe their compensation in a prospectus supplement. In addition, the underwriters may overallocate a portion of the securities.

The date of this prospectus is May 2, 2017.

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ABOUT THIS PROSPECTUS

This prospectus is part of a registration statement on Form S-3 that we filed with the Securities and Exchange Commission, or the SEC, using a shelf registration process. Under this shelf process, we may, from time to time, offer or sell any combination of the securities described in this prospectus in one or more offerings up to a total amount of \$125,000,000.

This prospectus provides you with a general description of the securities we may offer. Each time we sell securities, we will provide a prospectus supplement that will contain specific information about the terms of that offering. The prospectus supplement may also add to, update or change information contained in this prospectus and, accordingly, to the extent inconsistent, information in this prospectus is superseded by the information in the prospectus supplement.

The prospectus supplement to be attached to the front of this prospectus may describe, as applicable: the terms of the securities offered; the initial price to the public; the price paid for the securities; net proceeds; and the other specific terms related to the offering of the securities.

You should only rely on the information contained or incorporated by reference in this prospectus and any prospectus supplement or issuer free writing prospectus relating to a particular offering. We have not authorized any other person to provide you with different information. You should read this entire prospectus and any prospectus supplement and any related issuer free writing prospectus, as well as the documents incorporated by reference into this prospectus or any prospectus supplement as well as any related free writing prospectus, before making an investment decision. We do not imply or represent by delivering this prospectus that Fluidigm Corporation, or its business, is unchanged after the date on the front of this prospectus or that the information in this prospectus is correct as of any time after such date.

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PROSPECTUS SUMMARY

This summary highlights information contained elsewhere in this prospectus or incorporated herein by reference. This summary is not complete and does not contain all of the information that you should consider before deciding to invest in our securities. We urge you to read this entire prospectus and the information incorporated by reference in this prospectus carefully, including the Risk Factors section. In this prospectus, unless the context indicates otherwise, the terms company, Fluidigm, we, us, and our refer to Fluidigm Corporation and its subsidiaries.

Fluidigm Corporation

Overview

We create, manufacture, and market innovative technologies and tools for life sciences research. We sell instruments and consumables, including integrated fluidic circuits, or IFCs, assays and reagents, to academic institutions, clinical research laboratories, and biopharmaceutical, biotechnology, and agricultural biotechnology, or Ag-Bio, companies and contract research organizations, or CROs. Our technologies and tools are directed at the analysis of deoxyribonucleic acid, or DNA, ribonucleic acid, or RNA, and proteins in a variety of different sample types, from individual cells to bulk tissue.

We were a pioneer in the application of microfluidics to enable high-throughput and highly-multiplexed polymerase chain reactions, or PCR, for genetic analysis, as well as a field known as single-cell genomics, in which the genetic composition of individual cells is assayed. In February 2014, we purchased DVS Sciences, Inc., whose mass cytometry system enables the highly-multiplexed analysis of cellular surface and intracellular proteins in both blood and tissue.

Researchers have successfully employed our products to help achieve breakthroughs in a variety of fields, including single-cell gene and protein expression, gene regulation, genetic variation, cellular function and applied genetics. These breakthroughs include using our systems to help detect life-threatening mutations in cancer cells, discover cancer associated biomarkers, analyze the genetic composition of individual stem cells and assess the quality of agricultural products, such as seeds or livestock.

Corporate Information

We were incorporated in California in May 1999 as Mycometrix Corporation, changed our name to Fluidigm Corporation in April 2001 and reincorporated in Delaware in July 2007. Our principal executive offices are located at 7000 Shoreline Court, Suite 100, South San Francisco, California 94080. Our telephone number is (650) 266-6000. We maintain an Internet website at www.fluidigm.com. We have not incorporated the information on our website by reference into this prospectus, and you should not consider it to be a part of this prospectus.

Fluidigm, the Fluidigm logo, Access Array, Biomark, C1, Callisto, Cell-ID, CyTOF, D3, Delta Gene, Dynamic Array, EP1, FC1, Flex Six, Helios, High-Precision 96.96 Genotyping, Hyperion, Juno, Max Nanoflex Open App, Polaris, qdPCR 37K, Script Builder, Script Hub, Singular, SNP Trace and SNP trademarks or registered trademarks of Fluidigm Corporation. Other service marks, trademarks and trade names referred to in this prospectus are the property of their respective owners.

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The Securities We May Offer

We may offer or sell common stock, preferred stock, debt securities and warrants in one or more offerings and in any combination either individually or as units comprised of one or more of the other securities. The aggregate offering price of the securities sold pursuant to this prospectus will not exceed \$125,000,000. Each time we offer securities with this prospectus, we will provide a prospectus supplement that will describe the specific amounts, prices and terms of the securities being offered.

We may sell the securities to or through underwriters, dealers or agents or directly to purchasers or as otherwise set forth below under Plan of Distribution. We, as well as any agents acting on our behalf, reserve the sole right to accept and to reject in whole or in part any proposed purchase of securities. Each prospectus supplement will set forth the names of any underwriters, dealers, agents or other entities involved in the sale of securities described in that prospectus supplement and any applicable fee, commission or discount arrangements with them.

Common Stock

We may offer shares of our common stock, par value \$0.001 per share, either alone or underlying other registered securities convertible into our common stock. Holders of our common stock are entitled to receive dividends declared by our board of directors out of funds legally available for the payment of dividends, subject to rights, if any, of preferred stockholders. Currently, we do not pay a cash dividend. Each holder of common stock is entitled to one vote per share. The holders of common stock have no preemptive rights.

Preferred Stock

We may issue preferred stock in one or more series. Our board of directors or a committee designated by the board will determine the dividend, voting and conversion rights and other provisions at the time of sale. Each series of preferred stock will be more fully described in the particular prospectus supplement that will accompany this prospectus, including redemption provisions, rights in the event of liquidation, dissolution or the winding up of Fluidigm Corporation, voting rights and rights to convert into common stock.

In November 2016, our board of directors adopted a Tax Benefit Preservation Plan, or the Tax Benefit Plan. In connection with the adoption of the Tax Benefit Plan, our board of directors authorized and declared a dividend distribution of one right for each outstanding share of common stock, par value \$0.001 per share, to stockholders of record as of the close of business on December 1, 2016, or the record date. Each right entitles the registered holder to purchase from us one one-thousandth of a share of our Series A participating preferred stock, par value \$0.001 per share, at an exercise price of \$35.00 per one one-thousandth of a preferred share, subject to adjustment. In connection with the adoption of our Tax Benefit Plan, we designated 50,000 shares of preferred stock as Series A participating preferred stock.

Warrants

We may issue warrants for the purchase of common stock, preferred stock or debt securities. We may issue warrants independently or together with other securities.

Debt Securities

We may offer secured or unsecured obligations in the form of one or more series of senior or subordinated debt. The senior debt securities and the subordinated debt securities are together referred to in this prospectus as the debt

securities. The subordinated debt securities generally will be entitled to payment only after payment of

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our senior debt. Senior debt generally includes all debt for money borrowed by us, except debt that is stated in the instrument governing the terms of that debt to be not senior to, or to have the same rank in right of payment as, or to be expressly junior to, the subordinated debt securities. We may issue debt securities that are convertible into shares of our common stock.

The senior and subordinated debt securities will be issued under separate indentures between us and a trustee. We have summarized the general features of the debt securities to be governed by the indentures. These indentures have been filed as exhibits to the registration statement of which this prospectus forms a part. We encourage you to read these indentures. Instructions on how you can get copies of these documents are provided under the heading **Where You Can Find More Information**.

Units

We may issue units comprised of one or more of the other classes of securities issued by us as described in this prospectus in any combination. Each unit will be issued so that the holder of the unit is also the holder of each security included in the unit.

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RISK FACTORS

An investment in our securities involves a high degree of risk. The prospectus supplement applicable to each offering of our securities will contain a discussion of the risks applicable to an investment in our securities. Prior to making a decision about investing in our securities, you should carefully consider the specific factors discussed under the heading **Risk Factors** in the applicable prospectus supplement, together with all of the other information contained or incorporated by reference in the prospectus supplement or appearing or incorporated by reference in this prospectus. You should also consider the risks, uncertainties and assumptions discussed under **Part I Item 1A Risk Factors** of our most recent report on Form 10-K or **Part II Item 1A Risk Factors** in our Quarterly Reports on Form 10-Q which are incorporated herein by reference, and may be amended, supplemented or superseded from time to time by other reports we file with the SEC in the future. The risks and uncertainties we have described are not the only ones we face. Additional risks and uncertainties not presently known to us or that we currently deem immaterial may also affect our operations.

FORWARD-LOOKING STATEMENTS

This prospectus includes and incorporates by reference forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended, or Securities Act, and Section 21E of the Securities Exchange Act of 1934, as amended, or Exchange Act, that are based on our management's beliefs and assumptions and on information currently available to our management. Forward-looking statements include information concerning our possible or assumed future results of operations, business strategies, financing plans, competitive position, industry environment, potential growth opportunities and the effects of competition. Forward-looking statements include statements that are not historical facts and can be identified by terms such as *anticipates, believes, could, seeks, estimates, expects, intends, may, plans, potential, predicts, projects, should, will, would* or similar negatives of those terms. Although we believe that we have a reasonable basis for each forward-looking statement contained and incorporated by reference included in this prospectus, we caution you that these statements are based on our projections of the future that are subject to known and unknown risks and uncertainties and other factors that may cause our actual results, level of activity, performance or achievements expressed or implied by these forward-looking statements, to differ. The sections in this prospectus entitled **Risk Factors**, in **Part I Item 1A Risk Factors** of our most recent report on Form 10-K or **Part II Item 1A Risk Factors** in our Quarterly Reports on Form 10-Q which is incorporated by reference in this prospectus as well as other disclosures included in this prospectus or the supplement hereto, discuss some of the factors that could contribute to these differences.

Other unknown or unpredictable factors also could harm our results. Consequently, actual results or developments anticipated by us may not be realized or, even if substantially realized, may not have the expected consequences to, or effects on, us. Given these uncertainties, prospective investors are cautioned not to place undue reliance on such forward-looking statements. Except as required by law, we undertake no obligation to update or revise publicly any of the forward-looking statements after the date of this prospectus.

This prospectus and the documents incorporated by reference in this prospectus contain market data that we obtained from industry sources, including independent industry publications. In presenting this information, we have also made assumptions based on such data and other similar sources and on our knowledge of, and our experience to date in, the markets for our products. This data involves a number of assumptions and limitations, and you are cautioned not to give undue weight to such estimates. While we believe the market data included in this prospectus is generally reliable, such information is inherently imprecise. In addition, projections, assumptions and estimates of our future performance and the future performance of the industry in which we operate are necessarily subject to a high degree of uncertainty and risk due to a variety of factors, including those described under the heading **Risk Factors** in this prospectus and **Item 1A Risk Factors** of our most recent report on Form 10-K or 10-Q which is incorporated by

reference in this prospectus. These and other factors could cause results to differ materially from those expressed in the estimates made by the independent parties and by us.

Table of Contents**RATIO OF EARNINGS TO FIXED CHARGES**

The following table sets forth our consolidated ratio of earnings to fixed charges for the periods indicated.

	Year Ended				
	December 31, 2012	December 31, 2013	December 31, 2014	December 31, 2015	December 31, 2016
Ratio of earnings to fixed charges(1)					

- (1) For the purpose of calculating the ratio of earnings to fixed charges, earnings consist of net loss before benefit from income taxes. Fixed charges consist of interest expense and an estimate of the interest portion of rental expense. In addition, for the periods presented above, we did not have outstanding preferred securities and therefore were not required to pay any preferred security dividends. In the years ended December 31, 2012, 2013, 2014, 2015 and 2016, earnings were insufficient to cover fixed charges by \$18.8 million, \$16.4 million, \$57.7 million, \$54.8 million and \$80.2 million, respectively.

As of the date of this prospectus, we have no shares of preferred stock outstanding, and consequently, our ratio of earnings to combined fixed charges and preferred share dividends and ratio of earnings to fixed charges would be identical.

USE OF PROCEEDS

Unless we state otherwise in the applicable prospectus supplement, we expect to use the net proceeds that we will receive from the sale of the securities for working capital and other general corporate purposes and we may also use a portion of our net proceeds to acquire and invest in complementary products, technologies or businesses; however, we currently have no agreements or commitments to complete any such transaction and are not involved in negotiations to do so. Pending these uses, we may invest our net proceeds from this offering primarily in investment-grade, interest-bearing instruments.

The specific allocations of the proceeds we receive from the sale of our securities will be described in the applicable prospectus supplement.

DIVIDEND POLICY

We have never declared or paid any cash dividends on our capital stock. We currently intend to retain all future earnings for the operation and expansion of our business and, therefore, we do not anticipate declaring or paying cash dividends in the foreseeable future. In addition, we may become subject to covenants under future debt arrangements that place restrictions on our ability to pay dividends. The payment of dividends will be at the discretion of our board of directors and will depend on our results of operations, capital requirements, financial condition, prospects, contractual arrangements, any limitations on payment of dividends present in our current and future debt agreements, and other factors that our board of directors may deem relevant.

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DESCRIPTION OF OUR CAPITAL STOCK

The following is a summary of the material provisions of the common stock and the preferred stock contained in our certificate of incorporation, bylaws, and Tax Benefit Plan. For more detailed definition, please refer to our certificate of incorporation, bylaws, and Tax Benefit Plan, each as amended.

General

Our authorized capital stock consists of 210,000,000 shares, all with a par value of \$0.001 per share, of which:

200,000,000 shares are designated as common stock; and

10,000,000 shares are designated as preferred stock.

As of December 31, 2016, we had outstanding 29,207,654 shares of common stock held of record by 94 stockholders. In addition, as of December 31, 2016, 4,624,505 shares of our common stock were subject to outstanding awards under our equity incentive plans.

Common Stock

The holders of our common stock are entitled to one vote per share on all matters to be voted on by our stockholders. Subject to preferences that may be applicable to any outstanding shares of preferred stock, holders of common stock are entitled to receive ratably such dividends as may be declared by our board of directors out of funds legally available for that purpose. In the event of our liquidation, dissolution or winding up, the holders of common stock are entitled to share ratably in all assets remaining after the payment of liabilities, subject to the prior distribution rights of preferred stock then outstanding. Holders of common stock have no preemptive, conversion or subscription rights. There are no redemption or sinking fund provisions applicable to the common stock.

Preferred Stock

No shares of preferred stock are outstanding. Our board of directors has the authority, without further action by our stockholders, to designate and issue up to 10,000,000 shares of preferred stock in one or more series. Our board of directors may also designate the rights, preferences and privileges of each such series of preferred stock, any or all of which may be greater than or senior to those of the common stock. In connection with the adoption of our Tax Benefit Plan, as described below, we designated 50,000 shares of preferred stock as Series A participating preferred stock. Other than with respect to the Series A participating preferred stock, the actual effect of any such issuance on the rights of the holders of common stock will not be known until our board of directors determines the specific rights of the holders of preferred stock; however, the potential effects of such an issuance include:

diluting the voting power of the holders of common stock;

reducing the likelihood that holders of common stock will receive dividend payments;

reducing the likelihood that holders of common stock will receive payments in the event of our liquidation, dissolution, or winding up; and

delaying, deterring or preventing a change-in-control or other corporate takeover.

Voting Rights

Under the provisions of our certificate of incorporation, holders of our common stock are entitled to one vote for each share of common stock held by such holder on any matter submitted to a vote at a meeting of

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stockholders. In addition, our certificate of incorporation provides that certain corporate actions require the approval of our stockholders. These actions, and the vote required, are as follows:

the removal of a director requires the vote of a majority of the voting power of our issued and outstanding capital stock entitled to vote in the election of directors; and

the amendment of provisions of our certificate of incorporation relating to blank check preferred stock, the classification of our directors, the removal of directors, the filling of vacancies on our board of directors, cumulative voting, annual and special meetings of our stockholders and the amendment provision in our certificate of incorporation require the vote of 66 2/3% of our then outstanding voting securities.

Tax Benefit Preservation Plan

The following is a summary of certain principal terms of our Tax Benefit Plan. The Tax Benefit Plan may be further amended from time to time. A description of the rights is set forth in our registration statement on Form 8-A that was filed with the SEC on November 22, 2016 and which is incorporated herein by reference. We expect to submit the Tax Benefit Plan to a stockholder vote at our 2017 Annual Meeting of Stockholders.

In connection with the adoption of our Tax Benefit Plan, our board of directors authorized and declared a dividend distribution of one right for each outstanding share of common stock, par value \$0.001 per share, to stockholders of record as of the close of business on December 1, 2016, or the record date. Each right entitles the registered holder to purchase from us one one-thousandth of a share of our Series A participating preferred stock, par value \$0.001 per share, at an exercise price of \$35.00 per one one-thousandth of a preferred share, subject to adjustment. In connection with the adoption of our Tax Benefit Plan, we designated 50,000 shares of preferred stock as Series A participating preferred stock.

By adopting the Tax Benefit Plan, the board of directors is seeking to protect our ability to use our net operating losses, any loss or deduction attributable to a net unrealized built-in loss and other tax attributes, which we refer to as the tax benefits. We view our tax benefits as highly valuable assets of ours that are likely to inure to our benefit and the benefit of our stockholders. However, if we experience an ownership change, as defined in Section 382 of the Internal Revenue Code, or the Code, our ability to use the tax benefits could be substantially limited, and the timing of the usage of the tax benefits could be substantially delayed, which could significantly impair the value of the tax benefits. Generally, an ownership change occurs if the percentage of our stock owned by one or more five percent stockholders increases by more than 50 percentage points over the lowest percentage of stock owned by such stockholders at any time during the prior three-year period or, if sooner, since the last ownership change experienced by us. The Tax Benefit Plan is intended to deter acquisitions of 4.99% or more of the outstanding shares of our common stock by any person without the approval of our board of directors. This would protect the tax benefits because changes in ownership by a person owning less than 4.99% of our outstanding shares of common stock are not included in the calculation of ownership change for purposes of Section 382 of the Code.

Distribution and Transfer of Rights; Rights Certificates

The board of directors has declared a dividend of one right for each outstanding share of common stock. Rights accompany any new shares of common stock that are issued after the record date.

Distribution Date

Subject to certain exceptions specified in the Tax Benefit Plan, the rights will separate from the shares of common stock and become exercisable following (1) the 10th business day (or such later date as may be determined by the board of directors) after the public announcement that a person or group of affiliated or associated persons, or an acquiring person, has acquired beneficial ownership of 4.99% or more of the shares of

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common stock or (2) the 10th business day (or such later date as may be determined by the board of directors) after a person or group has first published, sent, or given a tender or exchange offer that would result in ownership by a person or group of 4.99% or more of the outstanding shares of our common stock.

Any person or group of affiliated or associated persons who beneficially owns 4.99% or more of the outstanding shares of our common stock as of the announcement of the Tax Benefit Plan will not be an acquiring person, but only for so long as such person or group does not become the beneficial owner of additional shares of common stock equal to 0.10% or more of the shares of common stock then outstanding.

The date on which the rights separate from the shares of common stock and become exercisable is referred to as the distribution date.

After the distribution date, we will mail rights certificates to our stockholders as of the close of business on the distribution date and the rights will become transferable apart from the shares of common stock. Thereafter, such rights certificates alone will represent the rights.

Preferred Shares Purchasable Upon Exercise of Rights

After the distribution date, each right will entitle the holder to purchase, for the exercise price, one one-thousandth of a share of preferred stock having economic and other terms similar to that of one share of common stock. This portion of a share of preferred stock is intended to give the stockholder approximately the same dividend, voting and liquidation rights as would one share of common stock, and should approximate the value of one share of common stock.

More specifically, each one one-thousandth of a share of preferred stock, if issued, will:

not be redeemable;

entitle holders to quarterly dividend payments of \$0.001 per share, or an amount equal to the dividend paid on one share of common stock, whichever is greater;

entitle holders upon liquidation either to receive \$1.00 per share or an amount equal to the payment made on one share of common stock, whichever is greater;

have the same voting power as one share of common stock; and

entitle holders to a per share payment equal to the payment made on one share of common stock if the shares of common stock are exchanged via merger, consolidation or a similar transaction.

Flip-In Trigger

If an acquiring person obtains beneficial ownership of 4.99% or more of the shares of common stock, except pursuant to an offer for all outstanding shares of common stock that the independent members of the board of directors

determine to be fair and not inadequate and to otherwise be in the best interests of ours and our stockholders after receiving advice from one or more investment banking firms, then each right will entitle the holder thereof to purchase, for the exercise price, a number of shares of common stock (or, in certain circumstances, cash, property or other securities of ours) having a then-current market value of twice the exercise price. However, the rights are not exercisable following the occurrence of the foregoing event until such time as the rights are no longer redeemable by us, as further described below.

Following the occurrence of an event set forth in preceding paragraph, all rights that are or, under certain circumstances specified in the Tax Benefit Plan, were beneficially owned by an acquiring person or certain of its transferees will be null and void.

Table of Contents***Flip-Over Trigger***

If, after an acquiring person obtains 4.99% or more of the shares of common stock, (1) we merge into another entity, (2) an acquiring entity merges into us or (3) we sell or transfer more than 50% of our assets, cash flow or earning power, then each right (except for rights that have previously been voided as set forth above) will entitle the holder thereof to purchase, for the exercise price, a number of shares of common stock of the person engaging in the transaction having a then-current market value of twice the exercise price.

Redemption of the Rights

The rights will be redeemable at our option for \$0.01 per right (payable in cash, shares of common stock or other consideration deemed appropriate by the board of directors) at any time on or prior to the 10th business day (or such later date as may be determined by the board of directors) after the public announcement that an acquiring person has acquired beneficial ownership of 4.99% or more of the shares of common stock. Immediately upon the action of the board of directors ordering redemption, the rights will terminate and the only right of the holders of the rights will be to receive the \$0.01 redemption price. The redemption price will be adjusted if we undertake a stock dividend or a stock split.

Exchange Provision

At any time after the date on which an acquiring person beneficially owns 4.99% or more of the shares of common stock and prior to the acquisition by the acquiring person of 50% of the shares of common stock, the board of directors may exchange the rights (except for rights that have previously been voided as set forth above), in whole or in part, for shares of common stock at an exchange ratio of one share of common stock per right (subject to adjustment). In certain circumstances, we may elect to exchange the rights for cash or other securities of ours having a value approximately equal to one share of common stock.

Expiration of the Rights

The rights expire on the earliest of (1) 5:00 p.m., New York City time, on November 21, 2019 (unless such date is extended); (2) the redemption or exchange of the rights as described above; (3) following (a) the first annual meeting of our stockholders after the adoption of the Tax Benefit Plan if stockholders do not approve the Tax Benefit Plan or (b) the first anniversary of the adoption of the Tax Benefit Plan if the stockholders have not otherwise approved the Tax Benefit Plan; (4) the repeal of Section 382 of the Code or any other change if the board of directors determines that the Tax Benefit Plan is no longer necessary or desirable for the preservation of the tax benefits; (5) the time at which the board of directors determines that the tax benefits are fully utilized or no longer available pursuant to Section 382 of the Code or that an ownership change pursuant to Section 382 of the Code would not adversely impact in any material respect the time period in which we could use the tax benefits, or materially impair the amount of the tax benefits that could be used by us in any particular time period for applicable tax purposes; and (6) a determination by the board of directors that the Tax Benefit Plan is no longer in the best interests of ours and our stockholders.

Amendment of Terms of the Tax Benefit Plan and the Rights

The terms of the rights and the Tax Benefit Plan may be amended in any respect without the consent of the holders of the rights on or prior to the distribution date. Thereafter, the terms of the rights and the Tax Benefit Plan may be amended without the consent of the holders of rights in order to (1) cure any ambiguities, (2) shorten or lengthen any time period pursuant to the Tax Benefit Plan or (3) make changes that do not adversely affect the interests of holders of the rights.

Voting Rights; Other Stockholder Rights

The rights will not have any voting rights. Until a right is exercised, the holder thereof, as such, will have no separate rights as stockholder of ours.

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Anti-Dilution Provisions

The board of directors may adjust the exercise price, the number of shares of preferred stock issuable and the number of outstanding rights to prevent dilution that may occur from a stock dividend, a stock split or a reclassification of the shares of preferred stock or shares of commons stock.

With certain exceptions, no adjustments to the exercise price will be made until the cumulative adjustments amount to at least 1% of the exercise price. No fractional shares of preferred stock will be issued and, in lieu thereof, an adjustment in cash will be made based on the current market price of the shares of preferred stock.

Taxes

The distribution of rights should not be taxable for federal income tax purposes. However, following an event that renders the rights exercisable or upon redemption of the rights, stockholders may recognize taxable income.

Anti Takeover Effects of Delaware Law and Our Certificate of Incorporation, Bylaws, and Tax Benefit Plan

Certain provisions of Delaware law and our certificate of incorporation and bylaws contain provisions that could have the effect of delaying, deferring or discouraging another party from acquiring control of us. These provisions, which are summarized below, are expected to discourage certain types of coercive takeover practices and inadequate takeover bids. These provisions are also designed in part to encourage anyone seeking to acquire control of us to first negotiate with our board of directors. We believe that the advantages gained by protecting our ability to negotiate with any unsolicited and potentially unfriendly acquirer outweigh the disadvantages of discouraging such proposals, including those priced above the then-current market value of our common stock, because, among other reasons, the negotiation of such proposals could improve their terms.

Certificate of Incorporation and Bylaws

Our certificate of incorporation and bylaws include provisions that:

authorize our board of directors to issue, without further action by the stockholders, up to 10,000,000 shares of undesignated preferred stock;

require that any action to be taken by our stockholders be effected at a duly called annual or special meeting and not by written consent;

specify that special meetings of our stockholders can be called only by our board of directors, the chairman of the board, the chief executive officer or the president;

establish an advance notice procedure for stockholder approvals to be brought before an annual meeting of our stockholders, including proposed nominations of persons for election to our board of directors;

provide that directors may be removed only for cause;

provide that vacancies on our board of directors may be filled only by a majority of directors then in office, even though less than a quorum;

establish that our board of directors is divided into three classes, Class I, Class II, and Class III, with each class serving staggered terms;

specify that no stockholder is permitted to cumulate votes at any election of the board of directors; and

require a super majority of votes to amend certain of the above-mentioned provisions.

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Delaware Anti-Takeover Statute

We are subject to the provisions of Section 203 of the Delaware General Corporation Law regulating corporate takeovers. In general, Section 203 prohibits a publicly-held Delaware corporation from engaging, under certain circumstances, in a business combination with an interested stockholder for a period of three years following the date the person became an interested stockholder unless:

prior to the date of the transaction, the board of directors of the corporation approved either the business combination or the transaction which resulted in the stockholder becoming an interested stockholder;

upon completion of the transaction that resulted in the stockholder becoming an interested stockholder, the interested stockholder owned at least 85% of the voting stock of the corporation outstanding at the time the transaction commenced, excluding for purposes of determining the voting stock outstanding, but not for determining the outstanding voting stock owned by the interested stockholder, (1) shares owned by persons who are directors and also officers, and (2) shares owned by employee stock plans in which employee participants do not have the right to determine confidentially whether shares held subject to the plan will be tendered in a tender or exchange offer; or

at or subsequent to the date of the transaction, the business combination is approved by the board of directors of the corporation and authorized at an annual or special meeting of stockholders, and not by written consent, by the affirmative vote of at least 66 2/3% of the outstanding voting stock which is not owned by the interested stockholder.

Generally, a business combination includes a merger, asset or stock sale, or other transaction resulting in a financial benefit to the interested stockholder. An interested stockholder is a person who, together with affiliates and associates, owns or, within three years prior to the determination of interested stockholder status, did own 15% or more of a corporation's outstanding voting stock. We expect the existence of this provision to have an anti-takeover effect with respect to transactions our board of directors does not approve in advance. We also anticipate that Section 203 may discourage business combinations or other attempts that might result in a premium over the market price for the shares of common stock held by our stockholders.

The provisions of Delaware law and our certificate of incorporation and bylaws could have the effect of discouraging others from attempting hostile takeovers and, as a consequence, they may also inhibit temporary fluctuations in the market price of our common stock that often result from actual or rumored hostile takeover attempts. These provisions may also have the effect of preventing changes in our management. It is possible that these provisions could make it more difficult to accomplish transactions that stockholders may otherwise deem to be in their best interests.

Tax Benefit Plan

In addition, the Tax Benefit Plan could make it more difficult for a third party to acquire, or could discourage a third party from acquiring, us or a large block of our common stock. A third party that acquires 4.99% or more of our common stock could suffer substantial dilution of its ownership interest under the terms of the Tax Benefit Plan through the issuance of common stock or common stock equivalents to all stockholders other than the acquiring person. The Tax Benefit Plan may also adversely affect the marketability of our common stock by discouraging potential investors from acquiring our stock. Further, the Tax Benefit Plan could delay or frustrate the removal of

incumbent directors and could make a merger, tender offer or proxy contest involving us more difficult, or impede an attempt to acquire a significant or controlling interest in us, even if such events might be beneficial to us and our stockholders.

Transfer Agent and Registrar

The transfer agent and registrar for our common stock is Computershare Trust Company, N.A. The transfer agent's address is 250 Royall Street, Canton, MA 02021, and its telephone number is (781) 575-2879.

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NASDAQ Global Market Listing

Our common stock is listed on the NASDAQ Global Market under the symbol FLDM.

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DESCRIPTION OF THE DEBT SECURITIES

The debt securities may be either secured or unsecured and will either be our senior debt securities or our subordinated debt securities. The debt securities will be issued under one or more separate indentures between us and a trustee to be specified in an accompanying prospectus supplement. Senior debt securities will be issued under a senior indenture and subordinated debt securities will be issued under a subordinated indenture. Together, the senior indenture and the subordinated indenture are called indentures in this description. This prospectus, together with the applicable prospectus supplement, will describe the terms of a particular series of debt securities.

The following is a summary of selected provisions and definitions of the indentures and debt securities to which any prospectus supplement may relate. Other specific terms of the applicable indenture and debt securities will be described in the applicable prospectus supplement. The summary of selected provisions of the indentures and the debt securities appearing below is not complete and is subject to, and qualified entirely by reference to, all of the provisions of the applicable indenture and certificates evidencing the applicable debt securities. If any particular terms of the indenture or debt securities described in a prospectus supplement differ from any of the terms described below, then the terms described below will be deemed to have been superseded by that prospectus supplement. For additional information, you should look at the applicable indenture and the certificate evidencing the applicable debt security that is filed as an exhibit to the registration statement that includes the prospectus.

General

Debt securities may be issued in separate series without limitation as to aggregate principal amount. We may specify a maximum aggregate principal amount for the debt securities of any series.

We are not limited as to the amount of debt securities we may issue under the indentures. Unless otherwise provided in a prospectus supplement, a series of debt securities may be reopened to issue additional debt securities of such series.

The prospectus supplement relating to a particular series of debt securities will set forth:

whether the debt securities are senior or subordinated;

the offering price;

the title;

any limit on the aggregate principal amount;

the person who shall be entitled to receive interest, if other than the record holder on the record date;

the date or dates the principal will be payable;

the interest rate or rates, which may be fixed or variable, if any, the date from which interest will accrue, the interest payment dates and the regular record dates, or the method for calculating the dates and rates;

the place where payments may be made;

any mandatory or optional redemption provisions or sinking fund provisions and any applicable redemption or purchase prices associated with these provisions;

if issued other than in denominations of U.S. \$1,000 or any multiple of U.S. \$1,000, the denominations in which the debt securities shall be issuable;

if applicable, the method for determining how the principal, premium, if any, or interest will be calculated by reference to an index or formula;

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if other than U.S. currency, the currency or currency units in which principal, premium, if any, or interest will be payable and whether we or a holder may elect payment to be made in a different currency;

the portion of the principal amount that will be payable upon acceleration of maturity, if other than the entire principal amount;

if the principal amount payable at stated maturity will not be determinable as of any date prior to stated maturity, the amount or method for determining the amount which will be deemed to be the principal amount;

if applicable, whether the debt securities shall be subject to the defeasance provisions described below under Satisfaction and Discharge; Defeasance or such other defeasance provisions specified in the applicable prospectus supplement for the debt securities;

any conversion or exchange provisions;

whether the debt securities will be issuable in the form of a global security;

the deletion, addition or change in any event of default;

any change or modification to the subordination provisions applicable to the subordinated debt securities if different from those described below under Subordinated Debt Securities;

any deletion, addition or change in the covenants set forth in Article 10 of the indenture;

any paying agents, authenticating agents, security registrars or other agents for the debt securities, if other than the trustee;

any provisions relating to any security provided for the debt securities, including any provisions regarding the circumstances under which collateral may be released or substituted;

any provisions relating to guaranties for the securities and any circumstances under which there may be additional obligors;

any provisions granting special rights to holders when a specified event occurs;

any special tax provisions that apply to the debt securities;

with respect to the debt securities that do not bear interest, the dates for certain required reports to the applicable trustee;

any and all additional, eliminated or changed terms that will apply to the debt securities; and

any other terms of such debt securities.

Unless otherwise specified in the prospectus supplement, the debt securities will be registered debt securities. Debt securities may be sold at a substantial discount below their stated principal amount, bearing no interest or interest at a rate which at time of issuance is below market rates. The U.S. federal income tax considerations applicable to debt securities sold at a discount will be described in the applicable prospectus supplement.

Exchange and Transfer

Debt securities may be transferred or exchanged at the office of the security registrar or at the office of any transfer agent designated by us.

We will not impose a service charge for any transfer or exchange, but we may require holders to pay any tax or other governmental charges associated with any transfer or exchange.

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In the event of any partial redemption of debt securities of any series, we will not be required to:

issue, register the transfer of, or exchange, any debt security of that series during a period beginning at the opening of business 15 days before the day of mailing of a notice of redemption and ending at the close of business on the day of the mailing; or

register the transfer of or exchange any debt security of that series selected for redemption, in whole or in part, except the unredeemed portion of the debt security being redeemed in part.

We will appoint the trustee as the initial security registrar. Any transfer agent, in addition to the security registrar initially designated by us, will be named in the prospectus supplement. We may designate additional transfer agents or change transfer agents or change the office of the transfer agent. However, we will be required to maintain a transfer agent in each place of payment for the debt securities of each series.

Global Securities

The debt securities of any series may be represented, in whole or in part, by one or more global securities. Each global security will:

be registered in the name of a depositary, or its nominee, that we will identify in a prospectus supplement;

be deposited with the depositary or nominee or custodian; and

bear any required legends.

No global security may be exchanged in whole or in part for debt securities registered in the name of any person other than the depositary or any nominee unless:

the depositary has notified us that it is unwilling or unable to continue as depositary or has ceased to be qualified to act as depositary;

an event of default is continuing with respect to the debt securities of the applicable series; or

any other circumstance described in a prospectus supplement has occurred permitting or requiring the issuance of any such security.

As long as the depositary, or its nominee, is the registered owner of a global security, the depositary or nominee will be considered the sole owner and holder of the debt securities represented by the global security for all purposes under the indentures. Except in the above limited circumstances, owners of beneficial interests in a global security will not be:

entitled to have the debt securities registered in their names;

entitled to physical delivery of certificated debt securities; or

considered to be holders of those debt securities under the indenture.

Payments on a global security will be made to the depositary or its nominee as the holder of the global security. Some jurisdictions have laws that require that certain purchasers of securities take physical delivery of such securities in definitive form. These laws may impair the ability to transfer beneficial interests in a global security.

Institutions that have accounts with the depositary or its nominee are referred to as participants. Ownership of beneficial interests in a global security will be limited to participants and to persons that may hold beneficial interests through participants. The depositary will credit, on its book-entry registration and transfer system, the respective principal amounts of debt securities represented by the global security to the accounts of its participants.

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Ownership of beneficial interests in a global security will be shown on and effected through records maintained by the depositary, with respect to participants' interests, or any participant, with respect to interests of persons held by participants on their behalf.

Payments, transfers and exchanges relating to beneficial interests in a global security will be subject to policies and procedures of the depositary. The depositary policies and procedures may change from time to time. Neither any trustee nor we will have any responsibility or liability for the depositary's or any participant's records with respect to beneficial interests in a global security.

Payment and Paying Agents

Unless otherwise indicated in a prospectus supplement, the provisions described in this paragraph will apply to the debt securities. Payment of interest on a debt security on any interest payment date will be made to the person in whose name the debt security is registered at the close of business on the regular record date. Payment on debt securities of a particular series will be payable at the office of a paying agent or paying agents designated by us. However, at our option, we may pay interest by mailing a check to the record holder. The trustee will be designated as our initial paying agent.

We may also name any other paying agents in a prospectus supplement. We may designate additional paying agents, change paying agents or change the office of any paying agent. However, we will be required to maintain a paying agent in each place of payment for the debt securities of a particular series.

All moneys paid by us to a paying agent for payment on any debt security that remain unclaimed for a period ending the earlier of:

10 business days prior to the date the money would be turned over to the applicable state; or

at the end of two years after such payment was due,
will be repaid to us thereafter. The holder may look only to us for such payment.

No Protection in the Event of a Change of Control

Unless otherwise indicated in a prospectus supplement with respect to a particular series of debt securities, the debt securities will not contain any provisions that may afford holders of the debt securities protection in the event we have a change in control or in the event of a highly-leveraged transaction, whether or not such transaction results in a change in control.

Covenants

Unless otherwise indicated in a prospectus supplement with respect to a particular series of debt securities, the debt securities will not contain any financial or restrictive covenants.

Consolidation, Merger and Sale of Assets

Unless we indicate otherwise in a prospectus supplement with respect to a particular series of debt securities, we may not consolidate with or merge into any other person (other than one of our subsidiaries), in a transaction in which we are not the surviving corporation, or convey, transfer or lease our properties and assets substantially as an entirety to, any person (other than a subsidiary of Fluidigm Corporation), unless:

the successor entity, if any, is a U.S. corporation, limited liability company, partnership, trust or other business entity;

the successor entity assumes our obligations on the debt securities and under the indentures;

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immediately after giving effect to the transaction, no default or event of default shall have occurred and be continuing; and

certain other conditions specified in the indenture are met.

Events of Default

Unless we indicate otherwise in a prospectus supplement, the following will be events of default for any series of debt securities under the indentures:

- (1) we fail to pay principal of or any premium on any debt security of that series when due;
- (2) we fail to pay any interest on any debt security of that series for 30 days after it becomes due;
- (3) we fail to deposit any sinking fund payment when due;
- (4) we fail to perform any other covenant in the indenture and such failure continues for 90 days after we are given the notice required in the indentures; and
- (5) certain events involving our bankruptcy, insolvency or reorganization.

Additional or different events of default applicable to a series of debt securities may be described in a prospectus supplement. An event of default of one series of debt securities is not necessarily an event of default for any other series of debt securities.

The trustee may withhold notice to the holders of any default, except defaults in the payment of principal, premium, if any, interest, any sinking fund installment on, or with respect to any conversion right of, the debt securities of such series. However, the trustee must consider it to be in the interest of the holders of the debt securities of such series to withhold this notice.

Unless we indicate otherwise in a prospectus supplement, if an event of default, other than an event of default described in clause (5) above, shall occur and be continuing with respect to any series of debt securities, either the trustee or the holders of at least 25% in aggregate principal amount of the outstanding securities of that series may declare the principal amount and premium, if any, of the debt securities of that series, or if any debt securities of that series are original issue discount securities, such other amount as may be specified in the applicable prospectus supplement, in each case together with accrued and unpaid interest thereon, if any, to be due and payable immediately.

Unless we indicate otherwise in a prospectus supplement, if an event of default described in clause (5) above shall occur, the principal amount and premium, if any, of all the debt securities of that series, or if any debt securities of that series are original issue discount securities, such other amount as may be specified in the applicable prospectus supplement, in each case together with accrued and unpaid interest thereon, if any, will automatically become immediately due and payable. Any payment by us on the subordinated debt securities following any such acceleration will be subject to the subordination provisions described below under Subordinated Debt Securities.

Notwithstanding the foregoing, each indenture will provide that we may, at our option, elect that the sole remedy for an event of default relating to our failure to comply with our obligations described under the section entitled Reports below or our failure to comply with the requirements of Section 314(a)(1) of the Trust Indenture Act will for the first 180 days after the occurrence of such an event of default consist exclusively of the right to receive additional interest on the relevant series of debt securities at an annual rate equal to (i) 0.25% of the principal amount of such series of debt securities for the first 90 days after the occurrence of such event of default and (ii) 0.50% of the principal amount of such series of debt securities from the 91st day to, and including, the 180th day after the occurrence of such event of default, which we call additional interest. If we so elect, the additional interest will accrue on all outstanding debt securities from and including the date on

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which such event of default first occurs until such violation is cured or waived and shall be payable on each relevant interest payment date to holders of record on the regular record date immediately preceding the interest payment date. On the 181st day after such event of default (if such violation is not cured or waived prior to such 181st day), the debt securities will be subject to acceleration as provided above. In the event we do not elect to pay additional interest upon any such event of default in accordance with this paragraph, the debt securities will be subject to acceleration as provided above.

In order to elect to pay the additional interest as the sole remedy during the first 180 days after the occurrence of any event of default relating to the failure to comply with the reporting obligations in accordance with the preceding paragraph, we must notify all holders of debt securities and the trustee and paying agent of such election prior to the close of business on the first business day following the date on which such event of default occurs. Upon our failure to timely give such notice or pay the additional interest, the debt securities will be immediately subject to acceleration as provided above.

After acceleration, the holders of a majority in aggregate principal amount of the outstanding securities of that series may, under certain circumstances, rescind and annul such acceleration if all events of default, other than the non-payment of accelerated principal, or other specified amounts or interest, have been cured or waived.

Other than the duty to act with the required care during an event of default, the trustee will not be obligated to exercise any of its rights or powers at the request of the holders unless the holders shall have offered to the trustee reasonable indemnity. Generally, the holders of a majority in aggregate principal amount of the outstanding debt securities of any series will have the right to direct the time, method and place of conducting any proceeding for any remedy available to the trustee or exercising any trust or power conferred on the trustee.

A holder of debt securities of any series will not have any right to institute any proceeding under the indentures, or for the appointment of a receiver or a trustee, or for any other remedy under the indentures, unless:

- (1) the holder has previously given to the trustee written notice of a continuing event of default with respect to the debt securities of that series;
- (2) the holders of at least 25% in aggregate principal amount of the outstanding debt securities of that series have made a written request and have offered reasonable indemnity to the trustee to institute the proceeding; and
- (3) the trustee has failed to institute the proceeding and has not received direction inconsistent with the original request from the holders of a majority in aggregate principal amount of the outstanding debt securities of that series within 60 days after the original request.

Holders may, however, sue to enforce the payment of principal, premium or interest on any debt security on or after the due date or to enforce the right, if any, to convert any debt security (if the debt security is convertible) without following the procedures listed in (1) through (3) above.

We will furnish the trustee an annual statement from our officers as to whether or not we are in default in the performance of the conditions and covenants under the indenture and, if so, specifying all known defaults.

Modification and Waiver

Unless we indicate otherwise in a prospectus supplement, the applicable trustee and we may make modifications and amendments to an indenture with the consent of the holders of a majority in aggregate principal amount of the outstanding securities of each series affected by the modification or amendment.

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We may also make modifications and amendments to the indentures for the benefit of holders without their consent, for certain purposes including, but not limited to:

to evidence the succession of another person to Fluidigm, or successive successions, and the assumption by any such successor of the covenants of Fluidigm in the indentures in compliance with Article 8 of the indentures;

adding covenants;

adding events of default;

making certain changes to facilitate the issuance of the debt securities;

to add to, change or eliminate any of the provisions of the indentures or series of securities, provided that any such addition, change or elimination (A) shall neither (i) apply to any security of any series created prior to the execution of such supplemental indenture and entitled to the benefit of such provision nor (ii) modify the rights of the holder of any such security with respect to such provision or (B) shall become effective only when there is no such security outstanding;

securing the debt securities;

providing for guaranties of, or additional obligors on, the debt securities;

to establish the form or term of debt securities as permitted by Sections 2.1 and 3.1 of the indenture;

providing for a successor trustee or additional trustees;

conforming the indenture to the description of the securities set forth in this prospectus or the accompanying prospectus supplement;

curing any ambiguity, defect or inconsistency; provided that such action shall not adversely affect the interest of the holders in any material respect;

permitting or facilitating the defeasance and discharge of the debt securities;

make such other provisions in regard to matters or questions arising under the indentures or under any supplemental indentures as our board of directors may deem necessary or desirable, and which does not in each case adversely affect the interests of the holders of the debt securities of a series; and

comply with requirements of the SEC in order to effect or maintain the qualifications of the indentures under the Trust Indenture Act of 1939, as amended (the Trust Indenture Act).

However, neither the trustee nor we may make any modification or amendment without the consent of the holder of each outstanding security of that series affected by the modification or amendment if such modification or amendment would:

change the stated maturity of the principal of, or any installment of principal or interest on, any debt security;

reduce the principal, premium, if any, or interest on any debt security or any amount payable upon redemption or repurchase, whether at our option or the option of any holder, or reduce the amount of any sinking fund payments;

reduce the principal of an original issue discount security or any other debt security payable on acceleration of maturity;

change the place of payment or the currency in which any debt security is payable;

impair the right to enforce any payment after the stated maturity or redemption date;

if subordinated debt securities, modify the subordination provisions in a materially adverse manner to the holders;

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adversely affect the right to convert any debt security if the debt security is a convertible debt security; or

change the provisions in the indenture that relate to modifying or amending the indenture.

Satisfaction and Discharge; Defeasance

We may be discharged from our obligations on the debt securities, subject to limited exceptions, of any series that have matured or will mature or be redeemed within one year if we deposit enough money with the trustee to pay all the principal, interest and any premium due to the stated maturity date or redemption date of the debt securities.

Each indenture contains a provision that permits us to elect either or both of the following:

we may elect to be discharged from all of our obligations, subject to limited exceptions, with respect to any series of debt securities then outstanding. If we make this election, the holders of the debt securities of the series will not be entitled to the benefits of the indenture, except for the rights of holders to receive payments on debt securities or the registration of transfer and exchange of debt securities and replacement of lost, stolen or mutilated debt securities.

we may elect to be released from our obligations under some or all of any financial or restrictive covenants applicable to the series of debt securities to which the election relates and from the consequences of an event of default resulting from a breach of those covenants.

To make either of the above elections, we must irrevocably deposit in trust with the trustee enough money to pay in full the principal, interest and premium on the debt securities. This amount may be made in cash and/or U.S. government obligations or, in the case of debt securities denominated in a currency other than U.S. dollars, cash in the currency in which such series of securities is denominated and/or foreign government obligations. As a condition to either of the above elections, for debt securities denominated in U.S. dollars, we must deliver to the trustee an opinion of counsel that the holders of the debt securities will not recognize income, gain or loss for U.S. federal income tax purposes as a result of the action.

With respect to debt securities of any series that are denominated in a currency other than United States dollars, foreign government obligations means:

direct obligations of the government that issued or caused to be issued the currency in which such securities are denominated and for the payment of which obligations its full faith and credit is pledged, or, with respect to debt securities of any series which are denominated in Euros, direct obligations of certain members of the European Union for the payment of which obligations the full faith and credit of such members is pledged, which in each case are not callable or redeemable at the option of the issuer thereof; or

obligations of a person controlled or supervised by or acting as an agency or instrumentality of a government described in the bullet above the timely payment of which is unconditionally guaranteed as a full faith and credit obligation by such government, which are not callable or redeemable at the option of the issuer thereof.

Notices

Notices to holders will be given by mail to the addresses of the holders in the security register.

Governing Law

The indentures and the debt securities will be governed by, and construed under, the laws of the State of New York, except to the extent that the Trust Indenture Act is applicable.

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No Personal Liability of Directors, Officers, Employees and Stockholders

No incorporator, stockholder, employee, agent, officer, director or subsidiary of ours will have any liability for any obligations of ours, or because of the creation of any indebtedness under the debt securities, the indentures or supplemental indentures. The indentures provide that all such liability is expressly waived and released as a condition of, and as a consideration for, the execution of such indentures and the issuance of the debt securities.

Regarding the Trustee

The indentures limit the right of the trustee, should it become our creditor, to obtain payment of claims or secure its claims.

The trustee will be permitted to engage in certain other transactions with us. However, if the trustee acquires any conflicting interest, and there is a default under the debt securities of any series for which it is trustee, the trustee must eliminate the conflict or resign.

Subordinated Debt Securities

The following provisions will be applicable with respect to each series of subordinated debt securities, unless otherwise stated in the prospectus supplement relating to that series of subordinated debt securities.

The indebtedness evidenced by the subordinated debt securities of any series is subordinated, to the extent provided in the subordinated indenture and the applicable prospectus supplement, to the prior payment in full, in cash or other payment satisfactory to the holders of senior debt, of all senior debt, including any senior debt securities.

Upon any distribution of our assets upon any dissolution, winding up, liquidation or reorganization, whether voluntary or involuntary, marshalling of assets, assignment for the benefit of creditors, or in bankruptcy, insolvency, receivership or other similar proceedings, payments on the subordinated debt securities will be subordinated in right of payment to the prior payment in full in cash or other payment satisfactory to holders of senior debt of all senior debt.

In the event of any acceleration of the subordinated debt securities of any series because of an event of default with respect to the subordinated debt securities of that series, holders of any senior debt would be entitled to payment in full in cash or other payment satisfactory to holders of senior debt of all senior debt before the holders of subordinated debt securities are entitled to receive any payment or distribution.

In addition, the subordinated debt securities will be structurally subordinated to all indebtedness and other liabilities of our subsidiaries, including trade payables and lease obligations. This occurs because our right to receive any assets of our subsidiaries upon their liquidation or reorganization, and your right to participate in those assets, will be effectively subordinated to the claims of that subsidiary's creditors, including trade creditors, except to the extent that we are recognized as a creditor of such subsidiary. If we are recognized as a creditor of that subsidiary, our claims would still be subordinate to any security interest in the assets of the subsidiary and any indebtedness of the subsidiary senior to us.

We are required to promptly notify holders of senior debt or their representatives under the subordinated indenture if payment of the subordinated debt securities is accelerated because of an event of default.

Under the subordinated indenture, we may not make payment on the subordinated debt securities if:

a default in our obligations to pay principal, premium, if any, interest or other amounts on our senior debt occurs and the default continues beyond any applicable grace period, which we refer to as a payment default; or

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any other default occurs and is continuing with respect to designated senior debt that permits holders of designated senior debt to accelerate its maturity, which we refer to as a non-payment default, and the trustee receives a payment blockage notice from us or some other person permitted to give the notice under the subordinated indenture.

We will resume payments on the subordinated debt securities:

in case of a payment default, when the default is cured or waived or ceases to exist, and

in case of a non-payment default, the earlier of when the default is cured or waived or ceases to exist or 179 days after the receipt of the payment blockage notice.

No new payment blockage period may commence on the basis of a non-payment default unless 365 days have elapsed from the effectiveness of the immediately prior payment blockage notice. No non-payment default that existed or was continuing on the date of delivery of any payment blockage notice to the trustee shall be the basis for a subsequent payment blockage notice.

As a result of these subordination provisions, in the event of our bankruptcy, dissolution or reorganization, holders of senior debt may receive more, ratably, and holders of the subordinated debt securities may receive less, ratably, than our other creditors. The subordination provisions will not prevent the occurrence of any event of default under the subordinated indenture.

The subordination provisions will not apply to payments from money or government obligations held in trust by the trustee for the payment of principal, interest and premium, if any, on subordinated debt securities pursuant to the provisions described under the section entitled "Satisfaction and Discharge; Defeasance," if the subordination provisions were not violated at the time the money or government obligations were deposited into trust.

If the trustee or any holder receives any payment that should not have been made to them in contravention of subordination provisions before all senior debt is paid in full in cash or other payment satisfactory to holders of senior debt, then such payment will be held in trust for the holders of senior debt.

Senior debt securities will constitute senior debt under the subordinated indenture.

Additional or different subordination provisions may be described in a prospectus supplement relating to a particular series of debt securities.

Definitions

Designated senior debt means our obligations under any particular senior debt in which the instrument creating or evidencing the same or the assumption or guarantee thereof, or related agreements or documents to which we are a party, expressly provides that such indebtedness shall be designated senior debt for purposes of the subordinated indenture. The instrument, agreement or other document evidencing any designated senior debt may place limitations and conditions on the right of such senior debt to exercise the rights of designated senior debt.

Indebtedness means the following, whether absolute or contingent, secured or unsecured, due or to become due, outstanding on the date of the indenture for such series of securities or thereafter created, incurred or assumed:

our indebtedness evidenced by a credit or loan agreement, note, bond, debenture or other written obligation;

all of our obligations for money borrowed;

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all of our obligations evidenced by a note or similar instrument given in connection with the acquisition of any businesses, properties or assets of any kind,

our obligations:

as lessee under leases required to be capitalized on the balance sheet of the lessee under generally accepted accounting principles, or

as lessee under leases for facilities, capital equipment or related assets, whether or not capitalized, entered into or leased for financing purposes;

all of our obligations under interest rate and currency swaps, caps, floors, collars, hedge agreements, forward contracts or similar agreements or arrangements;

all of our obligations with respect to letters of credit, bankers' acceptances and similar facilities, including reimbursement obligations with respect to the foregoing;

all of our obligations issued or assumed as the deferred purchase price of property or services, but excluding trade accounts payable and accrued liabilities arising in the ordinary course of business;

all obligations of the type referred to in the above clauses of another person, the payment of which, in either case, we have assumed or guaranteed, for which we are responsible or liable, directly or indirectly, jointly or severally, as obligor, guarantor or otherwise, or which are secured by a lien on our property; and

renewals, extensions, modifications, replacements, restatements and refundings of, or any indebtedness or obligation issued in exchange for, any such indebtedness or obligation described in the above clauses of this definition.

Senior debt means the principal of, premium, if any, and interest, including all interest accruing subsequent to the commencement of any bankruptcy or similar proceeding, whether or not a claim for post-petition interest is allowable as a claim in any such proceeding, and rent payable on or in connection with, and all fees and other amounts payable in connection with, our indebtedness. However, senior debt shall not include:

any debt or obligation if its terms or the terms of the instrument under which or pursuant to which it is issued expressly provide that it shall not be senior in right of payment to the subordinated debt securities or expressly provide that such indebtedness is on the same basis or junior to the subordinated debt securities; or

debt to any of our subsidiaries, a majority of the voting stock of which is owned, directly or indirectly, by us.

Subsidiary means a corporation more than 50% of the outstanding voting stock of which is owned, directly or indirectly, by us or by one or more of our other subsidiaries or by a combination of us and our other subsidiaries. For purposes of this definition, voting stock means stock or other similar interests which ordinarily has or have voting power for the election of directors, or persons performing similar functions, whether at all times or only so long as no senior class of stock or other interests has or have such voting power by reason of any contingency.

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DESCRIPTION OF THE WARRANTS

We may issue warrants for the purchase of common stock, preferred stock or debt securities or any combination thereof. Warrants may be issued independently or together with common stock, preferred stock or debt securities and may be attached to or separate from any offered securities. Each series of warrants will be issued under a separate warrant agreement. This summary of some provisions of the warrants is not complete. You should refer to the warrant agreement relating to the specific warrants being offered for the complete terms of the warrants.

The particular terms of any issue of warrants will be described in the prospectus supplement relating to the issue. Those terms may include:

the number of shares of common stock or preferred stock purchasable upon the exercise of warrants to purchase such shares and the price at which such number of shares may be purchased upon such exercise;

the designation, stated value and terms (including, without limitation, liquidation, dividend, conversion and voting rights) of the series of preferred stock purchasable upon exercise of warrants to purchase preferred stock;

the principal amount of debt securities that may be purchased upon exercise of a debt warrant and the exercise price for the warrants, which may be payable in cash, securities or other property;

the date on which the right to exercise the warrants will commence and the date on which the right will expire;

United States Federal income tax consequences applicable to the warrants; and

any additional terms of the warrants, including terms, procedures, and limitations relating to the exchange, exercise and settlement of the warrants.

Holders of equity warrants will not be entitled:

to vote, consent or receive dividends;

receive notice as stockholders with respect to any meeting of stockholders for the election of our directors or any other matter; or

exercise any rights as stockholders of Fluidigm.

Debt warrant certificates may be exchangeable for new debt warrant certificates of different denominations. Debt warrants may be exercised at the corporate trust office of the warrant agent or any other office indicated in the prospectus supplement. Prior to the exercise of their debt warrants, holders of debt warrants will not have any of the rights of holders of the debt securities purchasable upon exercise and will not be entitled to payment of principal or any premium, if any, or interest on the debt securities purchasable upon exercise.

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PLAN OF DISTRIBUTION

We may sell the securities offered through this prospectus (1) to or through underwriters or dealers, (2) directly to purchasers, including our affiliates, (3) through agents, or (4) through a combination of any of these methods. The securities may be distributed at a fixed price or prices, which may be changed, market prices prevailing at the time of sale, prices related to the prevailing market prices, or negotiated prices. The prospectus supplement will include the following information:

the terms of the offering;

the names of any underwriters or agents;

the name or names of any managing underwriter or underwriters;

the purchase price of the securities;

the net proceeds from the sale of the securities;

any delayed delivery arrangements;

any underwriting discounts, commissions or agency fees and other items constituting underwriters or agents compensation;

any initial price to public;

any discounts or concessions allowed or reallocated or paid to dealers; and

any commissions paid to agents.

We may issue to the holders of our common stock on a pro rata basis for no consideration, subscription rights to purchase shares of our common stock or preferred stock. These subscription rights may or may not be transferable by stockholders. The applicable prospectus supplement will describe the specific terms of any offering of our common or preferred stock through the issuance of subscription rights, including the terms of the subscription rights offering, the terms, procedures and limitations relating to the exchange and exercise of the subscription rights and, if applicable, the material terms of any standby underwriting or purchase arrangement entered into by us in connection with the offering of common or preferred stock through the issuance of subscription rights.

Sale through Underwriters or Dealers

If underwriters are used in the sale, the underwriters will acquire the securities for their own account, including through underwriting, purchase, security lending or repurchase agreements with us. The underwriters may resell the securities from time to time in one or more transactions, including negotiated transactions. Underwriters may sell the securities in order to facilitate transactions in any of our other securities (described in this prospectus or otherwise), including other public or private transactions and short sales. Underwriters may offer securities to the public either through underwriting syndicates represented by one or more managing underwriters or directly by one or more firms acting as underwriters. Unless otherwise indicated in the prospectus supplement, the obligations of the underwriters to purchase the securities will be subject to certain conditions, and the underwriters will be obligated to purchase all the offered securities if they purchase any of them. The underwriters may change from time to time any initial public offering price and any discounts or concessions allowed or reallocated or paid to dealers.

If dealers are used in the sale of securities offered through this prospectus, we will sell the securities to them as principals. They may then resell those securities to the public at varying prices determined by the dealers at the time of resale. The prospectus supplement will include the names of the dealers and the terms of the transaction.

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Direct Sales and Sales through Agents

We may sell the securities offered through this prospectus directly. In this case, no underwriters or agents would be involved. Such securities may also be sold through agents designated from time to time. The prospectus supplement will name any agent involved in the offer or sale of the offered securities and will describe any commissions payable to the agent by us. Unless otherwise indicated in the prospectus supplement, any agent will agree to use its reasonable best efforts to solicit purchases for the period of its appointment.

We may sell the securities directly to institutional investors or others who may be deemed to be underwriters within the meaning of the Securities Act with respect to any sale of those securities. The terms of any such sales will be described in the prospectus supplement.

Delayed Delivery Contracts

If the prospectus supplement indicates, we may authorize agents, underwriters or dealers to solicit offers from certain types of institutions to purchase securities at the public offering price under delayed delivery contracts. These contracts would provide for payment and delivery on a specified date in the future. The contracts would be subject only to those conditions described in the prospectus supplement. The applicable prospectus supplement will describe the commission payable for solicitation of those contracts.

At-the-Market Offerings

To the extent that we make sales through one or more underwriters or agents in at-the-market offerings, we will do so pursuant to the terms of a sales agency financing agreement or other at-the-market offering arrangement between us, on one hand, and the underwriters or agents, on the other. If we engage in at-the-market sales pursuant to any such agreement, we will issue and sell our securities through one or more underwriters or agents, which may act on an agency basis or a principal basis. During the term of any such agreement, we may sell securities on a daily basis in exchange transactions or otherwise as we agree with the underwriters or agents in each case in a manner that constitutes an at the market offering as defined in Rule 415(a)(4) of the Securities Act. Any such agreement will provide that any securities sold will be sold at prices related to the then prevailing market prices for our securities. Therefore, exact figures regarding proceeds that will be raised or commissions to be paid cannot be determined as of the date of this prospectus. The terms of any such agreement will be set forth in more detail in the applicable prospectus or prospectus supplement.

Market Making, Stabilization and Other Transactions

Unless the applicable prospectus supplement states otherwise, each series of offered securities will be a new issue and will have no established trading market. We may elect to list any series of offered securities on an exchange. Any underwriters that we use in the sale of offered securities may make a market in such securities, but may discontinue such market making at any time without notice. Therefore, we cannot assure you that the securities will have a liquid trading market.

Any underwriter may also engage in stabilizing transactions, syndicate covering transactions and penalty bids in accordance with Rule 104 under the Exchange Act. Stabilizing transactions involve bids to purchase the underlying security in the open market for the purpose of pegging, fixing or maintaining the price of the securities. Syndicate covering transactions involve purchases of the securities in the open market after the distribution has been completed in order to cover syndicate short positions.

Penalty bids permit the underwriters to reclaim a selling concession from a syndicate member when the securities originally sold by the syndicate member are purchased in a syndicate covering transaction to cover syndicate short positions. Stabilizing transactions, syndicate covering transactions and penalty bids may cause the price of the securities to be higher than it would be in the absence of the transactions. The underwriters may, if they commence these transactions, discontinue them at any time.

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Derivative Transactions and Hedging

We, the underwriters or other agents may engage in derivative transactions involving the securities. These derivatives may consist of short sale transactions and other hedging activities. The underwriters or agents may acquire a long or short position in the securities, hold or resell securities acquired and purchase options or futures on the securities and other derivative instruments with returns linked to or related to changes in the price of the securities. In order to facilitate these derivative transactions, we may enter into security lending or repurchase agreements with the underwriters or agents. The underwriters or agents may effect the derivative transactions through sales of the securities to the public, including short sales, or by lending the securities in order to facilitate short sale transactions by others. The underwriters or agents may also use the securities purchased or borrowed from us or others (or, in the case of derivatives, securities received from us in settlement of those derivatives) to directly or indirectly settle sales of the securities or close out any related open borrowings of the securities.

Electronic Auctions

We may also make sales through the Internet or through other electronic means. Since we may from time to time elect to offer securities directly to the public, with or without the involvement of agents, underwriters or dealers, utilizing the Internet or other forms of electronic bidding or ordering systems for the pricing and allocation of such securities, you will want to pay particular attention to the description of that system we will provide in a prospectus supplement.

Such electronic system may allow bidders to directly participate, through electronic access to an auction site, by submitting conditional offers to buy that are subject to acceptance by us, and which may directly affect the price or other terms and conditions at which such securities are sold. These bidding or ordering systems may present to each bidder, on a so-called real-time basis, relevant information to assist in making a bid, such as the clearing spread at which the offering would be sold, based on the bids submitted, and whether a bidder's individual bids would be accepted, prorated or rejected. For example, in the case of debt security, the clearing spread could be indicated as a number of basis points above an index treasury note. Of course, many pricing methods can and may also be used.

Upon completion of such an electronic auction process, securities will be allocated based on prices bid, terms of bid or other factors. The final offering price at which securities would be sold and the allocation of securities among bidders would be based in whole or in part on the results of the Internet or other electronic bidding process or auction.

General Information

Agents, underwriters, and dealers may be entitled, under agreements entered into with us, to indemnification by us against certain liabilities, including liabilities under the Securities Act. Our agents, underwriters, and dealers, or their affiliates, may be customers of, engage in transactions with or perform services for us, in the ordinary course of business. In no event will the total amount of compensation paid to the agents, underwriters and dealers upon completion of any offering exceed 8.0% of the gross proceeds of such offering.

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LEGAL MATTERS

Certain legal matters will be passed upon for us by Wilson Sonsini Goodrich & Rosati, Professional Corporation, Palo Alto, California. Additional legal matters may be passed on for us, or any underwriters, dealers or agents, by counsel that we will name in the applicable prospectus supplement.

EXPERTS

The financial statements as of December 31, 2016 and 2015 and for the two years ended December 31, 2016 and management's assessment of the effectiveness of internal control over financial reporting (which is included in Management's Report on Internal Control over Financial Reporting) as of December 31, 2016 incorporated in this prospectus by reference to the Annual Report on Form 10-K for the year ended December 31, 2016 have been so incorporated in reliance on the report of PricewaterhouseCoopers LLP, an independent registered public accounting firm, given on the authority of said firm as experts in auditing and accounting.

Ernst & Young LLP, independent registered public accounting firm, has audited our consolidated financial statements as of and for the year ended December 31, 2014, included in our Annual Report on Form 10-K for the year ended December 31, 2016, as set forth in their report which is incorporated by reference in this prospectus and elsewhere in the registration statement. Our consolidated financial statements are incorporated by reference in reliance on Ernst & Young LLP's reports, given on their authority as experts in accounting and auditing.

WHERE YOU CAN FIND MORE INFORMATION

We file annual, quarterly and other reports, proxy statements and other information with the SEC. Our SEC filings are available to the public over the Internet at the SEC's website at <http://www.sec.gov>. You may also read and copy any document we file at the SEC's Public Reference Room at 100 F Street, NE, Washington, D.C. 20549. Please call the SEC at 1-800-SEC-0330 for further information on the Public Reference Room. Our Annual Report on Form 10-K, Quarterly Reports on Form 10-Q, and Current Reports on Form 8-K, including any amendments to those reports, and other information that we file with or furnish to the SEC pursuant to Section 13(a) or 15(d) of the Exchange Act can also be accessed free charge through the investor relations page of our website located at <http://investors.fluidigm.com/sec.cfm>. These filings will be available as soon as reasonably practicable after we electronically file such material with, or furnish it to, the SEC. Information contained on our website is not part of this prospectus.

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INFORMATION INCORPORATED BY REFERENCE

The SEC allows us to incorporate by reference the information we file with it, which means that we can disclose important information to you by referring you to another document that we have filed separately with the SEC. You should read the information incorporated by reference because it is an important part of this prospectus. We incorporate by reference the following information or documents that we have filed with the SEC (excluding those portions of any Form 8-K that are not deemed filed pursuant to the General Instructions of Form 8-K):

our Annual Report on Form 10-K for the year ended December 31, 2016 filed with the SEC on March 3, 2017;

our Current Reports on Form 8-K filed with the SEC on January 11, 2017, February 10, 2017, and March 2, 2017;

the description of our common stock contained in our Registration Statement on Form 8-A (File No. 001-34180) filed with the Commission on February 7, 2011, pursuant to Section 12(b) of the Exchange Act, including any amendment or report filed for the purpose of updating such description; and

the description of the our preferred share purchase rights contained in our on Form 8-A (File No. 001-34180) filed with the Commission on November 22, 2016, pursuant to Section 12(b) of the Exchange Act, including any amendment or report filed for the purpose of updating such description.

All reports and other documents we subsequently file pursuant to Section 13(a), 13(c), 14 or 15(d) of the Exchange Act prior to the termination of this offering, including all such documents we may file with the SEC after the date of the initial registration statement and prior to the effectiveness of the registration statement, but excluding any information furnished to, rather than filed with, the SEC, will also be incorporated by reference into this prospectus and deemed to be part of this prospectus from the date of the filing of such reports and documents.

Any statement contained in any document incorporated by reference herein shall be deemed to be modified or superseded for purposes of this prospectus to the extent that a statement contained in this prospectus or any prospectus supplement modifies or supersedes such statement. Any statement so modified or superseded shall not be deemed, except as so modified or superseded, to constitute a part of this prospectus.

Under no circumstances will any information furnished under current items 2.02 or 7.01 of Form 8-K be deemed incorporated herein by reference unless such Form 8-K expressly provides to the contrary.

We will provide without charge to each person, including any beneficial owner, to whom this prospectus is delivered, upon written or oral request, a copy of any or all documents that are incorporated by reference into this prospectus, but not delivered with the prospectus, other than exhibits to such documents unless such exhibits are specifically incorporated by reference into the documents that this prospectus incorporates. You should direct written requests to: Fluidigm Corporation, 7000 Shoreline Court, Suite 100, South San Francisco, CA 94080, Attention: Investor Relations, or you may call us at (650) 266-6000.

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Shares

Common Stock

Joint Book-Running Managers

Piper Jaffray

UBS Investment Bank

December , 2018