

FLUIDIGM CORP
Form 424B5
August 16, 2012
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Registration No. 333-180550

This preliminary prospectus supplement and the accompanying prospectus relate to an effective registration statement under the Securities Act of 1933, but the information in this prospectus supplement is not complete and may be changed. This prospectus supplement and the accompanying prospectus are not an offer to sell the securities and we are not soliciting an offer to buy these securities in any jurisdiction where the offer or sale is not permitted.

SUBJECT TO COMPLETION, DATED AUGUST 15, 2012

PROSPECTUS SUPPLEMENT

(To the Prospectus dated May 10, 2012)

Shares

Common Stock

We are offering _____ shares of our common stock pursuant to this prospectus supplement and the accompanying prospectus.

Our common stock is quoted on the NASDAQ Global Market under the symbol FLDM. The last reported sale price of our common stock on August 14, 2012 was \$14.34 per share.

Our business and an investment in our common stock include significant risks. See **Risk Factors** beginning on page S-6 of this prospectus supplement, and in **Item 1A-Risk Factors** of our Quarterly Report on Form 10-Q for the quarter ended June 30, 2012, which has been filed with the Securities and Exchange Commission and is incorporated by reference in this prospectus supplement and the accompanying prospectus.

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 discount		
Proceeds, before expenses, to us		

The underwriters may also purchase up to an additional _____ shares from us at the public offering price, less the underwriting discount, within 30 days from the date of this prospectus supplement to cover overallocments, if any. If the underwriters exercise the option in full, the total discount and commission will be \$ _____ and the total net proceeds, before expenses, to us will be \$ _____.

The underwriters expect to deliver the shares against payment on or about _____, 2012.

Joint Book - Running Managers

Piper Jaffray

Cowen and Company

Prospectus Supplement dated August _____, 2012.

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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-38 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.

You should rely only on the information contained or incorporated by reference in this prospectus supplement, the accompanying prospectus and in any free writing prospectuses we may provide to you in connection with this offering. We have not, and the underwriters have not, authorized any other person to provide you with any information that is different. 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 the section captioned Item 1A-Risk Factors in our Quarterly Report on Form 10-Q for the quarter ended June 30, 2012.

Fluidigm Corporation

Overview

We develop, manufacture and market microfluidic systems for growth markets in the life science and agricultural biotechnology, or Ag-Bio, industries. Our proprietary microfluidic systems consist of instruments and consumables, including chips, assays and other reagents. Our systems are designed to significantly simplify experimental workflow, increase throughput and reduce costs, while providing the excellent data quality demanded by our customers. In addition, our proprietary technology enables genetic analysis that in many instances was previously impractical. We actively market four microfluidic systems, including nine different commercial chips for nucleic acid research and three families of assays, to leading academic institutions, diagnostic laboratories, and pharmaceutical, biotechnology and Ag-Bio companies. We have sold over 565 systems to customers in over 25 countries worldwide.

We have launched several product lines, including our BioMark system for gene expression analysis, genotyping and digital polymerase chain reaction, or digital PCR, in 2006, our EP1 system for single nucleotide polymorphism, or SNP, genotyping and digital PCR in 2008, our Access Array system for target enrichment in 2009, our BioMark HD real-time PCR system for high-throughput gene expression analysis, single-cell analysis, SNP genotyping and digital PCR in 2011, and our C₁ Single-Cell AutoPrep system for single-cell analysis in June 2012. In addition, in May 2011, we launched our assay and reagent products, including our DELTAgene assays for gene expression, including single-cell analysis, our SNPtype assays for SNP genotyping, and our Access Array Target-Specific primers for next generation DNA sequencing. Our systems utilize one or more chips designed for particular applications and include specialized instrumentation and software, as well as assays and other reagents for certain applications.

We distribute our microfluidic 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 primarily located in Singapore. Our facility in Singapore manufactures our instruments and fabricates all of our chips for commercial sale and for our research and development purposes. Our South San Francisco facility fabricates chips for our research and development purposes and manufactures our assays and produces other reagents for commercial sale.

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.

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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, BioMark, Access Array, EPIC Dynamic Array, SNPtype and DELTAgene 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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We have derived the summary consolidated statement of operations data for the years ended December 31, 2009, December 31, 2010 and December 31, 2011 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 six months ended June 30, 2011 and 2012, and the consolidated balance sheet data as of June 30, 2012 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. 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			Six Months Ended June 30	
	2009	2010	2011	2011	2012
(In thousands, except per share data)					
Consolidated Statement of Operations Data:					
Revenue:					
Product revenue	\$ 23,599	\$ 30,462	\$ 40,581	\$ 18,123	\$ 23,524
License and collaboration revenue		1,625	1,716	921	38
Grant revenue	1,813	1,473	568	229	331
Total revenue	25,412	33,560	42,865	19,273	23,893
Costs and expenses:					
Cost of product revenue	11,486	11,581	13,191	5,878	7,472
Research and development	12,315	13,007	13,936	6,642	8,266
Selling, general and administrative	19,648	23,545	31,304	15,285	18,824
Litigation settlement			3,000	3,000	
Total costs and expenses	43,449	48,133	61,431	30,805	34,562
Loss from operations	(18,037)	(14,573)	(18,566)	(11,532)	(10,669)
Interest expense	(2,876)	(2,158)	(3,101)	(2,272)	(509)
Loss from changes in the fair value of convertible preferred stock warrants, net	(135)	(445)	(1,483)	(1,483)	
Gain from extinguishment of convertible preferred stock warrants			765	765	
Other income (expense), net	1,870	357	81	108	(52)
Loss before income taxes	(19,178)	(16,819)	(22,304)	(14,414)	(11,230)
Benefit from (Provision for) income taxes	50	(83)	(166)	(110)	(40)
Net loss	\$ (19,128)	\$ (16,902)	\$ (22,470)	\$ (14,524)	\$ (11,270)
Deemed dividend related to the change in conversion rate of Series E convertible preferred stock			(9,900)	(9,900)	
Net loss attributed to common stockholders	\$ (19,128)	\$ (16,902)	\$ (32,370)	\$ (24,424)	\$ (11,270)
	\$ (11.02)	\$ (8.94)	\$ (1.81)	\$ (1.58)	\$ (0.55)

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Net loss per share attributed to common stockholders,
basic and diluted⁽¹⁾

Shares used in computing net loss per share attributed to common stockholders, basic and diluted ⁽¹⁾	1,736	1,890	17,847	15,464	20,469
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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, 2011 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, 2009, 2010 and 2011. 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 June 30, 2012 for an explanation of the method used to calculate basic and diluted net loss per share attributed to common stockholders for the six months ended June 30, 2012.

	As of June 30, 2012	
	Actual	As Adjusted ⁽¹⁾ (Unaudited) (In thousands)
Consolidated Balance Sheet Data:		
Cash, cash equivalents and investments	\$ 38,873	\$ 76,153
Working capital	40,931	78,211
Total assets	64,932	102,212
Total stockholders' equity	48,920	86,200

(1) Reflects the sale by us of an assumed 2,789,400 shares of our common stock in this offering at an assumed offering price of \$14.34 per share, the last reported sale price of our common stock on August 14, 2012, after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us and the application of the net proceeds from such sale. A \$1.00 increase (decrease) in the assumed offering price, would increase (decrease) cash, cash equivalents and investments and each of working capital, total assets and total stockholders' equity by \$2.6 million, after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us, assuming that the number of shares offered by us, as set forth above, remains the same. Each increase of 1.0 million shares in the number of shares offered by us at the assumed public offering price would increase cash, cash equivalents and investments and each of working capital, total assets and total stockholders' equity by approximately \$13.5 million. Similarly, each decrease of 1.0 million shares in the number of shares offered by us at the assumed public offering price would decrease cash and cash equivalents and investments and each of working capital, total assets and total stockholders' equity by approximately \$13.5 million. The as adjusted information discussed above is illustrative only and will be adjusted based on the actual public offering price and other terms of this offering determined at pricing.

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RISK FACTORS

We operate in a rapidly changing environment that involves numerous uncertainties and risks. The following risks and uncertainties may have a material and adverse effect on our business, financial condition or results of operations. You should consider these risks and uncertainties carefully, together with all of the other information included or incorporated by reference in this prospectus supplement and the accompanying prospectus. If any of the risks or uncertainties we face were to occur, the trading price of our securities could decline, and you may lose all or part of your investment.

Risks Related to our Business and Strategy

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

We have a limited operating history and have incurred significant losses in each fiscal year since our inception, including net losses of \$11.3 million, \$19.1 million, \$16.9 million and \$22.5 million during the six months ended June 30, 2012 and the years 2009, 2010 and 2011, respectively. As of June 30, 2012, we had an accumulated deficit of \$233.1 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 may continue to incur substantial operating and net losses and negative cash flow from operations. We expect that our selling, general and administrative expenses will continue to increase due to the additional operational and reporting costs associated with being a public company. We anticipate that our business will generate operating losses until we successfully implement our commercial development strategy and generate significant additional revenue to support our level of operating expenses. 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 our research and product development efforts do not result in commercially viable products within the timeline anticipated, 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 capabilities of our microfluidic systems 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 new products or enhance existing products would have a substantial adverse effect on our business and results of operations.

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

The application of our technologies to single-cell analysis, molecular diagnostics, digital polymerase chain reaction, or digital PCR, and sample preparation for next generation DNA sequencing are

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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. For example, we launched our C₁ Single-Cell AutoPrep system in June 2012, which applies our technology to, among other things, improve single-cell analytic workflow for single-cell analysis. The future growth of the single-cell analysis market and the success of our new system 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 analysis. If the market for single-cell analysis, molecular diagnostics, digital PCR and sample preparation for next generation DNA sequencing do not develop as we expect, our business may be adversely affected. Additionally, our success in these emerging markets may depend to a large extent on our ability to successfully market and sell products using our technologies. If we are not able successfully market and sell our products or to 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 emerging markets. For example, our collaboration agreement with Novartis Vaccines & Diagnostics, Inc., under which we would have applied our technologies in digital PCR to develop potential in-vitro diagnostics applications for the molecular diagnostics market, terminated pursuant to its terms, effective May 1, 2012. With the termination of the collaboration agreement, intellectual property rights in non-invasive prenatal diagnostics and digital PCR, which had been exclusively optioned under the agreement, now revert back to us. Although we can now fully pursue all market opportunities with customers interested in researching and developing products in all fields, including prenatal health and non-invasive prenatal diagnostics, we are evaluating our business plans and strategies, and our entry into the diagnostics market may be delayed, if it occurs at all.

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

Our success depends, in part, 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 microfluidic technology is relatively new, and most potential customers have limited knowledge of, or experience with, our products. Prior to adopting our microfluidic 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.

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.

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, diagnostic laboratories, and pharmaceutical, biotechnology and agricultural biotechnology, or Ag-Bio, companies that perform analyses for research and commercial purposes. Our success will depend, in part, upon our ability to

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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 requires 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.

The life science research and Ag-Bio 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 and Ag-Bio companies that design, manufacture and market instruments and consumables for gene expression analysis, single-cell analysis, genotyping, PCR, digital PCR, other nucleic acid detection 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 Affymetrix, Inc., Agilent Technologies, Inc., Bio-Rad Laboratories, Inc., Illumina, Inc., Life Technologies Corporation, LGC Limited, Luminex Corporation, NanoString Technologies, Inc., PerkinElmer, Inc. (through its acquisition of Caliper Life Sciences, Inc.), RainDance Technologies, Inc., Roche Applied Science (a division of Roche Diagnostics Corporation), Sequenom, Inc. and WaferGen Bio-systems, Inc. have products that compete in certain segments of the market in which we sell our products. In addition, a number of other companies and academic groups are in the process of developing novel technologies for life science markets.

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 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, any of which could cause harm to our business, operating results and financial condition. Our failure to compete effectively could materially and adversely 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, and pharmaceutical, biotechnology and Ag-Bio companies, 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 microfluidic systems and chips to academic institutions, diagnostic laboratories, and pharmaceutical, biotechnology and Ag-Bio companies 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 the resources available 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

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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 microfluidic systems and chips. 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.

We may not be able to develop new products or enhance the capabilities of our existing microfluidic 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 gene expression analysis, genotyping, digital PCR and single-cell analysis, as well as potential markets for our products such as high-throughput DNA sequencing and molecular diagnostics 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.

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

We manufacture and assemble all of our instruments and chips for commercial sale at our facility in Singapore and our assays for commercial sale at our headquarters in South San Francisco, California. No other manufacturing or assembly facilities are currently available to us, particularly facilities of the size and scope required by our Singapore operations. Our facilities and the equipment we use to manufacture our instruments, chips and assays would be costly to replace and could require substantial lead time 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. 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.

The current leases for our manufacturing facility in Singapore expire at various times through October 2014 and our current lease for our facilities in South San Francisco expires in April 2015. If we are unable to secure new leases upon the expiration of our current leases or if either of our facilities becomes otherwise unavailable to us, and we are required to move our operations to a new manufacturing facility, we will incur significant expense in connection with the establishment of a new facility. A move would be administratively and logistically challenging and would delay and otherwise adversely affect our manufacturing activities and business operations. We cannot provide assurances that we will be able to secure new leases on our existing manufacturing facilities or a new manufacturing facility on acceptable terms, if at all.

We are dependent on single 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 source suppliers for certain components and materials used in our products. We do not have long term contracts with our suppliers of these components and materials. The loss of the single source suppliers of any of the following components and/or materials would require significant time and effort to locate and qualify an alternative source of supply:

The chips used in our microfluidic systems are fabricated using a specialized polymer that is 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.

The reader for our BioMark system requires specialized custom camera lenses, fiber light guides and other components that are available from a limited number of sources.

The raw materials for our DELTAgene and SNPtype assays and Access Array Target-Specific primers. Our reliance on these suppliers also subjects us to other risks that could harm our business, including the following:

we may be subject to increased component costs;

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

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

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our suppliers may encounter financial hardships unrelated to our demand for components, which could inhibit their ability to fulfill our orders and meet our requirements.

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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. Any interruption or delay in the supply of components or materials, or our inability to obtain components or materials 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.

We may experience development or manufacturing problems or delays that could limit the 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. In addition, 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. If we are unable to keep up with demand for our products by successfully manufacturing 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.

All of our instruments and chips for commercial sale are manufactured at our facility in Singapore. Production of the elastomeric block that is at the core of our chips 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 chips or, in more severe cases, require us to halt the manufacture of our chips until the problem is resolved. Identifying and resolving the cause of a drop in yield can require substantial time and resources.

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

Our financial results may vary significantly from quarter-to-quarter due to a number of factors, which may lead to volatility in our stock price.

Our quarterly revenue and results of operations have varied in the past and may continue to vary significantly from quarter-to-quarter. For example, in 2009, 2010 and 2011, we experienced higher sales in the fourth quarter than in the first quarter of the next fiscal year. In addition, revenue from sales of our instruments relative to sales of our consumables may fluctuate or deviate significantly from expectations. The variability in our quarterly results of operations, including revenue from sales of our instruments relative to our consumables, may lead to volatility in our stock price as research analysts and investors respond to these quarterly 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; changes in our pricing and sales policies or the pricing and sales policies of our competitors; our ability to design, manufacture and deliver products to our customers in a timely and cost-effective manner; quality control or yield problems in our manufacturing operations; our ability to timely obtain adequate quantities of the components used in our products; 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. The

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foregoing factors, as well as other factors, could materially and adversely affect our quarterly and annual results of operations. 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 revenue shortfall could magnify the adverse impact of such revenue shortfall on our results of operations. We expect that our sales will continue to fluctuate on a 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.

Our products could become subject to regulation as medical devices by the U.S. Food and Drug Administration, or FDA, or other regulatory agencies in the future.

Our products are currently labeled and sold to academic institutions, life sciences laboratories, and pharmaceutical, biotechnology and Ag-Bio companies for research purposes only, and not as diagnostic tests or medical devices. As products labeled for research use only, and used by our customers for research purposes only, they are subject only to limited regulation as medical devices by the FDA under 21 Code of Federal Regulations Section 809.10(c) with respect to their labeling. Research use only products are not currently subject to regulation as medical devices by comparable agencies of other countries. However, if we change the labeling of our products in the future to include indications for human diagnostic applications or medical uses, or we have knowledge that our customers are using our products for diagnostic purposes, our products or related applications could be subject to additional regulation as in vitro diagnostic devices, such as under the FDA's pre- and post-market regulations for medical devices. For example, if we wish to label and market our products for use in performing clinical diagnostics, we would first need to obtain FDA pre-market clearance or approval, unless otherwise exempt from clearance or approval requirements. Obtaining FDA clearance or approval can be expensive and uncertain, and generally takes several months to years to obtain, and may require detailed and comprehensive scientific and clinical data. Notwithstanding the expense, these efforts may never result in FDA approval or clearance. Even if we were to obtain regulatory approval or clearance, it may not be for the uses we believe are important or commercially attractive.

Further, the FDA may expand its jurisdiction over our products or the products of our customers, which could impose restrictions on our ability to market and sell our products. For example, our customers may 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 LDTs. However, the FDA could assert jurisdiction over some or all LDTs, which may impact our customers' uses of our products. A significant change in the way that the FDA regulates our products or the LDTs that our customers develop may require us to change our business model in order to maintain compliance with these laws. The FDA held a meeting in July 2010, during which it indicated that it intends to reconsider its policy of enforcement discretion and to begin drafting a new oversight framework for LDTs. Additionally, in June 2011 the FDA issued a draft guidance document intended to clarify the types of in vitro diagnostic products that are properly labeled for research use only. The draft 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, or other 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, offered for clinical diagnostic uses. These circumstances may include written or verbal marketing claims regarding a product's performance in clinical applications and a manufacturer's provision of technical support for clinical applications. If the FDA imposes significant changes to the regulation of LDTs, or modifies its approach to our products labeled for research use only, but which may be used by our customers for clinical use, it could reduce our revenue or increase our costs and adversely affect our business, prospects, results of operations or financial condition.

We may be required to proactively achieve compliance with certain FDA regulations and to conform our manufacturing operations to the FDA's good manufacturing practice regulations for medical devices,

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known as the Quality System Regulation, or QSR, as part of our contracts with customers or as part of our collaborations with third parties. In addition, we may voluntarily seek to conform our manufacturing operations to the QSR. For clinical diagnostic products that are regulated as medical devices, the FDA enforces the QSR through periodic unannounced inspections of registered manufacturing facilities. If we are required to comply with the QSR, the failure to take satisfactory corrective action in response to an adverse QSR inspection could result in enforcement actions, including a public warning letter, a shutdown of manufacturing operations, a product recall, civil or criminal penalties or other sanctions, which could in turn cause our sales and business to suffer.

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, particularly Gajus V. Worthington, our President and Chief Executive Officer. Additionally, to expand our research and product development efforts, we need 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. 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.

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. In addition, our research and product development efforts could 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.

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 will be sufficient to meet our anticipated cash requirements for at least the next 18 months. However, 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;

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the cost of defending, in litigation or otherwise, any claims that we infringe third-party patents or violate other intellectual property rights;

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

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

the cost and timing of establishing additional technical support capabilities;

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.

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, if available, may involve covenants restricting our operations or our ability to incur additional debt. Any debt or additional 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 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 are unable to integrate future acquisitions successfully, our operating results and prospects could be harmed.

In the future, we may make acquisitions to improve our product offerings or 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. 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

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

We may be unable to secure the equity or debt funding necessary to finance future acquisitions on terms that are acceptable to us. If we finance acquisitions by issuing equity or convertible debt securities, our existing stockholders will likely experience dilution, and if we finance future acquisitions with debt funding, we will incur interest expense and may have to comply with financial covenants and secure that debt obligation with our assets.

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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 been experiencing 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 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 molecular diagnostics research and development. Continuation or further deterioration of these financial and macroeconomic conditions could significantly harm our sales, profitability and results of operations.

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 three months ended June 30, 2012 and the years 2009, 2010 and 2011, approximately 49%, 46%, 45% and 47%, respectively, of our product 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 overseas operations and develop opportunities in other international areas. Engaging in international business inherently involves a number of difficulties and risks, including:

required compliance with existing and changing foreign regulatory requirements and laws;

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.

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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.

In addition, 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

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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, it would become more costly in U.S. dollars for us to manufacture our products in Singapore.

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.

If we are unable to manage our anticipated growth effectively, our business could be harmed.

The rapid growth of our business has placed a significant strain on our managerial, operational and financial resources and systems. To execute our anticipated growth successfully, we must continue to attract and retain qualified personnel and manage and train them effectively. We must also upgrade our internal business processes and capabilities to create the scalability that a growing business demands.

We believe our facilities located in Singapore and South San Francisco, California, are sufficient to meet our short-term manufacturing needs. The current leases for our facilities in Singapore expire at various times through October 2014 and our current lease for our facilities in South San Francisco expires in April 2015. In order to meet long-term demand for our microfluidic systems, we believe that we will need to add to our existing manufacturing space in Singapore or move all of our manufacturing facilities to a new location in Singapore in 2014. Such a move will involve significant expense in connection with the establishment of new clean rooms, the movement and installation of key manufacturing equipment and modifications to our manufacturing process, and we cannot assure you that such a move would not delay or otherwise adversely affect our manufacturing activities. We cannot provide assurances that we will be able to secure a lease on a new manufacturing facility on acceptable terms, if at all.

Further, our anticipated growth will place additional strain on our suppliers and manufacturing facilities, resulting in an increased need for us to carefully monitor quality assurance. Any failure by us to manage our growth effectively could have an adverse effect on our ability to achieve our development and commercialization goals.

Our products could have unknown 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 microfluidic systems utilize novel and complex technology applied on a nanoliter scale 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 microfluidic systems, these risks may increase. We generally provide warranties that our microfluidic systems will meet performance expectations and will be free from defects. We also provide warranties relating to other parts of our microfluidic systems. The costs incurred in correcting any defects or errors may be substantial and could adversely affect our operating margins.

In manufacturing our products, including our systems, chips 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.

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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, our Access Array system is marketed as compatible with all major next generation DNA sequencing 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.

To use our products, and our BioMark system 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, and our BioMark system 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, which represented 34% of our product revenue in the three months ended June 30, 2012 and 36% of our product revenue in 2011, involves real-time quantitative PCR, or qPCR. Leading suppliers of reagents for real-time qPCR reactions include Life Technologies Corporation and Roche

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Applied Science, 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

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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.

We have limited experience in marketing, selling and distributing our products, and 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 have limited experience in marketing, selling and distributing our products. Our BioMark and EP1 systems for genomic analysis were introduced for commercial sale in 2006 and 2008, respectively. Our Access Array system for sample preparation was introduced for commercial sale in 2009, our BioMark HD system for genomic analysis was introduced for commercial sale in 2011, we began producing and selling assays for use with our chips in May 2011, and we launched our C₁ Single-Cell AutoPrep system for single-cell analysis in June 2012. 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 certain territories. Our future sales will depend in large part on our ability 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 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. We may not be able to attract and retain personnel or be able to build an efficient and effective sales and marketing force, which could 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 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 will require 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 will evaluate the need to hire additional accounting and financial staff with appropriate public company experience and technical accounting knowledge. Moreover, if we are not able to comply with the requirements of Section 404 in a timely manner, 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 Market, or NASDAQ, the SEC or other regulatory authorities, which would require additional financial and management resources.

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Risks associated with a company-wide implementation of an enterprise resource planning, or ERP, system may adversely affect our business and results of operations or the effectiveness of internal control over financial reporting.

We have been 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. Our business and results of operations may 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. Additionally, if we do not effectively implement the ERP system as planned or if the system does not operate as intended, it could adversely affect the effectiveness of our internal controls over financial reporting.

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

In general, under Section 382 of the Internal Revenue Code, a corporation that undergoes an ownership change is subject to limitations on its ability to utilize its pre-change net operating losses, or NOLs, to offset future taxable income. If we undergo ownership changes, our ability to utilize NOLs could be limited by Section 382 of the Internal Revenue Code. Future changes in our stock ownership, some of which are outside of our control, could result in an ownership change under Section 382 of the Internal Revenue Code. Because we may not be able to utilize a material portion of the NOLs reflected on our balance sheet, we have fully reserved against the value of our NOLs on our balance sheet.

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

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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;

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 and/or to determine the scope, coverage and validity of others' proprietary rights. 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 gross margins. 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 and third parties may assert that we are employing their proprietary technology without authorization. For example, on June 4, 2008 we received a letter from Applied Biosystems, Inc., now Life Technologies Corporation, asserting that our BioMark system for gene expression analysis infringes upon U.S. Patent No. 6,814,934, or the '934 patent, and its foreign counterparts in Europe and Canada. In June 2011, we resolved this dispute by entering into a license agreement with Life Technologies Corporation which, among other matters, granted us a non-exclusive license to the '934 patent and its foreign counterparts.

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

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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 integrated fluidic circuit and multi-layer soft lithography 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.

Our rights to use the technology we license are 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 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 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.

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 chips, which incorporate technology developed with U.S. government grants. All of our instruments, including microfluidic systems, and chips for commercial sale 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, one of the licensors applied for a waiver of the domestic manufacturing requirement with respect to certain patents. 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 licensors requested a continued waiver of the domestic manufacturing requirement with respect to the relevant patents. If in the future it were to be determined that we are in violation of the domestic manufacturing requirement and additional waivers of such requirement were either not requested or not granted, then the U.S. government could exercise its march-in rights. In addition, these licenses contain provisions relating to compliance with this domestic manufacturing requirement. If it were determined that we are not in compliance with these provisions and such non-compliance constituted a material breach of the licenses, the licenses could be terminated. Either the exercise of march-in rights or the termination of one or more of our licenses could materially adversely affect our business, operations and financial condition.

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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.

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

Risks Related to Our Common Stock

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, including affiliated stockholders, who hold substantial blocks of our stock. As of June 30, 2012, we had 20,632,596 shares of common stock outstanding, and stockholders holding at least 5% of our stock, individually or with affiliated entities, collectively beneficially owned or controlled approximately 42.2% of such shares. 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 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;

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

failure to complete significant sales;

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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;

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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 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.

Our directors, executive officers and large stockholders have substantial control over and could limit your ability to influence the outcome of key transactions, including changes of control.

As of June 30, 2012, our current executive officers, directors, stockholders holding at least 5% of our outstanding stock, and their respective affiliates, collectively beneficially owned or controlled approximately 44.2% of the outstanding shares of our common stock. Accordingly, these executive officers, directors, large stockholders, and their respective affiliates, acting as a group, can have substantial influence over the outcome of corporate actions requiring stockholder approval, including the election of directors, any merger, consolidation or sale of all or substantially all of our assets or any other significant corporate transactions. These stockholders may also delay or prevent a change of control of us, even if such a change of control would benefit our other stockholders. The significant concentration of stock ownership may adversely affect the trading price of our common stock due to investors' perception that conflicts of interest may exist or arise.

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;

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;

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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;

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 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, have contractual restrictions against paying cash dividends and currently intend to retain our future earnings to fund the development and growth of our business. As a result, capital appreciation, if any, of our common stock will be stockholders' sole source of gain for the foreseeable future.

We have broad discretion in the use of the net proceeds from this offering and our initial public 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 working capital and other general corporate purposes. 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. 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.

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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, predicts, projects, should, 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 SEC filings that are incorporated by reference into this prospectus supplement and the accompanying prospectus contain or incorporate by reference market data that we obtained from industry sources. These sources do not guarantee the accuracy or completeness of the information. Although we believe that the industry sources are reliable, we have not independently verified the information. The market data include projections that are based on a number of other projections. While we believe these assumptions to be reasonable and sound as of the date of this prospectus supplement, actual results may differ from the projections.

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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' over-allotment option is exercised in full).

We expect to use the net proceeds that we will receive from this offering for research and development, commercialization of our products, working capital and other general corporate purposes. We may also use 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 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.

Table of Contents**SELECTED FINANCIAL DATA**

On January 1, 2012, we adopted new guidance regarding comprehensive income, which was applied retrospectively, that provides companies with the option to present the components of net income, the components of other comprehensive income and the total of comprehensive income either in a single continuous statement of comprehensive income or in two separate but consecutive statements. The standard eliminates the option to present components of other comprehensive income as part of the statement of changes in stockholders' equity. The amendments in this guidance do not change the items that must be reported in other comprehensive income or when an item of other comprehensive income must be reclassified in net income. We adopted the two-statement approach in the first quarter of 2012.

The table below presents selected historical consolidated statements of comprehensive loss data. We have derived our consolidated statements of comprehensive loss data for the years ended December 31, 2009, 2010 and 2011 from our audited consolidated financial statements included in our Annual Report on Form 10-K for the year ended December 31, 2011 and incorporated by reference in this prospectus. The following selected financial information revises historical information to illustrate the presentation required by the new guidance regarding comprehensive income for each of the periods presented.

STATEMENTS OF COMPREHENSIVE INCOME**(Unaudited, in thousands)**

	Year Ended December 31,		
	2009	2010	2011
Net loss	\$ (19,128)	\$ (16,902)	\$ (22,470)
Other comprehensive income (loss):			
Foreign currency translation adjustment	52	(274)	10
Unrealized gain on investments			14
Other comprehensive income (loss):	52	(274)	24
Total comprehensive loss	\$ (19,076)	\$ (17,176)	\$ (22,446)

Table of Contents**DILUTION**

Purchasers of common stock offered by this prospectus supplement will suffer immediate and substantial dilution in the net tangible book value per share of common stock. Our net tangible book value as of June 30, 2012 was approximately \$46.4 million, or approximately \$2.25 per share, based on the total number of shares of our common stock outstanding as of June 30, 2012. Net tangible book value per share is equal to (1) our total tangible assets less total liabilities, divided by (2) the aggregate number of shares of our common stock outstanding as of June 30, 2012. Dilution in net tangible book value per share represents the difference between the amount per share paid by purchasers in this offering and the net tangible book value per share of our common stock immediately after this offering.

After giving effect to an assumed sale of 2,789,400 shares of common stock at an assumed offering price of \$14.34 per share (the last reported sale price of our common stock on August 14, 2012), and after deducting the estimated underwriting discounts and commissions and estimated offering expenses, our adjusted net tangible book value as of June 30, 2012 would have been approximately \$83.7 million, or approximately \$3.57 per share. This represents an immediate increase in net tangible book value of \$1.32 per share to existing stockholders and an immediate dilution in net tangible book value of \$10.77 per share to purchasers of common stock in this offering, as illustrated in the following table:

Assumed public offering price per share		\$ 14.34
Net tangible book value per share as of June 30, 2012 before giving effect to the offering of shares by us	\$ 2.25	
Increase in as adjusted net tangible book value per share attributable to new investors	\$ 1.32	
As adjusted net tangible book value per share after the offering		\$ 3.57
Dilution per share to new investors in the offering		\$ 10.77

Each \$1.00 increase (decrease) in the assumed offering price of \$14.34 per share would increase (decrease) our as adjusted net tangible book value after this offering by approximately \$2.6 million, or approximately \$0.11 per share, and the dilution per share to new investors by approximately \$3.68 per share, assuming that the number of shares offered by us, as set forth above, remains the same and after deducting the underwriting discounts and commissions and estimated offering expenses payable by us. We may also increase or decrease the number of shares we are offering from the assumed number of shares set forth above. An increase of 1,000,000 shares in the number of shares offered by us from the assumed number of shares set forth above would increase our as adjusted net tangible book value after this offering by approximately \$13.5 million, or approximately \$0.41 per share, and the dilution per share to new investors would be approximately \$10.36 per share, assuming that the assumed offering price remains the same and after deducting the underwriting discounts and commissions and estimated offering expenses payable by us. Similarly, a decrease of 1,000,000 shares in the number of shares offered by us from the assumed number of shares set forth above would decrease our as adjusted net tangible book value after this offering by approximately \$13.5 million, or approximately \$0.44 per share, and the dilution per share to new investors would be approximately \$11.21 per share, assuming that the assumed offering price remains the same and after deducting the underwriting discounts and commissions and estimated offering expenses payable by us. The information discussed above is illustrative only and will adjust based on the actual offering price, the actual number of shares that we offer in this offering, and other terms of this offering determined at pricing.

If the underwriter exercises in full its option to purchase 418,410 additional shares of common stock at the assumed public offering price of \$14.34 per share, the as adjusted net tangible book value after this offering would be \$3.75 per share, representing an increase in net tangible book value of \$1.50 per share

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to existing stockholders and immediate dilution in net tangible book value of \$10.59 per share to investors participating in this offering at the assumed public offering price of \$14.34 per share.

The table above excludes the following shares:

3,122,903 shares of common stock issuable upon exercise of options outstanding as of June 30, 2012, at a weighted average exercise price of \$10.26 per share;

5,120 shares of common stock issuable upon the exercise of warrants outstanding as of June 30, 2012, at an exercise price of \$15.62 per share; and

536,424 shares of common stock reserved for future issuance under our 2011 Equity Incentive Plan and any future automatic increase in shares reserved for issuance under such plan.

To the extent that any of these options or warrants are exercised, new options are issued under our stock-based compensation plans or we issue additional shares of common stock in the future, there will be further dilution to investors participating in this offering.

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

The following is a discussion of certain U.S. federal income tax considerations to non-U.S. holders with respect to their ownership and disposition of our common stock issued pursuant to this offering. In general, a non-U.S. holder is any beneficial owner of our common stock other than:

an individual who is a citizen or resident of the United States for U.S. federal income tax purposes;

a corporation (or other entity treated as a corporation for U.S. federal income tax purposes) created or organized in or under the laws of the United States, any state thereof or the District of Columbia;

an estate, the income of which is includible in gross income for U.S. federal income tax purposes regardless of its source; or

a trust if (a) a court within the United States is able to exercise primary supervision over the administration of the trust and one or more U.S. persons have the authority to control all substantial decisions of the trust or (b) it has a valid election in effect under applicable Treasury regulations to be treated as a U.S. person.

This discussion is based on current provisions of the Internal Revenue Code, U.S. Treasury Regulations promulgated under the Internal Revenue Code, judicial opinions, published positions of the Internal Revenue Service, or IRS, and all other applicable authorities, all of which are subject to change, possibly with retroactive effect. No ruling has been or will be sought from the IRS with respect to the matters discussed below, and there can be no assurance that the IRS will not take a contrary position or that any such contrary position would not be sustained by a court. This discussion assumes that the non-U.S. holder will hold our common stock as a capital asset (generally property held for investment).

This discussion does not address all aspects of U.S. federal income taxation or any aspects of alternative minimum, estate, state, local, or non-U.S. taxation. It also does not consider any specific facts or circumstances that may apply to particular non-U.S. holders that may be subject to special treatment under the U.S. federal income tax laws, including, but not limited to:

banks, thrifts, insurance companies or other financial institutions;

partnerships or other pass-through entities (or entities treated as such for U.S. federal income tax purposes) or persons that hold shares of our common stock through such entities;

controlled foreign corporations, passive foreign investment companies, and corporations that accumulate earnings to avoid U.S. federal income tax;

tax-exempt organizations;

tax-qualified retirement plans;

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

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

dealers in securities or currencies;

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

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persons subject to the alternative minimum tax;

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

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

persons that will hold common stock as a position in a hedging transaction, straddle or conversion transaction for tax purposes. If a partnership or any other entity or arrangement taxed as a partnership for U.S. federal income tax purposes is a beneficial owner of our common stock, the treatment of a partner in the partnership will generally depend upon the status of the equity owner of such partnership and the activities of the partnership. Accordingly, partnerships (and entities and arrangements taxed as partnerships) that hold our common stock and owners in such partnerships (or other entities or arrangements taxed as partnerships) are urged to consult their tax advisors regarding the specific U.S. federal income tax consequences to them of acquiring, owning or disposing of our common stock.

PROSPECTIVE INVESTORS ARE URGED TO CONSULT THEIR TAX ADVISORS REGARDING THE PARTICULAR U.S. FEDERAL INCOME TAX CONSEQUENCES TO THEM OF ACQUIRING, OWNING AND DISPOSING OF SHARES OF OUR COMMON STOCK, AS WELL AS THE U.S. FEDERAL, STATE, LOCAL AND NON-U.S. INCOME AND OTHER TAX CONSIDERATIONS OF ACQUIRING, OWNING AND DISPOSING OF SHARES OF COMMON STOCK.

Dividends

If we make cash or other property distributions on our common stock, those payments will constitute dividends for U.S. 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 our current and accumulated earnings and profits, they will constitute a return of capital and will first reduce the recipient's adjusted tax basis in our common stock, but not below zero, and then will be treated as gain from the sale of stock as described below under the heading Gain on Sale or Other Disposition of Common Stock.

Dividends paid to a non-U.S. holder will be subject to U.S. federal withholding tax at a rate equal to 30 percent of the gross amount of the dividend, or a lower rate prescribed by an applicable income tax treaty, unless the dividends are effectively connected with a trade or business carried on by the non-U.S. holder within the United States (and, if required by an applicable income tax treaty, are attributable to a U.S. permanent establishment maintained by the non-U.S. holder). Under applicable Treasury Regulations, a non-U.S. holder will be required to satisfy certain certification requirements, generally on IRS Form W-8BEN (or applicable successor form), directly or through an intermediary, in order to claim a reduced rate of withholding under an applicable income tax treaty. If tax is withheld in an amount in excess of the amount prescribed by an applicable income tax treaty, a refund of the excess amount may be obtained by the non-U.S. holder by timely filing an appropriate claim for refund with the IRS.

Dividends that are effectively connected with such a U.S. trade or business (and, if required by an applicable income tax treaty, are attributable to a U.S. permanent establishment maintained by the recipient) will not be subject to U.S. withholding tax if the non-U.S. holder files the required forms, generally an IRS Form W-8ECI (or applicable successor form), with the payor of the dividend, but instead will be subject to U.S. federal income tax on a net income basis in the same manner as if the non-U.S. holder were a resident of the United States. A foreign corporation that receives dividends constituting effectively connected income may, under certain circumstances, be subject to an additional branch profits tax at a rate of 30 percent, or a lower rate prescribed by an applicable income tax treaty, with respect to such effectively connected income.

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Gain on Sale or Other Disposition of Common Stock

A non-U.S. holder will not be subject to U.S. federal income tax on any gain realized upon the sale or other taxable disposition of the non-U.S. holder's shares of common stock unless:

the gain is effectively connected with a trade or business carried on by the non-U.S. holder within the United States (and, if required by an applicable tax treaty, is attributable to a U.S. permanent establishment or a fixed base maintained by the non-U.S. holder), in which case the non-U.S. holder generally will be required to pay tax on the net gain derived from the sale under regular graduated U.S. federal income tax rates and, if the non-U.S. holder is a corporation, the branch profits tax may apply, at a 30 percent rate or such lower rate as may be specified by an applicable income tax treaty;

the non-U.S. holder is a nonresident alien individual who is present in the United States for 183 days or more in the taxable year of disposition (and is not otherwise treated as a U.S. resident alien for U.S. federal income tax purposes) and certain other conditions are met, in which case the non-U.S. holder will be required to pay a flat 30 percent tax (or such lower rate as may be specified by an applicable income tax treaty between the United States and such non-U.S. holder's country of residence) on the net gain derived from the disposition, which tax may be offset by U.S. source capital losses, if any, provided that the non-U.S. holder has timely filed U.S. federal income tax returns with respect to such losses; or

our common stock constitutes a U.S. real property interest by reason of our status as a United States real property holding corporation, or USRPHC, for U.S. federal income tax purposes at any time within the shorter of the five-year period preceding the disposition or the non-U.S. holder's 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 U.S. real property interests only if the non-U.S. holder actually or constructively held more than five percent of our common stock at any time during the shorter of the five-year period preceding the disposition or the non-U.S. holder's holding period for our common stock.

Information Reporting and Backup Withholding

We must report annually to the IRS and to each non-U.S. holder the amount of dividends on our common stock, the name and address of the recipient and the amount, if any, of tax withheld. These information reporting requirements apply even if withholding was not required because the dividends were effectively connected dividends or withholding was reduced by an applicable income tax treaty. Under tax treaties or other agreements, the IRS may make its reports available to tax authorities in the country in which the non-U.S. holder resides or is established.

Dividend payments made to a non-U.S. holder that is not an exempt recipient generally will be subject to backup withholding at the then applicable rate (currently 28 percent, which rate is scheduled to increase to 31 percent for payments made on or after January 1, 2013) unless the non-U.S. holder certifies as to its foreign status, which certification may be made by providing the Company with an IRS Form W-8BEN or IRS Form W-8ECI, as applicable, and certain other requirements are met. Notwithstanding the foregoing, backup withholding may apply if either we or our paying agent has actual knowledge, or reason to know, that the holder is a U.S. person that is not an exempt recipient.

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Backup withholding is not an additional tax. Rather, the amount of tax withheld is applied to the U.S. federal income tax liability of persons subject to backup withholding. If backup withholding results in an overpayment of U.S. federal income taxes, a refund may be obtained, provided the required documents are timely filed with the IRS.

Legislation Relating to Foreign Accounts

The Internal Revenue Code will impose a U.S. federal withholding tax of 30 percent on dividends and the gross proceeds of a disposition of our common stock to a foreign financial institution (as specifically defined for this purpose) 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 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). The legislation also will generally impose a U.S. federal withholding tax of 30 percent on dividends and the gross proceeds of a disposition of our common stock to a non-financial foreign entity unless such entity provides the withholding agent with either a certification that it does not have any substantial direct or indirect U.S. owners or provides information regarding direct and indirect U.S. owners of the entity. Although these rules currently apply to applicable payments made after December 31, 2012, the IRS has issued Proposed Treasury Regulations providing that the withholding provisions described above will generally apply to payments of dividends on our common stock made on or after January 1, 2014 and to payments of gross proceeds from a sale or other disposition of such stock on or after January 1, 2015. The Proposed Treasury Regulations described above will not be effective until they are issued in their final form, and as of the date of this prospectus, it is not possible to determine whether the proposed regulations will be finalized in their current form or at all. Prospective investors should consult their tax advisors regarding these withholding provisions.

Table of Contents**UNDERWRITING**

Piper Jaffray & Co. and Cowen and Company, LLC are acting as joint book-running managers of the offering and as representatives of the underwriters named below. Subject to the terms and conditions stated in the underwriting agreement dated the date of this prospectus supplement, each underwriter named below has severally agreed to purchase, and we have agreed to sell to that underwriter, the number of shares set forth opposite the underwriter's name.

Underwriter	Number of Shares
Piper Jaffray & Co.	
Cowen and Company, LLC	
Total	

The underwriting agreement provides that the obligations of the underwriters to purchase the shares included in this offering are subject to approval of legal matters by counsel and to other conditions. The underwriters are obligated to purchase all the shares (other than those covered by the over-allotment option described below) if they purchase any of the shares.

Shares sold by the underwriters to the public will initially be offered at the initial public offering price set forth on the cover of this prospectus supplement. Any shares sold by the underwriters to securities dealers may be sold at a discount from the initial public offering price not to exceed \$ _____ per share. If all the shares are not sold at the initial offering price, the underwriters may change the offering price and the other selling terms.

If the underwriters sell more shares than the total number set forth in the table above, we have granted to the underwriters an option, exercisable for 30 days from the date of this prospectus supplement, to purchase up to _____ additional shares at the public offering price less the underwriting discount. The underwriters may exercise the option solely for the purpose of covering over-allotments, if any, in connection with this offering. To the extent the option is exercised, each underwriter must purchase a number of additional shares approximately proportionate to that underwriter's initial purchase commitment. Any shares issued or sold under the option will be issued and sold on the same terms and conditions as the other shares that are the subject of this offering.

We and our officers and directors have agreed that, for a period of 90 days from the date of this prospectus supplement, we and they will not, directly or indirectly, without the prior written consent of the representatives, offer, sell, pledge, contract to sell (including any short sale), grant any option to purchase or otherwise dispose of any shares of our common stock, or enter into any hedging transaction or other transaction that is designed to, or could reasonably be expected to, result in the disposition of any shares of our common stock or other securities convertible into or exchangeable or exercisable for shares of our common stock or derivatives of our common stock owned by these persons prior to this offering or common stock issuable upon exercise of options or warrants held by these persons. During the 90-day restricted period, our officers and directors may (a) transfer shares of our common stock acquired in open market transactions after the completion of this offering, (b) transfer shares of our common stock or our other securities as a bona fide gift, (c) transfer shares of our common stock or our other securities (1) by will or intestacy to an officer or director's immediate family or (2) to a trust, the beneficiaries of which are officers or directors and a member or members of such officer's or director's immediate family, (d) distribute shares of our common stock or our other securities to limited partners, members or stockholders of our officers or directors, (e) establish or amend a trading plan pursuant to Rule 10b5-1 under the Exchange Act for the transfer of shares of our common stock, *provided* that such plan does not provide for the transfer of shares of our common stock during the 90-day restricted period, (f) transfer shares of our common stock or any securities convertible into or exercisable or exchangeable for our common stock to us upon a vesting event of our securities or upon the exercise of options or

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warrants to purchase our securities, in each case on a cashless or net exercise basis or to cover tax withholding obligations of an officer or director in connection with such vesting or exercise; or (g) exercise any right with respect to, or the taking of any other action in preparation for, a registration by us of shares of our common stock, *provided* that no transfer of the security holder's common stock registered pursuant to the exercise of such rights under this clause (g) shall occur during the 90-day restricted period; *provided* (i) that in the case of a transfer pursuant to clause (b), (c)(2) or (d) above, it shall be a condition to such transfer that the transferee execute an agreement stating that the transferee is receiving and holding the securities subject to the provisions of this agreement, and (ii) that in the case of a transfer pursuant to clause (b), (c) or (d) above, it shall be a condition to such transfer that no filing under Section 16(a) of the Exchange Act, reporting a reduction in beneficial ownership of shares of our common stock, shall be required or shall be voluntarily made during the 90-day restricted period. Notwithstanding the foregoing, if (i) during the last 17 days of the 90-day restricted period, we issue an earnings release or material news or a material event relating to our company occurs; or (ii) prior to the expiration of the 90-day restricted period, we announce that we will release earnings results during the 16-day period beginning on the last day of the 90-day restricted period, the restrictions described above shall continue to apply until the expiration of the 18-day period beginning on the issuance of the earnings release or the occurrence of the material news or material event.

The shares are listed on the NASDAQ Global Market under the symbol **FLDM**.

The following table shows the underwriting discounts and commissions that we are to pay to the underwriters in connection with this offering. These amounts are shown assuming both no exercise and full exercise of the underwriters' over-allotment option. In no event will the total amount of compensation paid to the underwriters and any dealers or agents exceed 8% of the gross proceeds of the offering.

	Paid by Fluidigm Corporation	
	No Exercise	Full Exercise
Per Share.	\$	\$
Total	\$	\$

We estimate that our portion of the total expenses of this offering will be \$.

In connection with the offering, the underwriters may purchase and sell shares in the open market. Purchases and sales in the open market may include short sales, purchases to cover short positions, which may include purchases pursuant to the over-allotment option, and stabilizing purchases.

Short sales involve secondary market sales by the underwriters of a greater number of shares than they are required to purchase in the offering.

Covered short sales are sales of shares in an amount up to the number of shares represented by the underwriters over-allotment option.

Naked short sales are sales of shares in an amount in excess of the number of shares represented by the underwriters over-allotment option.

Covering transactions involve purchases of shares either pursuant to the over-allotment option or in the open market after the distribution has been completed in order to cover short positions.

To close a naked short position, the underwriters must purchase shares in the open market after the distribution has been completed. A naked short position is more likely to be created if the underwriters are concerned that there may be downward pressure on the price of the shares in the open market after pricing that could adversely affect investors who purchase in the offering.

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To close a covered short position, the underwriters must purchase shares in the open market after the distribution has been completed or must exercise the over-allotment option. In determining the source of shares to close 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 the over-allotment option.

Stabilizing transactions involve bids to purchase shares so long as the stabilizing bids do not exceed a specified maximum. Purchases to cover short positions and stabilizing purchases, as well as other purchases by the underwriters for their own accounts, may have the effect of preventing or retarding a decline in the market price of the shares. They may also cause the price of the shares to be higher than the price that would otherwise exist in the open market in the absence of these transactions. The underwriters may conduct these transactions on the NASDAQ Global Market, in the over-the-counter market or otherwise. If the underwriters commence any of these transactions, they may discontinue them at any time.

In addition, in connection with this offering, some of the underwriters (and selling group members) may engage in passive market making transactions in the shares on the NASDAQ Global Market, prior to the pricing and completion of the offering. Passive market making consists of displaying bids on the NASDAQ Global Market no higher than the bid prices of independent market makers and making purchases at prices no higher than those independent bids and effected in response to order flow. 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 shares during a specified period and must be discontinued when that limit is reached. Passive market making may cause the price of the shares to be higher than the price that otherwise would exist in the open market in the absence of those transactions. If the underwriters commence passive market making transactions, they may discontinue them at any time.

The underwriters may, from time to time, engage in transactions with and perform services for us in the ordinary course of their business for which they may receive customary fees and reimbursement of expenses.

We have agreed to indemnify the underwriters against certain liabilities, including liabilities under the Securities Act, or to contribute to payments the underwriters may be required to make because of any of those liabilities.

Notice to Prospective Investors in the European Economic Area

In relation to each member state of the European Economic Area that has implemented the Prospectus Directive (each, a Relevant Member State), each underwriter has represented and agreed that with effect from and including the date on which the Prospectus Directive is implemented in that Relevant Member State (the Relevant Implementation Date) it has not made an offer of shares to the public in that Relevant Member State prior to the publication of a prospectus in relation to the shares which has been approved by the competent authority in that Relevant Member State or, where appropriate, approved in another Relevant Member State and notified to the competent authority in that Relevant Member State, all in accordance with the Prospectus Directive, except that it may, with effect from and including the Relevant Implementation Date, make an offer of shares to the public in that Relevant Member State at any time:

to any legal entity that is authorized or regulated to operate in the financial markets or, if not so authorized or regulated, whose corporate purpose is solely to invest in securities;

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to any legal entity that has two or more of (1) an average of at least 250 employees during the last financial year; (2) a total balance sheet of more than 43,000,000 and (3) an annual net turnover of more than 50,000,000, as shown in its last annual or consolidated accounts;

to fewer than 100 natural or legal persons (other than qualified investors as defined below) subject to obtaining the prior consent of the representatives for any such offer; or

in any other circumstances that do not require the publication by us of a prospectus pursuant to Article 3 of the Prospectus Directive.

For purposes of this provision, the expression an offer to the public in relation to any shares 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 the shares to be offered so as to enable an investor to decide to purchase or subscribe the shares, as the same may be varied in that Relevant Member State by any measure implementing the Prospectus Directive in that Relevant Member State, and the expression Prospectus Directive means Directive 2003/71/EC and includes any relevant implementing measure in each Relevant Member State.

Notice to Prospective Investors in the 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 FSMA) received by it in connection with the issue or sale of the shares in circumstances in which Section 21(1) of the FSMA would not, if we were not an authorized person, apply to us; and

(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 in, from or otherwise involving the United Kingdom.

Notice to Prospective Investors in Switzerland

The shares of our common stock may not be publicly offered in Switzerland and will not be listed on the SIX Swiss Exchange, or 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 our 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, the Issuer, the shares of our 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 shares of our common stock will not be supervised by, the Swiss Financial Market Supervisory Authority FINMA and the offer of shares of our common stock has not been and will not be authorized under the Swiss Federal Act on Collective Investment Schemes, or CISA. The investor protection afforded to acquirers of interests in collective investment schemes under the CISA does not extend to acquirers of shares of our common stock.

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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. Latham & Watkins LLP, Costa Mesa, California, is acting as counsel to the underwriters. Members of Wilson Sonsini Goodrich & Rosati, Professional Corporation, and investment funds associated with that firm hold 19,667 shares of our common stock.

EXPERTS

Ernst & Young LLP, independent registered public accounting firm, has audited our consolidated financial statements and schedule included in our Annual Report on Form 10-K for the year ended December 31, 2011, as set forth in their report, which is incorporated by reference in this prospectus and elsewhere in the registration statement. Our financial statements and schedule are incorporated by reference in reliance on Ernst & Young LLP's report, given on their authority as experts in accounting and auditing.

WHERE YOU CAN FIND ADDITIONAL INFORMATION

We 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, 2011 filed with the SEC on March 26, 2012, including portions of our definitive Proxy Statement on Schedule 14A, as filed with the SEC on March 26, 2012 in connection with our 2012 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, 2012 filed with the SEC on May 15, 2012;

our Quarterly Report on Form 10-Q for the quarter ended June 30, 2012 filed with the SEC on August 14, 2012;

our Current Reports on Form 8-K filed with the SEC on February 15, March 14, May 7 and May 21, 2012; and.

the description of our common stock contained in our registration statement on Form 8-A (File No. 001-334180) filed with the SEC on February 7, 2011, 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.

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

\$100,000,000

Fluidigm Corporation may offer, from time to time,

common stock

preferred stock

warrants

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 up to an aggregate amount of \$100,000,000 of 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.

In addition, selling stockholders to be named in a prospectus supplement may also offer and sell, from time to time, up to 1,000,000 shares of our common stock. To the extent that any selling stockholder resells any securities, the selling stockholder may be required to provide you with this prospectus and a prospectus supplement identifying and containing specific information about the selling stockholder and the terms of the securities being offered. We will not receive any proceeds from the sale of our common stock by selling stockholders.

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 May 4, 2012, the last reported sale price on the NASDAQ Global Market was \$15.09 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 6 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

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prospectus supplement. In addition, the underwriters may overallot a portion of the securities.

The date of this prospectus is May 10, 2012.

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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 aggregate amount of \$100,000,000. In addition, under this shelf process, the selling stockholders to be named in a supplement to this prospectus may, from time to time, offer or sell up to 1,000,000 shares of our common stock.

This prospectus provides you with a general description of the securities we and the selling stockholders may offer. Each time we or the selling stockholders 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. Neither we nor the selling stockholders have 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, 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 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 herein 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 develop, manufacture and market microfluidic systems for growth markets, such as single-cell genomics, applied genotyping and sample preparation for targeted resequencing, in the life science and agricultural biotechnology, or Ag-Bio, industries. Our proprietary microfluidic systems consist of instruments and consumables, including chips, assays and other reagents. These systems are designed to significantly simplify experimental workflow, increase throughput and reduce costs, while providing the excellent data quality demanded by customers. In addition, our proprietary technology enables genetic analysis that in many instances was previously impractical. We actively market three microfluidic systems, including eight different commercial chips for nucleic acid research and three families of assays, to leading academic institutions, diagnostic laboratories, and pharmaceutical, biotechnology and Ag-Bio companies. We have sold over 500 systems to customers in over 25 countries worldwide.

To achieve and exploit advances in life science research, Ag-Bio and molecular diagnostics, laboratories need robust systems that deliver high throughput and simpler workflows at decreased costs. Our microfluidic systems are designed to overcome many of the limitations of conventional laboratory systems by integrating a vast number of fluidic components on a single microfabricated chip. Our technology enables our customers to perform and measure thousands of sophisticated biochemical reactions on samples smaller than the content of a single cell, while utilizing minute volumes of reagents and samples. Similarly, for next generation DNA sequencing, our systems enable rapid preparation of multiple samples in parallel at low cost.

We have successfully commercialized our BioMark, BioMark HD and EP1 systems for genetic analysis and our Access Array system for next generation DNA sequencing sample preparation. Researchers and clinicians have successfully employed our products to help achieve breakthroughs in a variety of fields, including single-cell genomics, genetic variation, cellular function and applied genetics. These include using our microfluidic systems to help detect life-threatening mutations in patients' 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 believe our Access Array system resolves a critical workflow bottleneck that exists in all commercial next generation DNA sequencing platforms and provides fast, simple, low-cost preparation of samples for targeted resequencing. We expect that the versatility of our microfluidic technology will enable us to develop additional applications across a wide variety of markets.

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.

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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.

The Securities We May Offer

We may offer or sell up to \$100,000,000 of 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. In addition, the selling stockholders to be named in a supplement to this prospectus may offer or sell, from time to time, up to 1,000,000 shares of our common stock. Each time we or the selling stockholders 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 or the selling stockholders 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 or the selling stockholders, as well as any agents acting on our or their 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. The selling stockholders may offer shares of our common stock, par value \$ 0.001 per share, to the extent such shares were issued and outstanding prior to the original date of filing of the registration statement. 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 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.

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 senior debt securities will have the same rank as all of our other unsubordinated debt. The subordinated debt securities generally will be entitled to payment only after payment of our senior debt. Senior debt generally includes all debt for money borrowed by us,

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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](#).

General Indenture Provisions that Apply to Senior and Subordinated Debt Securities

Each indenture allows debt to be issued in series with terms particular to each series.

Neither of the indentures limit the amount of debt that we may issue or generally provide holders any protection should there be a highly leveraged transaction involving our company.

The indentures allow us to merge or to consolidate with another U.S. business entity or convey, transfer or lease our properties and assets substantially as an entirety to another U.S. business entity, as long as certain conditions are met. If these events occur, the other business entity will be required to assume our responsibilities on the debt securities, and we will be released from all liabilities and obligations, except in the case of a lease.

The indentures provide that we and the trustee may generally amend the indentures with the consent of holders of a majority of the total principal amount of the debt outstanding in any series to change certain of our obligations or your rights concerning the debt. However, to change the payment of principal or interest, to adversely affect the right to convert, or to change certain matters, every holder in that series must consent.

We may discharge the indentures and defease restrictive covenants by depositing sufficient funds with the trustee to pay the obligations when due, as long as certain conditions are met. The trustee would pay all amounts due to you on the debt from the deposited funds.

Events of Default

Each of the following is an event of default under the indentures:

principal not paid when due;

any sinking fund payment not made when due;

failure to pay interest for 30 days; and

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covenants not performed for 90 days after notice.

A prospectus supplement may describe deletions of, or changes or additions to, the events of default.

Remedies

Upon an event of default, other than a bankruptcy, insolvency or reorganization, the trustee or holders of 25% of the principal amount outstanding in a series may declare the outstanding principal and premium, if any, plus accrued and unpaid interest, if any, immediately payable. However, the holders of a majority in principal amount may, under certain circumstances, rescind this action. If a bankruptcy, insolvency or

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reorganization event of default were to occur, the principal amount and premium, if any, or all debt securities of that series, together with the accrued and unpaid interest, if any, will automatically become due and payable.

Indenture Provisions that Apply Only to the Subordinated Debt Securities

The subordinated debt securities indenture provides that the subordinated debt securities will be subordinated to all senior debt as defined in the subordinated indenture.

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 **Item 1A Risk Factors**, in our Annual Report on Form 10-K for the year ended December 31, 2011, all of 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 projects, should, 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 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**, and in **Item 1-A Risk Factors** of our most recent report on Form 10-K or 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. These sources do not guarantee the accuracy or completeness of the information. Although we believe that the industry sources are reliable, we have not independently verified the information. The market data include projections that are based on a number of other projections. While we believe these assumptions to be reasonable and sound as of the date of this prospectus, actual results may differ from the projections.

Table of Contents**RATIO OF EARNINGS TO COMBINED FIXED CHARGES AND PREFERENCE DIVIDENDS**

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

	Fiscal Year Ended				
	December 29, 2007	December 27, 2008	December 31, 2009	December 31, 2010	December 31, 2011
Ratio of Earnings to Combined Fixed Charges and Preference Dividends ⁽¹⁾					

⁽¹⁾ The ratio of earnings to combined fixed charges and preference dividends represents the number of times that fixed charges and preference dividends are covered by earnings. Earnings consist of income or loss from continuing operations before income taxes and fixed charges, excluding preference dividends. Fixed charges consist of interest expensed and capitalized under capital leases, estimated interest expense within rental expense, and preference dividends. We recognized a deemed dividend to preferred stockholders of \$9.9 million in 2011, which was the only year such a dividend was incurred. In the fiscal years ended December 29, 2007, December 27, 2008, and December 31, 2009, 2010 and 2011, earnings were insufficient to cover fixed charges by \$25.3 million, \$29.6 million, \$19.2 million, \$16.8 million, and \$32.2 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.

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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.

We will not receive any proceeds from the sale of shares of our common stock by any selling stockholder.

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 are subject to several covenants under our 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 and bylaws. For more detailed definition, please refer to our certificate of incorporation and bylaws, 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 February 29, 2012, we had outstanding 20,421,444 shares of common stock held of record by 173 stockholders. In addition, as of February 29, 2012, 2,790,900 shares of our common stock were subject to outstanding options. As of April 3, 2012, 5,120 shares of our common stock were subject to one outstanding warrant.

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. Though we currently have no plans to issue any shares of preferred stock, under our certificate of incorporation, 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. Though 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, 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.

Warrants

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We have one outstanding warrant to purchase 5,120 shares of our common stock at an exercise price of \$15.62 per share. The warrant will expire on December 16, 2012. In the event of a distribution of dividends, a stock split, a reorganization, a reclassification, a consolidation, or a similar event, the warrant provides for adjustment of the exercise price and the number of shares issuable upon exercise.

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Potential Issuance of Common Stock

On March 7, 2003, we entered into a Master Closing Agreement with Oculus Pharmaceuticals, Inc. and The UAB Research Foundation, or UAB, related to certain intellectual property and technology rights licensed by us from UAB. Pursuant to the agreement, we are obligated to issue UAB shares of our common stock with a value equal to approximately \$1,500,000 upon the achievement of a certain milestone and based upon the fair market value of our common stock at the time the milestone is achieved. We currently do not anticipate achieving this milestone in the foreseeable future and do not anticipate issuing these shares. The potential issuance discussed above is not reflected in the number of shares of common stock outstanding in this prospectus.

Registration Rights

As of February 29, 2012, the holders of an aggregate of 7,272,855 shares of our common stock are entitled to the following rights with respect to the registration of such shares for public resale under the Securities Act, pursuant to an investor rights agreement by and among us and certain of our stockholders. We refer to these shares collectively as registrable securities.

The registration of shares of common stock as a result of the following rights being exercised would enable the holders to trade these shares without restriction under the Securities Act when the applicable registration statement is declared effective. Ordinarily, we will be required to pay all expenses, other than underwriting discounts and commissions, related to any registration effected pursuant to the exercise of these registration rights.

The registration rights terminate upon the earlier of five years after completion of our initial public offering, or, with respect to the registration rights of an individual holder, when the holder of one percent or less of our outstanding common stock can sell all of such holder's registrable securities in any three-month period without registration, in compliance with Rule 144 of the Securities Act or another similar exemption.

Demand Registration Rights

If, at any time after our initial public offering, the holders of at least a majority of the registrable securities request in writing that we effect a registration with respect to at least 50% of their shares that has a reasonably anticipated aggregate price to the public, net of underwriting discounts and commissions in excess of \$20,000,000, we may be required to register their shares. At most, we are obligated to effect two registrations for the holders of registrable securities in response to these demand registration rights. Depending on certain conditions, however, we may defer such registration for up to 90 days. If the holders requesting registration intend to distribute their shares by means of an underwriting, the managing underwriter of such offering will have the right to limit the number of shares to be underwritten for reasons related to the marketing of the shares.

Piggyback Registration Rights

If at any time we propose to register any shares of our common stock under the Securities Act, subject to certain exceptions, the holders of registrable securities will be entitled to notice of the registration and to include their shares of registrable securities in the registration. If our proposed registration involves an underwriting, the managing underwriter of such offering will have the right to limit the number of shares to be underwritten for reasons related to the marketing of the shares.

Form S-3 Registration Rights

If at any time that we are entitled under the Securities Act to register our shares on Form S-3 a holder of registrable securities requests in writing that we register registrable securities for public resale on Form S-3 and the reasonably anticipated price to the public of the offering exceeds \$2,000,000 (net of

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underwriting discounts and commissions), we will be required to use our best efforts to effect such registration; provided, however, that if such registration would be seriously detrimental to us or our stockholders, we may defer the registration for up to 90 days.

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 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.

Anti Takeover Effects of Delaware Law and Our Certificate of Incorporation and Bylaws

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;

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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;

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.

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) 575-2900.

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. 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. 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. 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. In this description of the debt securities, the words "Fluidigm Corporation," "we," "us" or "our" refer only to Fluidigm Corporation and not to any of our subsidiaries, unless we otherwise expressly state or the context otherwise requires.

The following description sets forth selected general terms and provisions of the applicable indenture 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. 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.

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;

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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;

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;

any subordination provisions applicable to the subordinated debt securities if different from those described below under Subordinated debt securities ;

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

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 deletions of, or changes or additions to, the events of default, acceleration provisions or covenants; and

any other specific terms of such debt securities.

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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 being redeemed in part.

Initially, we will appoint the trustee as the 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 depository, or its nominee, that we will identify in a prospectus supplement;

be deposited with the depository 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 depository or any nominee unless:

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

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 depository, or its nominee, is the registered owner of a global security, the depository 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

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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 depository, 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 depository. The depository policies and procedures may change from time to time. Neither any trustee nor we will have any responsibility or liability for the depository'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 otherwise indicated in a prospectus supplement with respect to a particular series of debt securities, we may not consolidate with or merge into any other person, 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 entity, unless:

the successor entity, if any, is a corporation, limited liability company, partnership, trust or other business entity existing under the laws of the United States, any State within the United States or the District of Columbia;

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 are met.

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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 including 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, if any, thereon, to be due and payable immediately.

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, if any, thereon, 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.

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.

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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 a majority 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 by 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.

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:

- providing for our successor to assume the covenants under the indenture;
- adding covenants or events of default;
- making certain changes to facilitate the issuance of the securities;
- securing the securities;
- providing for a successor trustee or additional trustees;
- curing any ambiguities or inconsistencies;
- permitting or facilitating the defeasance and discharge of the securities; and
- other changes specified in the indenture.

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 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;

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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;

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 of 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.

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

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;

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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; or

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any depository receipt issued by a bank as custodian with respect to any obligation specified in the first two bullet points and held by such bank for the account of the holder of such deposit any receipt, or with respect to any such obligation which is so specified and held.

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.

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 is 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.

The accompanying prospectus supplement will specify the trustee for the particular series of debt securities to be issued under the indentures.

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.

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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 also 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

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

We may and shall 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 start 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 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.

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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 senior debt 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. If any payment made to any holder of any designated senior debt or its representative with respect to such designated senior debt is rescinded or must otherwise be returned by such holder or representative upon our insolvency, bankruptcy or reorganization or otherwise, our reinstated indebtedness arising as a result of such rescission or return shall constitute designated senior debt effective as of the date of such rescission or return.

Indebtedness means all obligations, 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 including the following:

all of our obligations for money borrowed (including, but not limited to, any indebtedness secured by a security interest, mortgage or other lien on the assets of that person that is (1) given to secure all or part of the purchase price of property subject thereto, whether given to the vendor of such property or to another, or (2) existing on property at the time of acquisition thereof);

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

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

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

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

all obligations of the type referred to in the above clauses of another person and all dividends of another person, the payment of which, in either case, we have assumed or guaranteed, or 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.

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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, on, and all fees and other amounts

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payable in connection with, our indebtedness, whether outstanding on the date of the indenture or thereafter created, incurred, assumed, guaranteed or in effect guaranteed by us including all deferrals, renewals, extensions or refundings of, or amendments, modifications or supplements to, the foregoing, unless in the case of any particular indebtedness the instrument creating or evidencing the same or the assumption or guarantee thereof expressly provides that such Indebtedness shall not be senior in right of payment to the securities or expressly provides that such indebtedness is *pari passu* or junior to the securities. In addition, senior debt shall not include any of our indebtedness to any of our subsidiaries. If any payment made to any holder of any senior debt or its representative with respect to such senior debt is rescinded or must otherwise be returned by such holder or representative upon our insolvency, bankruptcy or reorganization or otherwise, our reinstated indebtedness arising as a result of such rescission or return shall constitute senior debt effective as of the date of such rescission or return.

Subsidiary means a person of which more than 50% of the outstanding voting stock having the power to elect a majority of the board of directors of such person (in the case of a corporation) is, or of which more than 50% of the equity interests (in the case of a person which is not a corporation) are, at the time owned, directly or indirectly, by us or by one or more other subsidiaries, or by a combination of us and one or more other subsidiaries. For the purposes of this definition, *voting stock* means our 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 Corporation

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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SELLING STOCKHOLDERS

This prospectus also relates to the possible resale by certain of our stockholders, who we refer to in this prospectus as the selling stockholders, of up to 1,000,000 shares of our common stock that were issued and outstanding prior to the original date of filing of the registration statement of which this prospectus forms a part, including shares that may be owned by affiliates. The selling stockholders originally acquired the shares of our common stock included in this prospectus through (1) sales to the founders through an exemption from registration under Section 4(2) of the Securities Act, for transactions by an issuer not involving a public offering, (2) several private placements of our convertible preferred stock prior to our initial public offering, all of which shares were converted into shares of our common stock in connection with our initial public offering and (3) issuances of shares of common stock and options to acquire common stock issued to officers, directors and employees pursuant to our 1999 Stock Option Plan, our 2009 Equity Incentive Plan and our 2011 Equity Incentive Plan, each as amended.

Information about the selling stockholders, where applicable, including their identities, the amount of shares of common stock owned by each selling stockholder prior to the offering, the number of shares of our common stock to be offered by each selling stockholder and the amount of common stock to be owned by each selling stockholder after completion of the offering, will be set forth in an applicable prospectus supplement, documents incorporated by reference or in a free writing prospectus we file with the SEC. The applicable prospectus supplement will also disclose whether any of the selling stockholders has held any position or office with, has been employed by or otherwise has had a material relationship with us during the three years prior to the date of the prospectus supplement.

The selling stockholders shall not sell any shares of our common stock pursuant to this prospectus until we have identified such selling stockholders and the shares being offered for resale by such selling stockholders in a subsequent prospectus supplement. However, the selling stockholders may sell or transfer all or a portion of their shares of our common stock pursuant to any available exemption from the registration requirements of the Securities Act.

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PLAN OF DISTRIBUTION

We or the selling stockholders may sell the securities offered through this prospectus (i) to or through underwriters or dealers, (ii) directly to purchasers, including our affiliates, (iii) through agents, or (iv) 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 public offering price;

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

any commissions paid to agents.

We may engage in at-the-market offerings into an existing trading market in accordance with Rule 415(a)(4). Any at-the-market offering will be through an underwriter or underwriters acting as principal or agent for us.

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 or the selling stockholders. 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

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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.

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If dealers are used in the sale of securities offered through this prospectus, we or the selling stockholders 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.

Direct Sales and Sales through Agents

We or the selling stockholders 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 or the selling stockholders. 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 or the selling stockholders 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 or the selling stockholders 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.

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 or the selling stockholders 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.

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

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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 or the selling stockholders may also make sales through the Internet or through other electronic means. Since we or the selling stockholders 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 or the selling stockholders 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 or the selling stockholders, 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

Ernst & Young LLP, independent registered public accounting firm, has audited our consolidated financial statements and schedule included in our Annual Report on Form 10-K for the year ended December 31, 2011, as set forth in their report, which is incorporated by reference in this prospectus and elsewhere in the registration statement. Our financial statements and schedule are incorporated by reference in reliance on Ernst & Young LLP's report, 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 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.

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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, 2011 filed with the SEC on March 26, 2012;

our Current Reports on Form 8-K filed with the SEC on February 15 and March 14, 2012; and

the description of our common stock set forth under the caption "Description of Capital Stock" in the prospectus that constitutes part of our Registration Statement on Form S-1 (File No. 333-170965), initially filed with the SEC on December 3, 2010, including any amendments or reports filed for the purpose of updating this 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.

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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Shares

Common Stock

PROSPECTUS SUPPLEMENT

Joint Book - Running Managers

Piper Jaffray

Cowen and Company

August , 2012