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

FORM 10-Q

(Mark One)

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

For the quarterly period ended June 30, 2017

or

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

For the transition period from to

Commission file number: 001-34180

FLUIDIGM CORPORATION

(Exact name of registrant as specified in its charter)

Delaware	**77-0513190**
(State or other jurisdiction of incorporation or organization)	**(I.R.S. Employer Identification Number)**

7000 Shoreline Court, Suite 100
South San Francisco, California 94080
(Address of principal executive offices) (Zip Code)

(650) 266-6000
(Registrant's telephone number, including area code)

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes ý No ¨
Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes ý No ¨
Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer," "accelerated

filer," "smaller reporting company," and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer	¨	Accelerated filer	ý
Non-accelerated filer	¨ (Do not check if a smaller reporting company)	Smaller reporting company	¨
Emerging Growth company	¨		

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. o

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

As of July 28, 2017, there were 29,414,235 shares of the Registrant's common stock, $0.001 par value per share, outstanding.

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PART I. FINANCIAL INFORMATION
Item 1. Financial Statements

FLUIDIGM CORPORATION
CONDENSED CONSOLIDATED BALANCE SHEETS
(In thousands, except per share amounts)
(Unaudited)

	June 30, 2017	December 31, 2016 (Note 2)
ASSETS		
Current assets:		
Cash and cash equivalents	$39,597	$35,045
Short-term investments	2,434	24,385
Accounts receivable (net of allowances of $394 at June 30, 2017 and $502 at December 31, 2016)	13,659	14,610
Inventories	18,765	20,114
Prepaid expenses and other current assets	4,670	2,517
Total current assets	79,125	96,671
Property and equipment, net	13,966	16,525
Other non-current assets	7,310	9,291
Developed technology, net	74,200	79,800
Goodwill	104,108	104,108
Total assets	$278,709	$306,395
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Accounts payable	$3,858	$3,967
Accrued compensation and related benefits	7,871	3,996
Other accrued liabilities	13,498	12,374
Deferred revenue, current	9,097	9,163
Total current liabilities	34,324	29,500
Convertible notes, net	195,094	194,951
Deferred tax liability, net	16,729	21,140
Deferred revenue, non-current	4,012	4,315
Other non-current liabilities	4,613	3,256
Total liabilities	254,772	253,162
Commitments and contingencies (see Note 7)		
Stockholders' equity:		
Preferred stock, $0.001 par value, 10,000 shares authorized, no shares issued and outstanding at June 30, 2017 and December 31, 2016	—	—
Common stock, $0.001 par value, 200,000 shares authorized at June 30, 2017 and December 31, 2016; 29,415 and 29,208 shares issued and outstanding as of June 30, 2017 and December 31, 2016, respectively	29	29
Additional paid-in capital	498,351	493,441
Accumulated other comprehensive loss	(648)	(760)
Accumulated deficit	(473,795)	(439,477)
Total stockholders' equity	23,937	53,233
Total liabilities and stockholders' equity	$278,709	$306,395

See accompanying notes.

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FLUIDIGM CORPORATION
CONDENSED CONSOLIDATED STATEMENTS OF OPERATIONS
(In thousands, except per share amounts)
(Unaudited)

	Three Months Ended June 30,		Six Months Ended June 30,	
	2017	2016	2017	2016
Revenue:				
Product revenue	$19,500	$24,733	$40,807	$50,103
Service revenue	4,319	3,389	8,486	6,933
License revenue	93	46	152	135
Total revenue	23,912	28,168	49,445	57,171
Costs and expenses:				
Cost of product revenue	10,794	11,239	21,644	22,026
Cost of service revenue	1,169	1,248	2,288	2,446
Research and development	7,461	9,978	15,986	20,390
Selling, general and administrative	20,975	23,845	43,551	49,320
Total costs and expenses	40,399	46,310	83,469	94,182
Loss from operations	(16,487)	(18,142)	(34,024)	(37,011)
Interest expense	(1,456)	(1,453)	(2,911)	(2,906)
Other income (expense), net	183	(44)	193	(368)
Loss before income taxes	(17,760)	(19,639)	(36,742)	(40,285)
Benefit from income taxes	827	1,022	2,608	1,784
Net loss	$(16,933)	$(18,617)	$(34,134)	$(38,501)
Net loss per share, basic and diluted	$(0.58)	$(0.64)	$(1.17)	$(1.33)
Shares used in computing net loss per share, basic and diluted	29,344	28,944	29,292	28,904

See accompanying notes.

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FLUIDIGM CORPORATION
CONDENSED CONSOLIDATED STATEMENTS OF COMPREHENSIVE LOSS
(In thousands)
(Unaudited)

	Three Months Ended June 30,		Six Months Ended June 30,	
	2017	2016	2017	2016
Net loss	$(16,933)	$(18,617)	$(34,134)	$(38,501)
Other comprehensive income, net of tax:				
Foreign currency translation adjustment	76	4	110	182
Net change in unrealized gain on investments	1	23	2	104
Other comprehensive income, net of tax	77	27	112	286
Comprehensive loss	$(16,856)	$(18,590)	$(34,022)	$(38,215)

See accompanying notes.

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FLUIDIGM CORPORATION
CONDENSED CONSOLIDATED STATEMENTS OF CASH FLOWS
(In thousands)
(Unaudited)

	Six Months Ended June 30,	
	2017	**2016**
Operating activities		
Net loss	$(34,134)	$(38,501)
Adjustments to reconcile net loss to net cash used in operating activities:		
Depreciation and amortization	4,088	3,245
Stock-based compensation expense	4,775	7,447
Amortization of developed technology	5,600	5,600
Other non-cash items	(417)	554
Changes in assets and liabilities:		
Accounts receivable, net	921	6,011
Inventories	1,122	(860)
Prepaid expenses and other current assets	(2,169)	(171)
Other non-current assets	1,388	(133)
Accounts payable	248	(980)
Deferred revenue	(416)	416
Other current liabilities	4,879	2,824
Other non-current liabilities	(2,663)	(598)
Net cash used in operating activities	(16,778)	(15,146)
Investing activities		
Purchases of investments	(1,452)	(34,559)
Proceeds from sales and maturities of investments	23,375	56,387
Proceeds from sale of investment in Verinata	—	2,330
Purchases of property and equipment	(834)	(2,662)
Net cash provided by investing activities	21,089	21,496
Financing activities		
Proceeds from exercise of stock options, net of taxes paid	(46)	134
Net cash (used in) provided by financing activities	(46)	134
Effect of foreign exchange rate fluctuations on cash and cash equivalents	287	297
Net increase in cash and cash equivalents	4,552	6,781
Cash and cash equivalents at beginning of period	35,045	29,117
Cash and cash equivalents at end of period	$39,597	$35,898

See accompanying notes.

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FLUIDIGM CORPORATION
NOTES TO CONDENSED CONSOLIDATED FINANCIAL STATEMENTS
(Unaudited)

1. Description of Business

Fluidigm Corporation (we, our, or us) was incorporated in the State of California in May 1999 to commercialize microfluidic technology initially developed at the California Institute of Technology. In July 2007, we were reincorporated in Delaware. Our headquarters are located in South San Francisco, California.

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

2. Summary of Significant Accounting Policies

Basis of Presentation

The accompanying unaudited condensed consolidated financial statements have been prepared in accordance with U.S. generally accepted accounting principles (U.S. GAAP) and following the requirements of the Securities and Exchange Commission (SEC) for interim reporting. As permitted under those rules, certain footnotes or other financial information that are normally required by U.S. GAAP have been condensed or omitted, and accordingly the balance sheet as of December 31, 2016 has been derived from audited consolidated financial statements at that date but does not include all of the information required by U.S. GAAP for complete financial statements. These financial statements have been prepared on the same basis as our annual financial statements and, in the opinion of management, reflect all adjustments (consisting only of normal recurring adjustments) that are necessary for a fair statement of our financial information. The results of operations for the three and six months ended June 30, 2017 are not necessarily indicative of the results to be expected for the year ending December 31, 2017 or for any other interim period or for any other future year. All intercompany accounts and transactions have been eliminated upon consolidation.

The preparation of these condensed consolidated financial statements requires us to make estimates and judgments that affect the reported amounts of assets, liabilities, revenue, expenses, and related disclosures. On an ongoing basis, we evaluate our estimates, including critical accounting policies or estimates related to revenue recognition, income tax provisions, stock-based compensation, inventory valuation, allowances for doubtful accounts, and useful lives of long-lived assets. We base our estimates on historical experience and on various relevant assumptions that we believe to be reasonable under the circumstances, the results of which form the basis for making judgments about the carrying values of assets and liabilities that are not readily apparent from other sources. Actual results may differ significantly from these estimates.

The accompanying condensed consolidated financial statements and related financial information should be read in conjunction with the audited consolidated financial statements and the accompanying notes in Item 8 of Part II, "Financial Statements and Supplementary Data," for the year ended December 31, 2016 included in our Annual Report on Form 10-K.

Net Loss per Share

Our basic and diluted net loss per share is calculated by dividing net loss by the weighted-average number of shares of common stock outstanding for the period. Restricted stock units and options to purchase common stock are considered to be potentially dilutive common shares but have been excluded from the calculation of diluted net loss per share as their effect is anti-dilutive for all periods presented.

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FLUIDIGM CORPORATION
NOTES TO CONDENSED CONSOLIDATED FINANCIAL STATEMENTS—(Continued)
(Unaudited)

The following potentially dilutive common shares were excluded from the computation of diluted net loss per share for the three and six months ended June 30, 2017 and 2016 because they would have been anti-dilutive (in thousands):

	Three Months Ended June 30,		Six Months Ended June 30,	
	2017	2016	2017	2016
Stock options, restricted stock units and performance awards	4,528	4,835	4,528	4,835
Convertible notes	3,598	3,598	3,598	3,598
Total	8,126	8,433	8,126	8,433

Accumulated Other Comprehensive Loss

The components of accumulated other comprehensive loss, net of tax, for the three and six months ended June 30, 2017 are summarized as follows (in thousands):

	Foreign Currency Translation Adjustment	Net Unrealized Gain (Loss) on Securities	Accumulated Other Comprehensive Loss
Balance at December 31, 2016	$ (758)	$ (2)	$ (760)
Other comprehensive income	34	1	35
Balance at March 31, 2017	(724)	(1)	(725)
Other comprehensive income	76	1	77
Balance at June 30, 2017	$ (648)	$ —	$ (648)

De minimus amounts of unrealized gains and losses have been reclassified into the condensed consolidated statement of operations for the three and six months ended June 30, 2017. The tax effect of each component of other comprehensive income was immaterial for the three and six months ended June 30, 2017.

Investment, at cost

In February 2013, Illumina, Inc. acquired Verinata Health, Inc. (Verinata), a privately-held company, for $350 million in cash and up to an additional $100 million in milestone payments through December 2015. In March 2013, we received cash proceeds of $3.1 million in exchange for our ownership interest in Verinata resulting in a gain of $1.8 million. During the third quarter of 2014, we received cash proceeds of $0.3 million from the escrow account related to the acquisition. We recorded these amounts as "Gain from sale of investment in Verinata" in the consolidated statements of operations for the year ended December 31, 2014. The final milestones related to the sale of Verinata to Illumina were met in December 2015 and, accordingly, we recorded our share of these milestone payment obligations in the amount of $2.3 million in Gain from sale of investment in Verinata in the consolidated statement of operations for the year ended December 31, 2015. In January 2016, we received the payment of $2.3 million and it was recorded in net cash provided by investing activities in the condensed consolidated statement of cash flows.

Long-lived Assets, including Goodwill

Goodwill and intangible assets with indefinite lives are not subject to amortization, but are tested for impairment on an annual basis during the fourth quarter or whenever events or changes in circumstances indicate the carrying amount of

these assets may not be recoverable. We first conduct an assessment of qualitative factors to determine whether it is more likely than not that the fair value of our reporting unit is less than its carrying amount. If we determine that it is more likely than not that the fair value of our reporting unit is less than its carrying amount, we then conduct a two-step test for impairment of goodwill. In the first step, we compare the fair value of our reporting unit to its carrying value. If the fair value of our reporting unit exceeds its carrying value, goodwill is not considered impaired and no further analysis is required. If the carrying value of the reporting unit exceeds its fair value, then the second step of the impairment test must be performed in order to determine the implied fair value of the goodwill. If the carrying value of the goodwill exceeds its implied fair value, then an impairment loss equal to the difference would be recorded.

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FLUIDIGM CORPORATION
NOTES TO CONDENSED CONSOLIDATED FINANCIAL STATEMENTS—(Continued)
(Unaudited)

We evaluate our finite lived intangible assets for indicators of possible impairment when events or changes in circumstances indicate the carrying amount of an asset may not be recoverable. If any indicator of impairment exists, we assess the recoverability of the affected intangible assets by determining whether the carrying value of the asset can be recovered through undiscounted future operating cash flows. If impairment is indicated, we estimate the asset's fair value using future discounted cash flows associated with the use of the asset, and adjust the carrying value of the asset accordingly.

Recent Accounting Changes and Accounting Pronouncements

Adoption of New Accounting Guidance

In July 2015, the FASB issued ASU 2015-11 Inventory (Topic 330): Simplifying the Measurement of Inventory, which changes the measurement principle for inventory from the lower of cost or market to the lower of cost or net realizable value. ASU 2015-11 defines net realizable value as estimated selling prices in the ordinary course of business, less reasonably predictable costs of completion, disposal, and transportation. We adopted this standard in the first quarter of 2017. The adoption of this ASU did not have a material impact on our consolidated financial statements.

In March 2016, the FASB issued ASU 2016-09 Compensation - Stock Compensation (Topic 718): Improvements to Employee Share-Based Payment Accounting. This ASU simplifies several aspects of the accounting for share-based payments, including changing the threshold to qualify for equity classification up to the employees' maximum statutory tax rates, allowing an entity-wide accounting policy election to either estimate the number of awards that are expected to vest or account for forfeitures as they occur, and clarifying the classification on the statement of cash flows of employee taxes paid when an employer withholds shares for tax-withholding purposes. We adopted this standard in the first quarter of 2017 by recording the cumulative impact of applying this guidance to retained earnings. We also elected to account for forfeitures as they occur, as permitted by ASU 2016-09. The adoption of this ASU did not have a material impact on our consolidated financial statements. See Note 9 for the impact on deferred tax assets.

Recent Accounting Pronouncements

In May 2014, the Financial Accounting Standards Board (FASB) issued Accounting Standard Update (ASU) 2014-09 regarding ASC (Topic 606) Revenue from Contracts with Customers. ASU 2014-09 provides principles for recognizing revenue to depict the transfer of promised goods or services to customers in an amount that reflects the consideration to which the entity expects to be entitled in exchange for those goods or services. ASU 2016-12 provides narrow scope improvements and practical expedients related to ASU 2014-09. The improvements address completed contracts and contract modifications at transition, non-cash consideration, the presentation of sales taxes and other taxes collected from customers, and assessment of collectability when determining whether a transaction represents a valid contract. On July 7, 2015, the FASB amended ASU 2014-09 to defer the effective date by one year with early adoption permitted as of the original effective date. ASU 2014-09 and ASU 2016-12 will be effective for our fiscal year beginning January 1, 2018, with early adoption permitted. While we have not completed our assessment of the new revenue recognition standard, we currently expect that this new standard will not have a material impact on our consolidated financial statements. We currently expect to adopt ASU 2014-09 in the first quarter of 2018 using the modified retrospective method. We will continue to monitor additional modifications, clarifications or interpretations undertaken by the FASB that may impact our current conclusions.

In February 2016, the FASB issued ASU 2016-02 Leases (Topic 842). This ASU requires lessees to recognize a right-of-use asset and a lease liability on the balance sheet for all leases with the exception of short-term leases. For lessees, leases will continue to be classified as either operating or finance leases in the income statement. Lessor accounting is similar to the current model but updated to align with certain changes to the lessee model. Lessors will continue to classify leases as operating, direct financing or sales-type leases. ASU 2016-02 will be effective for our fiscal year beginning January 1, 2019 and early adoption is permitted. We are currently evaluating the accounting, transition, and disclosure requirements of the standard. We have not yet determined whether we will elect early adoption of the standard and cannot currently estimate the financial statement impact of adoption.

In November 2016, the FASB issued ASU 2016-18 Statement of Cash Flows (Topic 230): Restricted Cash, a consensus of the FASB's Emerging Issues Task Force, amending the presentation of restricted cash within the statement of cash flows. The new guidance requires that restricted cash be included within cash and cash equivalents on the statement of cash flows. ASU 2016-18 will be effective for our fiscal year beginning January 1, 2018, with early adoption permitted. The adoption of this ASU is not expected to have a material impact on our consolidated financial statements.

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In January 2017, the FASB issued ASU 2017-04, Intangibles - Goodwill and Other (Topic 350): Simplifying the Test for Goodwill Impairment. The new guidance intends to simplify the subsequent measurement of goodwill. The ASU eliminates the requirement for an entity to calculate the implied fair value of goodwill to measure a goodwill impairment charge. Instead, an entity will perform its annual, or interim, goodwill impairment testing by comparing the fair value of a reporting unit with its carrying amount and recording an impairment charge for the amount by which the carrying amount exceeds the fair value. The ASU will be effective for annual and interim goodwill impairment testing performed for our fiscal year beginning January 1, 2020, with early adoption permitted. We are currently evaluating the adoption of this ASU and cannot estimate the financial statement impact of adoption.

There have been no other changes in accounting standards issued by the FASB during the three and six months ended June 30, 2017 that are expected to have a material impact on our financial position, results of operations or cash flows.

3. Convertible Notes

On February 4, 2014, we closed an underwritten public offering of $201.3 million aggregate principal amount of our 2.75% Senior Convertible Notes due 2034 (Notes) pursuant to an underwriting agreement, dated January 29, 2014. The Notes accrue interest at a rate of 2.75% per year, payable semi-annually in arrears on February 1 and August 1 of each year. The Notes will mature on February 1, 2034, unless earlier converted, redeemed, or repurchased in accordance with the terms of the Notes. The initial conversion rate of the Notes is 17.8750 shares of our common stock, par value $0.001 per share, per $1,000 principal amount of Notes (which is equivalent to an initial conversion price of approximately $55.94 per share). The conversion rate will be subject to adjustment upon the occurrence of certain specified events. Holders may surrender their Notes for conversion at any time prior to the stated maturity date. On or after February 6, 2018 and prior to February 6, 2021, we may redeem any or all of the Notes in cash if the closing price of our common stock exceeds 130% of the conversion price for a specified number of days, and on or after February 6, 2021, we may redeem any or all of the Notes in cash without any such condition. The redemption price of the Notes will equal 100% of the principal amount of the Notes plus accrued and unpaid interest. Holders may require us to repurchase all or a portion of their Notes on each of February 6, 2021, February 6, 2024, and February 6, 2029 at a repurchase price in cash equal to 100% of the principal amount of the Notes plus accrued and unpaid interest. If we undergo a fundamental change, as defined in the terms of the Notes, holders may require us to repurchase the Notes in whole or in part for cash at a repurchase price equal to 100% of the principal amount of the Notes plus accrued and unpaid interest.

In February 2014, we received $195.2 million, net of underwriting discounts, from the issuance of the Notes and incurred approximately $1.1 million in offering-related expenses. The underwriting discount of $6.0 million and the debt issuance costs of $1.1 million were recorded as offsets to the proceeds.

In February 2014, we used $113.2 million of the net proceeds to fund the cash portion of the consideration payable by us in connection with our acquisition of DVS Sciences, Inc. (now Fluidigm Sciences Inc.). Interest expense related to the Notes was approximately $1.5 million for both the three months ended June 30, 2017 and 2016, respectively. Interest expense related to the Notes was $2.9 million approximately for both the six months ended June 30, 2017 and 2016, respectively. Approximately $2.8 million of interest under the Notes became due and was paid during each of the six months ended June 30, 2017 and 2016, respectively.

The carrying values of the components of the Notes are as follows (in thousands):

	June 30, 2017	December 31, 2016
Principal amount of Notes	$201,250	$201,250
Unamortized debt discount	(5,209)	(5,330)
Unamortized debt issuance cost	(947)	(969)
Net carrying value of convertible notes	$195,094	$194,951

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4. Intangible Assets, net

Intangible assets include developed technology as a result of the DVS acquisition and other intangible assets included in Other non-current assets. Intangible assets, net were as follows (in thousands):

	June 30, 2017			
	Gross Amount	Accumulated Amortization	Net	Weighted-Average Amortization Period
Developed technology	$112,000	$(37,800)	$74,200	10.0 years
Patents and licenses	11,274	(5,124)	6,150	7.9 years
Total intangible assets, net	$123,274	$(42,924)	$80,350	

	December 31, 2016			
	Gross Amount	Accumulated Amortization	Net	Weighted-Average Amortization Period
Developed technology	$112,000	$(32,200)	$79,800	10.0 years
Patents and licenses	11,224	(4,533)	6,691	7.9 years
Total intangible assets, net	$123,224	$(36,733)	$86,491	

In connection with the acquisition of DVS in February 2014, we acquired developed technology with a gross fair value of $112.0 million. These acquired intangible assets are being amortized to cost of product revenue over their useful life of ten years. Related amortization for the three and six months ended June 30, 2017 was $2.8 million and $5.6 million, respectively. Related amortization expense for the three and six months ended June 30, 2016 was $2.8 million and $5.6 million, respectively.

Based on the carrying value of intangible assets as of June 30, 2017, the annual amortization expense for intangible assets is expected to be as follows (in thousands):

Fiscal Year	Amortization Expense
2017 (remainder of the year)	$ 6,200
2018	12,333
2019	12,242
2020	12,242
2021	12,087
Thereafter	25,246
	$ 80,350

5. Balance Sheet Details

Inventories

Inventories consist of the following (in thousands):

	June 30, 2017	December 31, 2016
Raw materials	$8,421	$8,919
Work-in-process	1,590	1,742

Finished goods	8,754	9,453
Total inventories, net	$18,765	$20,114

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Property and Equipment, net

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

	June 30, 2017	December 31, 2016
Computer equipment and software	$5,779	$5,497
Laboratory and manufacturing equipment	24,402	23,670
Leasehold improvements	8,940	8,747
Office furniture and fixtures	2,150	2,084
Property and equipment, gross	41,271	39,998
Less accumulated depreciation and amortization	(27,420)	(24,084)
Construction-in-progress	115	611
Property and equipment, net	$13,966	$16,525

Warranty

We accrue for estimated warranty obligations at the time of product shipment. Management periodically reviews the estimated fair value of its warranty liability and records adjustments based on the terms of warranties provided to customers, historical and anticipated warranty claim experience. Activity for our warranty accrual for the three and six months ended June 30, 2017 and 2016, which is included in other accrued liabilities, is summarized below (in thousands):

	Three Months Ended June 30,		Six Months Ended June 30,	
	2017	2016	2017	2016
Beginning balance	$864	$1,056	$1,023	$1,076
Accrual for current period warranties	19	163	187	288
Warranty costs incurred	(177)	(173)	(504)	(318)
Ending balance	$706	$1,046	$706	$1,046

6. Fair Value of Financial Instruments

The following tables summarize our cash and available-for-sale securities by significant category within the fair value hierarchy (in thousands):

	June 30, 2017					
	Carrying Amount	Gross Unrealized Gain	Gross Unrealized Loss	Fair Value	Cash and Cash Equivalents	Short-Term Marketable Securities
Assets:						
Cash	$15,411	$ —	$ —	$15,411	$ 15,411	$ —
Available-for-sale:						
Level I:						
Money market funds	12,388	—	—	12,388	12,388	—
Level II:						
U.S. government and agency securities	14,232	1	(1)	14,232	11,798	2,434
Total	$42,031	$ 1	$ (1)	$42,031	$ 39,597	$ 2,434

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	December 31, 2016					
	Carrying Amount	Gross Unrealized Gain	Gross Unrealized Loss	Fair Value	Cash and Cash Equivalents	Short-Term Marketable Securities
Assets:						
Cash	$13,984	$ —	$ —	$13,984	$ 13,984	$ —
Available-for-sale:						
Level I:						
Money market funds	21,061	—	—	21,061	21,061	—
Level II:						
U.S. government and agency securities	24,388	1	(4)	24,385	—	24,385
Total	$59,433	$ 1	$ (4)	$59,430	$ 35,045	$ 24,385

There were no transfers between Level I and Level II measurements during the six months ended June 30, 2017 and 2016, and there were no changes in the valuation techniques used.

The contractual maturity periods of $2.4 million of our marketable debt securities are within one year from June 30, 2017.

None of our available-for-sale securities have been in a continuous loss position for more than 12 months. We concluded that the declines in market value of our available-for-sale securities investment portfolio were temporary in nature and did not consider any of our investments to be other-than-temporarily impaired.

The estimated fair value of the Convertible Notes is based on a market approach (See Note 3). The estimated fair value was approximately $125.0 million and $139.7 million (par value $201.3 million) as of June 30, 2017 and December 31, 2016, and represents a Level II valuation. When determining the estimated fair value of our long-term debt, we used a commonly accepted valuation methodology and market-based risk measurements that are indirectly observable, such as credit risk.

7. Commitments and Contingencies

Operating Leases

We have entered into various long-term non-cancelable operating lease agreements for equipment and facilities expiring at various times through 2026. We leased office space under non-cancelable leases in the United States, Canada, Singapore, Japan, China, France and United Kingdom, with various expiration dates through March 2026. Certain facility leases also contain rent escalation clauses. Our lease payments are expensed on a straight-line basis over the life of the leases. Rental expense under operating leases, net of amortization of lease incentives and sublease income for the three and six months ended June 30, 2017 was $1.0 million and $2.6 million, respectively. Rental expense under operating leases, net of amortization of lease incentive and sublease income for the three and six months ended June 30, 2016 was $1.8 million and $3.3 million, respectively.

Future minimum lease payments and minimum sublease income under non-cancelable operating leases as of June 30, 2017 are as follows (in thousands):

Fiscal Year

	Minimum Lease Payments	Minimum Sublease Income
2017 (remainder of the year)	$2,374	$(532)
2018	4,507	(740)
2019	4,532	(523)
2020	2,307	(181)
2021	1,233	—
Thereafter	2,701	—
Total	$17,654	$(1,976)

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Indemnifications

From time to time, we have entered into indemnification provisions under certain of our agreements in the ordinary course of business, typically with business partners, customers, and suppliers. Pursuant to these agreements, we may indemnify, hold harmless, and agree to reimburse the indemnified parties on a case-by-case basis for losses suffered or incurred by the indemnified parties in connection with any patent or other intellectual property infringement claim by any third party with respect to our products. The term of these indemnification provisions is generally perpetual from the time of the execution of the agreement. The maximum potential amount of future payments we could be required to make under these indemnification provisions is typically not limited to a specific amount. In addition, we have entered into indemnification agreements with our officers, directors, and certain other employees. With certain exceptions, these agreements provide for indemnification for related expenses including, among others, attorneys' fees, judgments, fines and settlement amounts incurred by any of these individuals in any action or proceeding.

Since October 2015, we have been incurring legal expenses to defend claims by Thermo Fisher Scientific, Inc., (Thermo) against one of our employees. On December 21, 2015, Thermo filed a complaint in the Circuit Court for the County of Kalamazoo, Michigan against one of its former employees who had recently been hired by us alleging, among other claims, misappropriation of proprietary information and breach of contractual and fiduciary obligations to Thermo while still an employee of Thermo. On November 23, 2016, Thermo amended its complaint to add us as a party to the litigation, making various commercial and employment-related claims and seeking damages and injunctive relief. In July 2017, we entered into a settlement agreement with Thermo. Pursuant to the terms of the settlement agreement, we agreed to pay Thermo a one-time payment of $3.0 million in exchange for a release and dismissal of all claims with prejudice upon payment of the settlement. As a result of this settlement, in the second quarter of 2017, we accrued an additional $1.0 million of legal expense. This results in an accrued amount of $2.0 million as of June 30, 2017, net of a $1.0 million insurance recovery receivable related to this matter.

Contingencies

From time to time, we may be subject to various legal proceedings and claims arising in the ordinary course of business. These include disputes and lawsuits related to intellectual property, mergers and acquisitions, licensing, contract law, tax, regulatory, distribution arrangements, employee relations and other matters. Periodically, we review the status of each matter and assess its potential financial exposure. If the potential loss from any claim or legal proceeding is considered probable and a range of possible losses can be estimated, we accrue a liability for the estimated loss. Legal proceedings are subject to uncertainties, and the outcomes are difficult to predict. Because of such uncertainties, accruals are based only on the best information available at the time. As additional information becomes available, we continue to reassess the potential liability related to pending claims and litigation and we may revise estimates.

8. Stock-Based Compensation

During the three and six months ended June 30, 2017, we granted certain employees options to purchase 44,500 and 764,313 shares of common stock, respectively. The options granted during the three months ended June 30, 2017 had exercise prices ranging from $4.94 to $5.87 and a total grant date fair value of $0.2 million. The options granted during the six months ended June 30, 2017 had exercise prices ranging from $4.94 to $6.78 and a total grant date fair value of $4.7 million.

During the three and six months ended June 30, 2017, we granted certain employees 53,380 and 584,790 restricted stock units. The restricted stock units granted during the three months ended June 30, 2017 had fair market values ranging from $4.94 to $5.87 and a total grant date fair value of $0.3 million. The restricted stock units granted during the six months ended June 30, 2017 had a fair market value ranging from $4.94 and $6.78 and a total grant date fair value of $3.7 million.

The expenses relating to these options and restricted stock units will be recognized over their respective four-year vesting periods.

We recognized stock-based compensation expense of $2.3 million and $4.8 million during the three and six months ended June 30, 2017, respectively. We recognized stock-based compensation expense of $3.7 million and $7.4 million during the three and six months ended June 30, 2016, respectively. As of June 30, 2017, we had $5.1 million and $11.4 million of unrecognized stock-based compensation expense related to stock options and restricted stock units, respectively, which are expected to be recognized over a weighted average period of 2.7 years and 2.5 years, respectively.

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In 2016, we granted 184,050 and 87,620 performance-based stock options and performance-based restricted stock units (each, a "performance award"), respectively, to executive officers and employees, which were accounted for as equity awards. The number of performance awards that ultimately vest depends on the achievement of certain performance criteria set by the Compensation Committee of the Company's Board of Directors. The performance-based stock options have an exercise price per share of $7.10. We recognize stock-based compensation expense over the vesting period of the performance awards when achievement of the performance criteria becomes probable. We did not recognize any expense related to these performance awards in 2017 and 2016.

9. Income Taxes

The benefit for income taxes for the periods presented differs from the 34% U.S. Federal statutory rate primarily due to maintaining a valuation allowance for deferred tax assets, which primarily consist of net operating loss carryforwards.

We recorded a tax benefit of $0.8 million and $2.6 million for the three and six months ended June 30, 2017, respectively, which was primarily attributable to the amortization of our acquisition-related deferred tax liability and net operating loss from Canadian operations, partially offset by a tax provision and discrete items from our foreign operations. We recorded a tax benefit of $1.0 million and $1.8 million for the three and six months ended June 30, 2016, respectively, which was primarily attributable to the amortization of our acquisition-related deferred tax liability, partially offset by a tax provision and discrete items from our foreign operations.

Upon adoption of ASU 2016-09 (see Note 2), we recorded to the opening balance of retained earnings $9.3 million in deferred tax assets for previously unrecognized excess tax benefits that existed as of January 1, 2017, and a corresponding increase of $9.3 million in valuation allowances against these deferred tax assets as substantially all of our U.S. deferred tax assets, net of deferred tax liabilities, were subject to a full valuation allowance. The net impact to retained earnings was zero as a result of these adjustments.

Recording deferred tax assets is appropriate when realization of these assets is more likely than not. Assessing the realizability of deferred tax assets is dependent upon several factors including historical financial results. The deferred tax assets have been substantially offset by a valuation allowance because we have incurred net losses since our inception. We continue to evaluate the realizability of the deferred tax assets and related valuation allowance.

10. Information about Geographic Areas

We operate in one reporting segment, which is the development, manufacturing, and commercialization of life science tools. Our chief executive officer manages our operations and evaluates our financial performance on a consolidated basis. For purposes of allocating resources and evaluating regional financial performance, our chief executive officer reviews separate sales information for the different regions of the world. Our general and administrative expenses and our research and development expenses are not allocated to any specific region. Most of our principal operations, other than manufacturing, and our decision-making functions are located at our corporate headquarters in the United States.

The following table presents the total revenue by geographic area of our customers for each period presented (in thousands):

	Three Months Ended June 30,		Six Months Ended June 30,	
	2017	2016	2017	2016
United States	$11,674	$13,839	$23,505	$27,013
Europe	7,748	8,461	15,384	17,786
Asia-Pacific	3,866	3,983	8,853	9,991
Other	624	1,885	1,703	2,381
Total revenue	$23,912	$28,168	$49,445	$57,171

No individual customer represented more than 10% of our total revenues for the three and six months ended June 30, 2017 and 2016.

Revenue from sales to customers in China represented 12% of our total revenue, or $2.8 million, and 11% of our total revenue, or $5.2 million for the three and six months ended June 30, 2017, respectively. Revenue from sales to customers in the United Kingdom represented 12% of our total revenues, or $3.0 million for the three months ended June 30, 2017. Revenue from sales to customers in China represented 10% of our total revenue, or $2.8 million, and 11% of our total revenue, or $6.1 million for the three and six months ended June 30, 2016, respectively.

Revenue from sales to customers in the United Kingdom was less than 10% of our total revenue for the six months ended June 30, 2017 as well as for the three and six months ended June 30, 2016. Except for China and United Kingdom, no other foreign location accounted for sales in excess of 10% of our total revenue during the three and six months ended June 30, 2017 and 2016.

11**. Subsequent Events**

Tax Benefit Preservation Plan

On August 1, 2017, the Tax Benefit Preservation Plan (Tax Plan) dated as of November 21, 2016 expired and all of the preferred share purchase rights distributed to the holders of our common stock pursuant to the Tax Plan expired.

2017 Employee Stock Purchase Plan

We held our 2017 annual meeting of stockholders on August 1, 2017 (Annual Meeting). At the Annual Meeting, our stockholders approved the 2017 Employee Stock Purchase Plan (ESPP). A total of 1,000,000 shares of our common stock is reserved for issuance under the ESPP. Unless the administrator determines otherwise, each offering period under our ESPP has a duration of approximately six months during which an option granted pursuant to the ESPP may be exercised, (i) commencing on the first trading day on or after May 31 and November 30 of each year and terminating on or after May 31 and November 30, approximately six months later. The purchase price at which shares are sold under the ESPP is 85% of the lower of the fair market value of a share of our common stock on (1) the first day of the offering period, or (2) the last day of the offering period.

At-The-Market Offering

On August 3, 2017, we entered into a Sales Agreement with Cowen and Company, LLC (Cowen) to sell shares of our common stock having aggregate sales proceeds of up to $30 million, from time to time, through an “at the market” equity offering program under which Cowen will act as sales agent. Under the Sales Agreement, we set the parameters for the sale of shares, including the number of shares to be issued, the time period during which sales are requested to be made, limitation on the number of shares that may be sold in any one trading day and any minimum price below which sales may not be made. Subject to the terms and conditions of the Sales Agreement, Cowen may sell the shares by methods deemed to be an “at-the-market” offering as defined in Rule 415 promulgated under the Securities Act of 1933, as amended, including sales made (i) directly on The NASDAQ Global Select Market, (ii) on any other existing trading market for the common stock or (iii) to or through a market maker. Cowen will use commercially reasonable efforts in conducting such sales activities consistent with its normal trading and sales practices, applicable state and federal laws, rules and regulations and the rules of The NASDAQ Global Select Market. The Sales Agreement may be terminated by us upon five days’ notice to Cowen for any reason or by Cowen upon five days’ notice to us for any reason or immediately under certain circumstances, including but not limited to the occurrence of a material adverse change in the Company. Under the terms of the Sales Agreement, we may also sell shares to Cowen acting as principal for Cowen’s own account at prices agreed upon at the time of sale.

The Sales Agreement provides that Cowen will be entitled to compensation for its services that will not exceed, but may be lower than, 3% of the gross sales price per share of all shares sold through Cowen under the Sales Agreement. We have no obligation to sell any shares under the Sales Agreement, and may at any time suspend solicitation and

offers under the Sales Agreement.

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

The following discussion and analysis should be read together with our condensed consolidated financial statements and the notes to those statements included elsewhere in this Form 10-Q. This Form 10-Q contains 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. The forward-looking statements are contained principally in the section entitled "Risk Factors" and this Management's Discussion and Analysis of Financial Condition and Results of Operations. Forward-looking statements include information concerning our possible or assumed future cash flow, revenue, sources of revenue and results of operations, cost of product revenue and product margin, operating and other expenses, unit sales and the selling prices of our products, business strategies, financing plans, expansion of our business, competitive position, industry environment, potential growth opportunities, market growth expectations, 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.

Forward-looking statements involve known and unknown risks, uncertainties, and other factors that may cause our actual results, performance, or achievements to be materially different from any future results, performance, or achievements expressed or implied by the forward-looking statements. We discuss these risks in greater detail in Part II, Item 1A, "Risk Factors," elsewhere in this Form 10-Q, and in our Annual Report on Form 10-K filed with the Securities and Exchange Commission, or SEC. Given these uncertainties, you should not place undue reliance on these forward-looking statements. Also, forward-looking statements represent our management's beliefs and assumptions only as of the date of this Form 10-Q.

Except as required by law, we assume no obligation to update these forward-looking statements, or to update the reasons actual results could differ materially from those anticipated in these forward-looking statements, even if new information becomes available in the future. You should read this Form 10-Q completely and with the understanding that our actual future results may be materially different from what we expect.

"Fluidigm," the Fluidigm logo, "Access Array," "Advanta," "Biomark," "C1," "Callisto," "Cell-ID," "CyTOF," "D3," "Delta Gene," "Digital Array," "Dynamic Array," "EP1," "FC1," "Flex Six," "Helios," "High-Precision 96.96 Genotyping," "Juno," "Maxpar," "MSL," "Nanoflex" "Open App," "Polaris," "qdPCR 37K," "Script Builder," "Script Hub," "Singular," "SNP Trace" and "SNP Type" are trademarks or registered trademarks of Fluidigm Corporation. Other service marks, trademarks and trade names referred to in this Form 10-Q are the property of their respective owners.

In this Form 10-Q, "we," "us," and "our" refer to Fluidigm Corporation and its subsidiaries.

Overview

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

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

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

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

Our total revenue for the six months ended June 30, 2017 was $49.4 million. Our total revenue was $104.4 million in 2016, $114.7 million in 2015, and $116.5 million in 2014. We have incurred significant net losses since our inception in 1999 and, as of June 30, 2017, our accumulated deficit was $473.8 million.

At the end of 2016, we began reallocating our resources based on revenue contribution and growth expectations across our target markets, including a reorganization of our sales team and commercial leadership. As part of this shift and due to our negative revenue growth in 2016 and 2015, we implemented certain operational efficiency and cost-savings initiatives beginning in the first quarter of 2017 intended to align our resources with our product strategy, reduce our operating expenses, and manage our cash flows. These cost efficiency initiatives include targeted workforce reductions, optimizing our facilities, and reducing excess space. In addition, we may need to decrease or defer capital expenditures and development activities to further optimize our operations. Such measures may impair our ability to invest in developing, marketing and selling new and existing products. The efficiency and cost-savings initiatives are expected to reduce operating expenses and enable us to efficiently align our resources in areas providing the greatest benefit, but if our efficiency and cost reduction efforts are unsuccessful, our cash position could be negatively impacted and we may, among other things, be required to seek other sources of financing.

Recent Developments

On August 3, 2017, we entered into a sales agreement with Cowen and Company, LLC, or Cowen, in connection with our “at the market” equity offering program.

Critical Accounting Policies, Significant Judgments and Estimates

Our condensed consolidated financial statements and the related notes included elsewhere in this Form 10-Q are prepared in accordance with accounting principles generally accepted in the United States. The preparation of these condensed consolidated financial statements requires us to make estimates and assumptions that affect the reported amounts of assets, liabilities, revenue, costs, and expenses and related disclosures. We base our estimates on historical experience and on various other assumptions that we believe to be reasonable under the circumstances. Changes in accounting estimates may occur from period to period. Accordingly, actual results could differ significantly from the estimates made by our management. We evaluate our estimates and assumptions on an ongoing basis. To the extent there are material differences between these estimates and actual results, our future financial statement presentation, financial condition, results of operations, and cash flows will be affected.

Except as otherwise disclosed, there have been no material changes in our critical accounting policies and estimates in the preparation of our condensed consolidated financial statements during the three and six months ended June 30, 2017 compared to those disclosed in our Annual Report on Form 10-K for the year ended December 31, 2016, as filed with the SEC on March 3, 2017.

Recent Accounting Pronouncements

See Note 2 — “Summary of Significant Accounting Policies” in the notes to our condensed consolidated financial statements.

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Results of Operations

The following table presents our historical condensed consolidated statements of operations data for the three and six months ended June 30, 2017 and 2016, and as a percentage of total revenue for the respective periods (in thousands):

	Three Months Ended June 30,				Six Months Ended June 30,			
	2017		2016		2017		2016	
Revenue:								
Total revenue	$23,912	100 %	$28,168	100 %	$49,445	100 %	$57,171	100 %
Costs and expenses:								
Cost of product revenue	10,794	45	11,239	40	21,644	44	22,026	39
Cost of service revenue	1,169	5	1,248	4	2,288	5	2,446	4
Research and development	7,461	31	9,978	35	15,986	32	20,390	36
Selling, general and administrative	20,975	88	23,845	85	43,551	88	49,320	86
Total costs and expenses	40,399	169	46,310	164	83,469	169	94,182	165
Loss from operations	(16,487)	(69)	(18,142)	(64)	(34,024)	(69)	(37,011)	(65)
Interest expense	(1,456)	(6)	(1,453)	(5)	(2,911)	(6)	(2,906)	(5)
Other income (expense), net	183	1	(44)	—	193	—	(368)	(1)
Loss before income taxes	(17,760)	(74)	(19,639)	(70)	(36,742)	(74)	(40,285)	(70)
Benefit from income taxes	827	3	1,022	4	2,608	5	1,784	3
Net loss	$(16,933)	(71)%	$(18,617)	(66)%	$(34,134)	(69)%	$(38,501)	(67)%

Revenue

We generate revenue primarily from sales of our products and services. Our product revenue consists of sales of instruments and consumables, including IFCs, assays, and other reagents. Our service revenue consists of post-warranty service contracts, preventive maintenance plans, instrument parts, installation, and training. We also receive revenue from our license agreements with third parties. The following table presents our revenue by source for the three and six months ended June 30, 2017 and 2016 (in thousands):

	Three Months Ended June 30,		Year-Over-Year Change		Six Months Ended June 30,		Year-Over-Year Change	
	2017	2016			2017	2016		
Revenue:								
Instruments	$9,928	$13,195	(25)	%	$20,665	$27,009	(23)	%
Consumables	9,572	11,538	(17)		20,142	23,094	(13)	
Product revenue	19,500	24,733	(21)		40,807	50,103	(19)	
Service revenue	4,319	3,389	27		8,486	6,933	22	
License revenue	93	46	102		152	135	13	
Total revenue	$23,912	$28,168	(15)	%	$49,445	$57,171	(14)	%

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The following table presents our total revenue by geographic area of our customers and as a percentage of total revenue for the three and six months ended June 30, 2017 and 2016 (in thousands):

	Three Months Ended June 30,				Year-Over-Year Change	Six Months Ended June 30,				Year-Over-Year Change
	2017		2016			2017		2016		
United States	$11,674	49 %	$13,839	49 %	(16)%	$23,505	48 %	$27,013	47 %	(13)%
Europe	7,748	32	8,461	30	(8)	15,384	31	17,786	31	(14)
Asia-Pacific	3,866	16	3,983	14	(3)	8,853	18	9,991	18	(11)
Other	624	3	1,885	7	(67)	1,703	3	2,381	4	(28)
Total	$23,912	100%	$28,168	100%	(15)%	$49,445	100%	$57,171	100%	(14)%

We sell our instruments to leading academic research institutions, clinical research laboratories, and biopharmaceutical, biotechnology and Ag-Bio companies. Total revenue from our five largest customers comprised 21% and 16% of our total revenue for the three months ended June 30, 2017 and 2016, respectively. Total revenue from our five largest customers comprised 16% of our total revenue for both six-month periods ended June 30, 2017 and 2016, respectively.

Total Revenue

Total revenue decreased by $4.3 million, or 15%, to $23.9 million for the three months ended June 30, 2017 compared to $28.2 million for the three months ended June 30, 2016. The decrease was primarily due to a decrease of $5.2 million in product revenue, partially offset by a $0.9 million increase in service revenue. Total revenue decreased in all geographic areas for the three months ended June 30, 2017 compared to the three months ended June 30, 2016. Revenue in the United States decreased by $2.2 million, or 16%, for the three months ended June 30, 2017 compared to the three months ended June 30, 2016. The decrease was mainly attributable to lower mass cytometry instrument sales and lower genomics consumables sales. Revenue in the Other area decreased by $1.3 million, or 67%, for the three months ended June 30, 2017 compared to the three months ended June 30, 2016. The decrease was largely driven by overall lower instrument sales. Revenues in Europe decreased by $0.7 million, or 8%, for the three months ended June 30, 2017 compared to the three months ended June 30, 2016. The decrease was predominantly driven by lower genomics product sales, partially offset by an increase in sales of our mass cytometry products. Revenue in Asia-Pacific was slightly lower for the three months ended June 30, 2017 compared to the three months ended June 30, 2016, mainly due to lower genomics consumables sales.

Total revenue decreased by $7.7 million, or 14%, to $49.4 million for the six months ended June 30, 2017 compared to $57.2 million for the six months ended June 30, 2016. The decrease was primarily due to a decrease of $9.3 million in product revenue, partially offset by a $1.6 million increase in service revenue. Total revenue decreased in all geographic areas for the six months ended June 30, 2017 compared to the six months ended June 30, 2016. Revenues in the United States decreased by $3.5 million, or 13%, for the six months ended June 30, 2017 compared to the six months ended June 30, 2016. The decrease was mainly driven by overall lower instrument and IFC sales. Revenues in Europe, Asia-Pacific and Other decreased by $2.4 million, $1.1 million and $0.7 million, or 14%, 11% and 28%, respectively, for the six months ended June 30, 2017 compared to the six months ended June 30, 2016. The decreases were predominantly driven by lower genomics instrument sales and, to a lesser extent, lower genomics consumables sales. The decreases were partially offset by an increase in sales of our mass cytometry products.

Product Revenue

Product revenue decreased by $5.2 million, or 21%, to $19.5 million for the three months ended June 30, 2017 compared to the three months ended June 30, 2016. Instrument revenue decreased by $3.3 million, or 25%, to $9.9 million for the three months ended June 30, 2017 compared to the three months ended June 30, 2016. The decrease

was primarily due to lower unit sales of our genomics instruments, particularly single-cell genomics instruments and, to a lesser extent, lower average selling prices of C1 and Helios systems. Consumables revenue decreased by $2.0 million, or 17%, to $9.6 million, for the three months ended June 30, 2017 compared to the three months ended June 30, 2016. The decrease was primarily attributable to decreased unit sales of genomics consumables, particularly IFCs, partially offset by increased sales of mass cytometry reagents.

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Product revenue decreased by $9.3 million, or 19%, to $40.8 million for the six months ended June 30, 2017 compared to the six months ended June 30, 2016. Instrument revenue decreased by $6.3 million, or 23%, to $20.7 million for the six months ended June 30, 2017 compared to the six months ended June 30, 2016. The decrease was mainly due to lower unit sales of our genomics instruments, particularly single-cell genomics instruments and, to a lesser extent, lower average selling prices of C1 and Helios systems. The decrease was partially offset by sales of our new imaging mass cytometry system. Consumables revenue decreased by $3.0 million, or 13%, to $20.1 million for the six months ended June 30, 2017 compared to the six months ended June 30, 2016. The decrease was mainly attributable to decreased unit sales of genomics consumables, particularly IFCs, partially offset by increased sales of mass cytometry antibodies and reagents.

We expect the average selling prices of our products to fluctuate over time based on market conditions, product mix, and currency fluctuations. We cannot provide assurance concerning future revenue growth, if any.

Service Revenue

Service revenue increased by $0.9 million, or 27%, to $4.3 million for the three months ended June 30, 2017 compared to $3.4 million for the three months ended June 30, 2016. The increase was mainly driven by an increase in instruments under post-warranty service contracts and service parts as a result of growth in our instrument installed base, particularly mass cytometry instruments. Revenue from post-warranty service contracts generally lags our instruments revenue by one year. Other fee-for-service offerings, including training, installation, labor and preventive maintenance, were slightly lower during the period.

Service revenue increased by $1.6 million, or 22%, to $8.5 million for the six months ended June 30, 2017 compared to $6.9 million for the six months ended June 30, 2016. The increase was mainly driven by an increase in instruments under post-warranty service contracts and service parts as a result of growth in our instrument installed base, particularly mass cytometry instruments. Revenue from post-warranty service contracts generally lags our instruments revenue by one year. Other fee-for-service offerings, including training, installation, labor and preventive maintenance, were slightly lower during the period.

License Revenue

All license revenue is generated in the United States. License revenue was relatively flat for the three and six months ended June 30, 2017 compared to the same periods in 2016.

Cost of Product and Service Revenue

The following table presents our cost of product and service revenue and product and service margins for the three and six months ended June 30, 2017 and 2016 (in thousands):

	Three Months Ended June 30,		Six Months Ended June 30,	
	2017	2016	2017	2016
Cost of product revenue	$10,794	$11,239	$21,644	$22,026
Product margin	45 %	55 %	47 %	56 %
Cost of service revenue	$1,169	$1,248	$2,288	$2,446
Service margin	73 %	63 %	73 %	65 %

Cost of product revenue includes manufacturing costs incurred in the production process, including component materials, labor and overhead, packaging, and delivery costs. In addition, cost of product revenue includes

amortization of developed technology and intangibles, royalty costs for licensed technologies included in our products, warranty, provisions for slow-moving and obsolete inventory, and stock-based compensation expense. Cost of service revenue includes direct labor hours, overhead, and instrument parts. Costs related to license revenue are included in research and development expense.

Cost of product revenue decreased by $0.4 million, or 4%, to $10.8 million for the three months ended June 30, 2017 compared to the three months ended June 30, 2016. Overall cost of product revenue as a percentage of related revenue was 55% and 45% for the three months ended June 30, 2017 and 2016, respectively. Product margin decreased by ten percentage points compared to the same period in 2016, largely attributable to higher unit product costs from lower production volumes, higher excess and obsolete inventory expense, fixed amortization of developed technology over lower revenues and, to a lesser extent, lower average selling prices for C1 and Helios.

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Cost of product revenue decreased by $0.4 million, or 2%, to $21.6 million for the six months ended June 30, 2017 compared to the six months ended June 30, 2016. Overall cost of product revenue as a percentage of related revenue was 53% and 44% for the six months ended June 30, 2017 and 2016, respectively. Product margin decreased by nine percentage points compared to the same period in 2016, largely attributable to fixed amortization of developed technology over lower revenues, higher unit product costs from lower production volumes, higher excess and obsolete inventory expense and, to a lesser extent, lower average selling prices across most instruments and consumables.

Cost of service revenue decreased by $0.1 million, or 6%, to $1.2 million for the three months ended June 30, 2017 compared to the three months ended June 30, 2016. Overall cost of service revenue as a percentage of related revenue was 27% and 37% for the three months ended June 30, 2017 and 2016, respectively. The service margin increased ten percentage points during the three months ended June 30, 2017 compared to the same period in 2016, primarily driven by lower material and labor costs due to greater efficiency.

Cost of service revenue decreased by $0.2 million, or 6%, to $2.3 million for the six months ended June 30, 2017 compared to the six months ended June 30, 2016. Overall cost of service revenue as a percentage of related revenue was 27% and 35% for the six months ended June 30, 2017 and 2016, respectively. The service margin increased eight percentage points during the six months ended June 30, 2017 compared to the same period in 2016, primarily driven by lower labor and material costs due to greater efficiency.

Our cost of product revenue and related product margin may fluctuate depending on the capacity utilization of our manufacturing facilities in response to market conditions and the demand for our products.

Operating Expenses

The following table presents our operating expenses for the three and six months ended June 30, 2017 and 2016 (in thousands):

	Three Months Ended June 30,		Year-Over-Year Change		Six Months Ended June 30,		Year-Over-Year Change	
	2017	2016			2017	2016		
Research and development	$7,461	$9,978	(25	)%	$15,986	$20,390	(22	)%
Selling, general and administrative	20,975	23,845	(12	)	43,551	49,320	(12	)
Total	$28,436	$33,823	(16	)%	$59,537	$69,710	(15	)%

Research and Development

Research and development expense consists primarily of personnel and independent contractor costs, prototype and material expenses, and other allocated facilities and information technology expenses. We have made substantial investments in research and development since our inception. Our research and development efforts have focused primarily on enhancing our technologies and supporting development and commercialization of new and existing products and services.

Research and development expense decreased by $2.5 million, or 25%, to $7.5 million for the three months ended June 30, 2017 compared to the three months ended June 30, 2016. The decrease was primarily attributable to the implementation of our cost-savings initiatives in the first quarter of 2017, including headcount and compensation savings of $1.4 million. In addition, we had a decrease in product material and supplies costs of $1.0 million due to higher-cost projects in the prior year period.

Research and development expense decreased by $4.4 million, or 22%, to $16.0 million for the six months ended June 30, 2017 compared to the six months ended June 30, 2016. The decrease was primarily attributable to the implementation of our cost-savings initiatives in the first quarter of 2017, including headcount and compensation savings of $2.2 million. In addition, we had a decrease in product material and supplies costs of $2.2 million due to higher-cost projects in the prior year period.

We expect research and development expense to decrease in 2017 compared to 2016 as we implement efficiency and cost savings initiatives in 2017.

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Selling, General and Administrative

Selling, general and administrative expense consists primarily of personnel costs for our sales and marketing, business development, finance, legal, human resources, and general management, as well as professional services, such as legal and accounting services.

Selling, general and administrative expense decreased $2.9 million, or 12%, to $21.0 million for the three months ended June 30, 2017 compared to the three months ended June 30, 2016. This decrease was primarily due to the implementation of our cost-savings initiatives in the first quarter of 2017, including headcount and compensation savings of $1.6 million and infrastructure and facilities savings of $1.2 million.

Selling, general and administrative expense decreased $5.8 million, or 12% to $43.6 million for the six months ended June 30, 2017 compared to the six months ended June 30, 2016. This decrease was primarily due to the implementation of our cost-savings initiatives in the first quarter of 2017, including headcount and compensation savings of $1.7 million and infrastructure and facilities savings of $1.6 million. In addition, we had lower legal expenses of $1.3 million and a decrease in trade show and travel expenses of $1.2 million. These decreases were partially offset by an increase in depreciation expense of $0.9 million.

We expect selling, general and administrative expense to decrease in 2017 compared to 2016 as we implement efficiency and cost savings initiatives in 2017.

Interest Expense and Other Expense, Net

The following table presents these items for the three and six months ended June 30, 2017 and 2016 (in thousands):

	Three Months Ended June 30,		Year-Over-Year Change		Six Months Ended June 30,		Year-Over-Year Change	
	2017	2016			2017	2016		
Interest expense	$1,456	$1,453	—	%	$2,911	$2,906	—	%
Other (income) expense, net	(183)	44	(516)		(193)	368	(152)	
Total	$1,273	$1,497	(15)	%	$2,718	$3,274	(17)	%

On February 4, 2014, we closed an underwritten public offering of $201.3 million aggregate principal amount of our 2.75% Senior Convertible Notes due 2034, or the Notes. The Notes accrue interest at a rate of 2.75% per year, payable semi-annually in arrears on February 1 and August 1 of each year. The Notes will mature on February 1, 2034, unless earlier converted, redeemed, or repurchased in accordance with the terms of the Notes.

Interest expense was $1.5 million for both the three months ended June 30, 2017 and 2016.

Interest expense was $2.9 million for both the six months ended June 30, 2017 and 2016.

Other income increased by $0.2 million for the three months ended June 30, 2017 compared to the three months ended June 30, 2016, mainly due to the net favorable effects of foreign exchange rate changes during the three months ended June 30, 2017 compared to the three months ended June 30, 2016.

Other income increased by $0.6 million for the six months ended June 30, 2017 compared to the six months ended June 30, 2016, mainly due to the net favorable effects of foreign exchange rate changes during the six months ended June 30, 2017 compared to the six months ended June 30, 2016.

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Benefit from Income Taxes

We recorded a tax benefit of $0.8 million and $1.0 million for the three months ended June 30, 2017 and 2016, respectively.
The tax benefit for the three months ended June 30, 2017 and 2016 was primarily attributable to the amortization of our acquisition-related deferred tax liability and losses from our Canadian operations, partially offset by other foreign tax provisions. The benefit from income taxes decreased by $0.2 million for the three months ended June 30, 2017 compared to the three months ended June 30, 2016 mainly driven by true-up adjustments resulting from the filing of tax returns in foreign jurisdictions.

We recorded a tax benefit of $2.6 million and $1.8 million for the six months ended June 30, 2017 and 2016, respectively. The tax benefit for the six months ended June 30, 2017 and 2016 was primarily attributable to the amortization of our acquisition-related deferred tax liability and losses from our Canadian operations, partially offset by tax provisions. The benefit from income taxes increased by $0.8 million for the six months ended June 30, 2017 compared to the six months ended June 30, 2016 mainly driven by increased losses from our Canadian operations.

Liquidity and Capital Resources

Sources of Liquidity

As of June 30, 2017, our principal sources of liquidity consisted of $39.6 million of cash and cash equivalents and $2.4 million of short-term investments. As of June 30, 2017, our working capital excluding deferred revenue was $53.9 million.

The following table presents our cash flow summary for each period presented (in thousands):

	Six Months Ended June 30,	
	2017	2016
Net cash used in operating activities	$(16,778)	$(15,146)
Net cash provided by investing activities	21,089	21,496
Net cash (used in) provided by financing activities	(46)	134
Net increase in cash and cash equivalents	4,552	6,781

Net Cash Used in Operating Activities

We derive cash flows from operations primarily from cash collected from the sale of our products and services. Our cash flows from operating activities are also significantly influenced by our use of cash for operating expenses to support the growth of our business. We have historically experienced negative cash flows from operating activities as we have expanded our business and built our infrastructure domestically and internationally. In the first quarter of 2017, we implemented efficiency and cost-savings initiatives and we expect these initiatives to reduce our operating expenses in 2017 compared to 2016.

Net cash used in operating activities for the six months ended June 30, 2017 was $16.8 million, and consisted of a net loss of $34.1 million, adjusted for non-cash adjustments of $14.0 million and net change in assets and liabilities of $3.3 million. Non-cash items primarily included amortization of developed technology of $5.6 million, stock-based compensation expense of $4.8 million, depreciation and amortization of $4.1 million, and other non-cash items of $0.4 million. The net change in assets and liabilities was primarily driven by an increase in other liabilities of $2.2 million, a decrease in inventory of $1.1 million, and a decrease in accounts receivable of $0.9 million, and an increase in

accounts payable of $0.2 million, partially offset by a decrease in deferred revenue of $0.4 million, and an increase in other assets of $0.8 million.

Net cash used in operating activities for the six months ended June 30, 2016, was $15.1 million, and consisted of net loss of $38.5 million, adjusted for non-cash adjustments of $16.8 million, and a net change in assets and liabilities of $6.5 million. Non-cash items primarily included stock-based compensation expense of $7.4 million, amortization of developed technology of $5.6 million, depreciation and amortization of $3.2 million, and other non-cash items of $0.6 million. The net change in assets and liabilities was primarily driven by a decrease in accounts receivable of $6.0 million, an increase in other liabilities of $2.2 million and an increase in deferred revenues of $0.4 million, partially offset by a decrease of accounts payable of $1.0 million, an increase of inventory of $0.8 million, and an increase in other assets of $0.3 million.

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Net Cash Provided by Investing Activities

Our primary investing activities consist of purchases, sales, and maturities of our short-term investments and to a much lesser extent, capital expenditures for manufacturing, laboratory, computer equipment and software to support our infrastructure and work force. We expect to continue to incur costs for capital expenditures for demonstration units and loaner equipment to support our sales and service efforts, and computer equipment and software to support our business operations. However, as a result of our efficiency and cost-savings initiatives, we may decrease or defer certain capital expenditures and development activities, while further optimizing our organization.

Net cash provided by investing activities was $21.1 million during the six months ended June 30, 2017. Net cash provided by investing activities primarily consisted of $23.4 million of proceeds from sales and maturities of investments, partially offset by purchases of investments of $1.5 million and capital expenditures of $0.8 million.

Net cash provided by investing activities was $21.5 million during the six months ended June 30, 2016. Net cash provided by investing activities primarily consisted of $56.4 million of proceeds from sales and maturities of investments and proceeds from the sale of the Verinata investment of $2.3 million, partially offset by purchases of investments of $34.6 million and capital expenditures of $2.7 million.

In February 2013, Illumina, Inc. acquired Verinata Health, Inc. (Verinata) for $350 million in cash and up to an additional $100 million in milestone payments through December 2015. The final milestones related to the sale of Verinata to Illumina were met in December 2015 and, accordingly, we recorded our share of these milestone payment obligations in the amount of $2.3 million from the sale of investment in Verinata in the accompanying consolidated statement of operations for the year ended December 31, 2015. The $2.3 million payment was subsequently received in January 2016.

Net Cash (Used in) Provided by Financing Activities

There were no significant financing activities for the six months ended June 30, 2017 and 2016.

Capital Resources

At June 30, 2017, our working capital excluding deferred revenue was $53.9 million, including cash, cash equivalents, and short-term investments of $42.0 million.

On August 3 2017, we entered into a Sales Agreement with Cowen to sell shares of our common stock having aggregate sales proceeds of up to $30 million, from time to time, through an “at the market” equity offering program under which Cowen will act as sales agent. Under the Sales Agreement, we set the parameters for the sale of shares, including the number of shares to be issued, the time period during which sales are requested to be made, limitation on the number of shares that may be sold in any one trading day and any minimum price below which sales may not be made. The Sales Agreement provides that Cowen will be entitled to compensation for its services that will not exceed, but may be lower than, 3% of the gross sales price per share sold through them under the sales agreement. The Sales Agreement shall automatically terminate upon the issuance and sale of placement shares equaling sales proceeds of $30 million and may be terminated earlier by either party upon five days’ notice. We have no obligation to sell any shares under the Sales Agreement, and may at any time suspend solicitation and offers under the Sales Agreement.

We believe our existing cash, cash equivalents, and investments will be sufficient to meet our working capital and capital expenditure needs for at least the next 18 months. However, we may experience lower than expected cash generated from operating activities or greater than expected capital expenditures, cost of revenue, or operating expenses, and we may need to raise additional capital to fund our operations, further our research and development

activities, or acquire or invest in a business. Our future funding requirements will depend on many factors, including market acceptance of our products, the cost of our research and development activities, the cost of filing and prosecuting patent applications, the cost associated with litigation or disputes relating to intellectual property rights or otherwise, the cost and timing of regulatory clearances or approvals, if any, the cost and timing of establishing additional sales, marketing, and distribution capabilities, the cost and timing of establishing additional technical support capabilities, the effect of competing technological and market developments, and the effectiveness of our efficiency and cost reduction initiatives. In the future, we may acquire businesses or technologies from third parties, and we may decide to raise additional capital through debt or equity financing to the extent we believe this is necessary to successfully complete these acquisitions.

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If we require additional funds in the future, we may not be able to obtain such funds on acceptable terms, or at all. If we raise additional funds by issuing equity securities, including any issuances pursuant to our "at-the-market" equity offering program under our sales agreement with Cowen, our stockholders could experience dilution. Debt financing, if available, may involve covenants restricting our operations or our ability to incur additional debt. Any additional debt or equity financing that we raise may contain terms that are not favorable to us or our stockholders. If we do not have, or are not able to obtain, sufficient funds, we may have to delay development or commercialization of our products or license to third parties the rights to commercialize products or technologies that we would otherwise seek to commercialize. We also may have to reduce marketing, customer support, research and development, or other resources devoted to our products.

Due to our negative revenue growth in 2016 and 2015, we implemented certain operational efficiency and cost-savings initiatives beginning in the first quarter of 2017 intended to align our resources with our product strategy, reduce our operating expenses, and manage our cash flows. These cost efficiency initiatives include targeted workforce reductions, optimizing our facilities, and reducing excess space. In addition, we may need to decrease or defer capital expenditures and development activities to further optimize our operations; such measures may impair our ability to invest in developing, marketing and selling new and existing products. The efficiency and cost-savings initiatives are expected to reduce operating expenses and enable us to more efficiently align our resources in areas providing the greatest benefit. If our efficiency and cost reduction efforts are unsuccessful, our cash position could be negatively impacted and we may, among other things, be required to seek other sources of financing.

Off-Balance Sheet Arrangements

As of June 30, 2017, we did not have any off-balance sheet arrangements as defined in Item 303(a)(4) of the Securities and Exchange Commission's Regulation S-K.

Contractual Obligations and Commitments

Our operating lease obligations include a lease for our current headquarters and leases for manufacturing, laboratory, warehousing and office space for our foreign subsidiaries. Please see Note 7 to the financial statements for our lease obligations.

Other than as disclosed above, there have been no material changes during the six months ended June 30, 2017 to our contractual obligations disclosed in our “Management’s Discussion and Analysis of Financial Condition and Results of Operations” included in our Annual Report on Form 10-K for the year ended December 31, 2016.

Item 3. Quantitative and Qualitative Disclosures about Market Risk

Market risk represents the risk of loss that may impact our financial position due to adverse changes in financial market prices and rates. Our market risk exposure is primarily a result of fluctuations in foreign currency exchange rates and interest rates. We do not hold or issue financial instruments for trading purposes.

Foreign Currency Exchange Risk

As we expand internationally, our results of operations and cash flows will become increasingly subject to fluctuations due to changes in foreign currency exchange rates. Our revenue is generally denominated in the local currency of the contracting party. Historically, the majority of our revenue has been denominated in U.S. dollars. Our expenses are generally denominated in the currencies in which our operations are located, which is primarily in the United States, with a portion of expenses incurred in Singapore and Canada where our manufacturing facilities are located. Our results of operations and cash flows are, therefore, subject to fluctuations due to changes in foreign currency exchange

rates. The volatility of exchange rates depends on many factors that we cannot forecast with reliable accuracy. We have experienced and will continue to experience fluctuations in our net income or loss as a result of transaction gains or losses related to revaluing certain current asset and current liability balances that are denominated in currencies other than the functional currency of the entities in which they are recorded. For the six months ended June 30, 2017 and 2016, our foreign currency income was nil and a loss of $0.6 million, respectively. To date, we have not entered into any foreign currency hedging contracts although we may do so in the future. As our international operations grow, we will continue to reassess our approach to manage our risk relating to fluctuations in currency rates. If foreign currency exchange rates had changed by 10% during the periods presented, it would not have had a material impact on our financial position or results of operations.

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Interest Rate Sensitivity

We had cash and cash equivalents of $39.6 million at June 30, 2017. These amounts were held primarily in cash on deposit with banks and money market funds which are short-term. We had $2.4 million in investments at June 30, 2017, held primarily in U.S. government and agency securities with contractual maturity dates that are within one year from June 30, 2017. Cash and cash equivalents and investments are held for working capital purposes. Due to the short-term nature of these investments, we believe that we do not have any material exposure to changes in the fair value of our investment portfolio as a result of changes in interest rates. Declines in interest rates, however, will reduce future investment income. If overall interest rates had decreased by 10% during the periods presented, our interest income would not have been materially affected.

Fair Value of Financial Instruments

We do not have material exposure to market risk with respect to investments. We do not use derivative financial instruments for speculative or trading purposes. However, we may adopt specific hedging strategies in the future.

Item 4. Controls and Procedures

Evaluation of Disclosure Controls and Procedures

Our management, with the participation of our Chief Executive Officer and our Chief Financial Officer, evaluated the effectiveness of our disclosure controls and procedures as of June 30, 2017. The term “disclosure controls and procedures,” as defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act, means controls and other procedures of a company that are designed to ensure that information required to be disclosed by a company in the reports that it files or submits under the Exchange Act is recorded, processed, summarized and reported, within the time periods specified in the SEC’s rules and forms. Disclosure controls and procedures include, without limitation, controls and procedures designed to ensure that information required to be disclosed by a company in the reports that it files or submits under the Exchange Act is accumulated and communicated to the company’s management, including its principal executive and principal financial officers, as appropriate to allow timely decisions regarding required disclosure. Management recognizes that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving their objectives and management necessarily applies its judgment in evaluating the cost-benefit relationship of possible controls and procedures. Based on the evaluation of our disclosure controls and procedures as of June 30, 2017, our Chief Executive Officer and Chief Financial Officer concluded that, as of such date, our disclosure controls and procedures were effective at the reasonable assurance level.

Changes in Internal Control Over Financial Reporting

There were no changes in our internal control over financial reporting that occurred during the three months ended June 30, 2017 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Limitations on the Effectiveness of Controls

Control systems, no matter how well conceived and operated, are designed to provide a reasonable, but not an absolute, level of assurance that the objectives of the control system are met. Further, the design of a control system must reflect the fact that there are resource constraints, and the benefits of controls must be considered relative to their costs. Because of the inherent limitations in all control systems, no evaluation of controls can provide absolute assurance that all control issues and instances of fraud, if any, have been detected. Because of the inherent limitations in any control system, misstatements due to error or fraud may occur and not be detected.

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PART II. OTHER INFORMATION

Item 1. Legal Proceedings.

On December 21, 2015, Thermo Fisher Scientific, Inc. ("Thermo") filed a complaint in the Circuit Court for the County of Kalamazoo of Michigan against one of its former employees who had recently been hired by us alleging, among other claims, misappropriation of proprietary information and breach of contractual and fiduciary obligations to Thermo while still an employee of Thermo. On November 23, 2016, Thermo amended its complaint to add us as a party to the litigation, making various commercial and employment-related claims and seeking damages and injunctive relief. In July 2017, we entered into a settlement agreement with Thermo. Pursuant to the terms of the settlement agreement, we agreed to pay Thermo a one-time payment of $3.0 million in exchange for a release and dismissal of all claims with prejudice upon payment of the settlement. As a result of this settlement, in the second quarter of 2017, we accrued an additional $1.0 million of legal expense. This results in an accrued amount of $2.0 million as of June 30, 2017, net of a $1.0 million insurance recovery receivable related to this matter.

Additionally, in the normal course of business, we are from time to time involved in legal proceedings or potential legal proceedings, including matters involving employment, intellectual property, or others. Although the results of litigation and claims cannot be predicted with certainty, we currently believe that the final outcome of any currently pending matters would not have a material adverse effect on our business, operating results, financial condition, or cash flows. Regardless of the outcome, litigation can have an adverse impact on us because of defense and settlement costs, diversion of management resources, and other factors.

ITEM 1A. 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 Form 10-Q. 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 Fluidigm's Business and Strategy

Our financial results and revenue growth rates have varied significantly from quarter-to-quarter and year-to-year due to a number of factors and have decreased sequentially since 2014, and a significant variance in our operating results or rates of growth, if any, could lead to substantial volatility in our stock price.

Our total revenue was $104.4 million in 2016, $114.7 million in 2015, and $116.5 million in 2014. The decrease in overall revenue was due in significant part to decreasing sales of single-cell genomics instruments, driven by a combination of factors including changes in customer demand, increased competition, and performance issues in certain IFCs used in our C1 systems, partially offset by increased revenue from mass cytometry instruments. At the end of 2016, we began reallocating our resources based on revenue contribution and growth expectations across our target markets, including a reorganization of our sales team and commercial leadership. As part of this shift and due to our negative revenue growth in 2016 and 2015, we implemented certain operational efficiency and cost-savings initiatives beginning in the first quarter of 2017 intended to align our resources with our product strategy, reduce our operating expenses, and manage our cash flows. These cost efficiency initiatives include targeted workforce reductions, optimizing our facilities, and reducing excess space. In addition, we may need to decrease or defer capital expenditures and development activities to further optimize our operations. Such measures may impair our ability to invest in developing, marketing and selling new and existing products. The efficiency and cost-savings initiatives are expected to reduce operating expenses and enable us to efficiently align our resources in areas providing the greatest

benefit, but if our efficiency and cost reduction efforts are unsuccessful, our cash position could be negatively impacted and we may, among other things, be required to seek other sources of financing.

Our revenue, results of operations, and revenue growth rates have varied in the past and may continue to vary significantly from quarter-to-quarter or year-to-year. For example, in 2011, 2012, 2014 and 2015, we experienced higher sales in the fourth quarter than in the first quarter of the next fiscal year. Although this was not the case in the fourth quarter of 2013 compared to the first quarter of 2014, this seasonal historical trend continued in 2014 and 2015 with a decrease in revenue in the first quarters of 2015 and 2016, respectively. Sales, however, remained relatively flat in the first quarter of 2017 compared to the fourth quarter of 2016. Additionally, for the quarters ended March 31, 2015 and June 30, 2015, we experienced year-over-year revenue growth rates that were substantially lower than revenue growth rates experienced in other periods since our initial public offering, and we

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experienced a year-over-year decline in revenue for the quarters ended June 30, 2017, September 30, 2016, June 30, 2016, and September 30, 2015, and for the years ended December 31, 2016 and 2015. We may experience substantial variability in our product mix from period-to-period as revenue from sales of our instruments relative to sales of our consumables may fluctuate or deviate significantly from expectations. Variability in our quarterly or annual results of operations, mix of product revenue, or rates of revenue growth, if any, may lead to volatility in our stock price as research analysts and investors respond to these fluctuations. These fluctuations are due to numerous factors that are difficult to forecast, including: fluctuations in demand for our products; changes in customer budget cycles and capital spending; seasonal variations in customer operations; tendencies among some customers to defer purchase decisions to the end of the quarter; the large unit value of our systems, particularly our proteomics systems; changes in our pricing and sales policies or the pricing and sales policies of our competitors; our ability to design, manufacture, market, sell, and deliver products to our customers in a timely and cost-effective manner; fluctuations or reductions in revenue from sales of legacy instruments that may have contributed significant revenue in prior periods; quality control or yield problems in our manufacturing operations; our ability to timely obtain adequate quantities of the materials or components used in our products, which in certain cases are purchased through sole and single source suppliers; new product introductions and enhancements by us and our competitors; unanticipated increases in costs or expenses; our complex, variable and, at times, lengthy sales cycle; global economic conditions; and fluctuations in foreign currency exchange rates. Additionally, we have certain customers who have historically placed large orders in multiple quarters during a calendar year. A significant reduction in orders from one or more of these customers could adversely affect our revenue and operating results, and if these customers defer or cancel purchases or otherwise alter their purchasing patterns, our financial results and actual results of operations could be significantly impacted. Other unknown or unpredictable factors also could harm our results.

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

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

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

and Company, Bio-Rad Laboratories, Inc., Cellular Research, Inc. (now a part of Becton, Dickinson and Company), Danaher Corporation, Illumina, Inc., Life Technologies Corporation (now part of Thermo Fisher Scientific Inc.), LGC Limited, Luminex Corporation, Millipore Corporation, NanoString Technologies, Inc., PerkinElmer, Inc. (through its acquisition of Caliper Life Sciences, Inc.), RainDance Technologies, Inc. (acquisition by Bio-Rad Laboratories, Inc. pending), Roche Diagnostics Corporation, Sony Corporation, Thermo Fisher Scientific Inc., and WaferGen Bio-systems, Inc. have products that compete in certain segments of the market in which we sell our products. In addition, we have recently experienced increased competition in the single-cell genomics market, including new product releases from 10X Genomics, Inc. and WaferGen Bio-systems, Inc., as well as the acquisition of Cellular Research by Becton Dickinson and Company and an announced exclusive partnership between Illumina, Inc. and Bio-Rad Laboratories, Inc. In addition due to the release of our Imaging Mass Cytometry system, we now are exposed to competition from companies offering imaging-based systems, specialized reagents and/or services including Carl Zeiss Inc., Leica Biosystems, Nikon Corporation, Olympus America Inc., Roche Diagnostics Corporation, PerkinElmer, Inc. Agilent Technologies, Inc. and Neogenomics (Multiomyx).

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

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

The application of our technologies to high-throughput genomics, single-cell genomics and mass cytometry applications are emerging market opportunities. We believe these opportunities will take several years to develop or mature and we cannot be certain that these market opportunities will develop as we expect. The future growth of our markets and the success of our products depend on many factors beyond our control, including recognition and acceptance by the scientific community, and the growth, prevalence, and costs of competing methods of genetic and protein analysis. If the markets for mass cytometry, single-cell genomics and production genomics do not grow, our business may be adversely affected. Additionally, our success in these markets will depend to a large extent on our ability to successfully sell products using our technologies. If we are not able to 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 these markets.

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

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

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

We may encounter unforeseen situations in the manufacturing and assembly of our products that would result in delays or shortfalls in our production. For example, our production processes and assembly methods may have to change to accommodate any significant future expansion of our manufacturing capacity, which may increase our manufacturing costs, delay production of our products, reduce our product margin, and adversely impact our business.

Additionally, all of our IFCs for commercial sale are manufactured at our facility in Singapore. Production of the elastomeric block that is at the core of our IFCs is a complex process requiring advanced clean rooms, sophisticated equipment, and strict adherence to procedures. Any contamination of the clean room, equipment malfunction, or failure to strictly follow procedures can significantly reduce our yield in one or more batches. We have in the past experienced variations in yields due to

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such factors. A drop in yield can increase our cost to manufacture our IFCs or, in more severe cases, require us to halt the manufacture of our IFCs until the problem is resolved. Identifying and resolving the cause of a drop in yield can require substantial time and resources.

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

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

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

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

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

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

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

the reliability and performance of our products will be compromised.

If our products contain defects, we may experience:

- a failure to achieve market acceptance or expansion of our product sales;
- loss of customer orders and delay in order fulfillment;
- damage to our brand reputation;

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- 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 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.

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

We expect that our revenue in the foreseeable future will be derived primarily from sales of our systems and IFCs to academic institutions, clinical research laboratories that use our technology to develop tests, and biopharmaceutical, biotechnology, Ag-Bio companies and CRO's worldwide. Our success will depend upon their demand for and use of our products. Accordingly, the spending policies of these customers could have a significant effect on the demand for our technology. These policies may be based on a wide variety of factors, including concerns regarding any future federal government budget sequestrations, the availability of resources to make purchases, the spending priorities among various types of equipment, policies regarding spending during recessionary periods, and changes in the political climate. In addition, academic, governmental, and other research institutions that fund research and development activities may be subject to stringent budgetary constraints that could result in spending reductions, reduced allocations, or budget cutbacks, which could jeopardize the ability of these customers to purchase our products. Our operating results may fluctuate substantially due to reductions and delays in research and development expenditures by these customers. For example, reductions in capital and operating expenditures by these customers may result in lower than expected sales of our systems and IFCs. 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.

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

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

We manufacture all of our genomics analytical and preparatory instruments and integrated fluidic circuits, or IFCs, for commercial sale at our facility in Singapore, our mass cytometry instruments for commercial sale at our facility in Canada, and our assays and reagents for commercial sale at our facility in the United States. No other manufacturing facilities are currently available to us, particularly facilities of the size and scope required by our Singapore and Canada operations. Our facilities and the equipment we use to manufacture our instruments, IFCs, assays, and reagents would be costly to replace and could require substantial lead 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. If any of our facilities become unavailable to us, we cannot provide assurances that we will be able to secure a new manufacturing facility on acceptable terms, if at all. The inability to manufacture our products, combined with our limited inventory of manufactured supplies, may result in the loss of customers or harm our reputation, and we may be unable to reestablish relationships with those customers in the future. Although we possess insurance for damage to our property and the disruption of our business, this insurance may not be sufficient to cover all of our potential losses and may not continue to be available to us on acceptable terms, or at all. If our manufacturing capabilities are impaired, we may not be able to manufacture and ship our products in a timely manner, which would adversely impact our business.

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

During the six months ended June 30, 2017 and 2016, and the years ended December 31, 2016 and 2015, approximately 53%, 53%, 50% and 52%, respectively, of our product and service revenue was generated from sales to customers located outside of the United States. We believe that a significant percentage of our future revenue will come from international sources as we expand our international operations and develop opportunities in other countries. Engaging in international business inherently involves a number of difficulties and risks, including:

- required compliance with existing and changing foreign regulatory requirements and laws that are or may be applicable to our business in the future, such as the RoHS and WEEE directives, which regulate the use of certain hazardous substances in, and require the collection, reuse, and recycling of waste from, products we manufacture;
- required compliance with anti-bribery laws, such as the U.S. Foreign Corrupt Practices Act and U.K. Bribery Act, data privacy requirements, labor laws, and anti-competition regulations;
- export or import restrictions;
- laws and business practices favoring local companies;
- longer payment cycles and difficulties in enforcing agreements and collecting receivables through certain foreign legal systems;
- unstable economic, political, and regulatory conditions;

- potentially adverse tax consequences, tariffs, customs charges, bureaucratic requirements, and other trade barriers;
- difficulties and costs of staffing and managing foreign operations; and
- difficulties protecting or procuring intellectual property rights.

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

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

A majority of our product sales are currently denominated in U.S. dollars and fluctuations in the value of the U.S. dollar relative to foreign currencies could decrease demand for our products and adversely impact our financial performance. For example, if the value of the U.S. dollar increases relative to foreign currencies, our products could become more costly to the international consumer and therefore less competitive in international markets, or if the value of the U.S. dollar decreases relative to the Singapore dollar or the Canadian dollar, it would become more costly in U.S. dollars for us to manufacture our products in Singapore and/or in Canada. Additionally, our expenses are generally denominated in the currencies of the countries in which our operations are located, which is primarily in the United States, with a portion of expenses incurred in Singapore and Canada where a significant portion of our manufacturing operations are located. Our results of operations and cash flows are, therefore, subject to fluctuations due to changes in foreign currency exchange rates. The volatility of exchange rates depends on many factors that we cannot forecast with reliable accuracy. We have experienced and will continue to experience fluctuations in our net income or loss as a result of transaction gains or losses related to revaluing certain current asset and current liability balances that are denominated in currencies other than the functional currency of the entities in which they are recorded. For example, for the six months ended June 30, 2017 and for the years ended December 31, 2016 and 2015, we experienced foreign currency losses of nil, $1.5 million, and $1.6 million, respectively. Fluctuations in currency exchange rates could have an adverse impact on our financial results in the future.

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

We are dependent on single and sole source suppliers for some of the components and materials used in our products, and the loss of any of these suppliers could harm our business.

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

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

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

- The electron multiplier detector included in the Helios/CyTOF 2 systems and certain metal isotopes used with the Helios/CyTOF 2 systems are purchased from sole source suppliers.

- The movement stage included in the Imaging Mass Cytometer is purchased from a sole source supplier.

- The nickel sampler cone used with the Helios/CyTOF 2 systems is purchased from single source suppliers and is available from a limited number of sources.

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

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

- we may be subject to increased component or assembly costs;

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

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

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

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

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

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

We may not be able to develop new products or enhance the capabilities of our existing systems to keep pace with rapidly changing technology and customer requirements, which could have a material adverse effect on our business, revenue, financial condition, and operating results.

Our success depends on our ability to develop new products and applications for our technology in existing and new markets, while improving the performance and cost-effectiveness of our systems. New technologies, techniques, or products could emerge that might offer better combinations of price and performance than our current or future product lines and systems. Existing markets for our products, including high-throughput genomics, single-cell genomics and mass cytometry, as well as potential markets for our products such as high-throughput DNA sequencing and molecular applications, are characterized by rapid technological change and innovation. It is critical to our success for us to anticipate changes in technology and customer requirements and to successfully introduce new, enhanced, and competitive technology to meet our customers' and prospective customers' needs on a timely and cost-effective basis. Developing and implementing new technologies will require us to incur substantial development costs and we may not have adequate resources available to be able to successfully introduce new applications of, or enhancements

to, our systems. We cannot guarantee that we will be able to maintain technological advantages over emerging technologies in the future. While we typically plan improvements to our systems, we may not be able to successfully implement these improvements. If we fail to keep pace with emerging technologies, demand for our systems will not grow and may decline, and our business, revenue, financial condition, and operating results could suffer materially. In addition, if we introduce enhanced systems but fail to manage product transitions effectively, customers may delay or forgo purchases of our systems and our operating results may be adversely affected by product obsolescence and excess inventory. Even if we successfully implement some or all of these planned improvements, we cannot guarantee that our current and potential customers will find our enhanced systems to be an attractive alternative to existing technologies, including our current products.

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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 $16.9 million, $34.1 million, $76.0 million, and $53.3 million during the three and six months ended June 30, 2017 and for the years ended December 31, 2016, and 2015, respectively. As of June 30, 2017, we had an accumulated deficit of $473.8 million. These losses have resulted principally from costs incurred in our research and development programs, and from our manufacturing costs and selling, general, and administrative expenses. We believe that our continued investment in research and development, sales, and marketing is essential to our long-term competitive position and future growth. However, we recently implemented efficiency and cost-savings initiatives intended to stabilize our business operations and return to growth. These initiatives have included targeted workforce reductions and optimizing our facilities and excess space. They may also include decreasing or deferring capital expenditures and development activities. To the extent we are unable to invest sufficiently in these activities, it may impair our ability to develop, market and sell new and existing products. Until we are able to generate additional revenue to support our level of operating expenses, we will continue to incur operating and net losses and negative cash flow from operations. Because of the numerous risks and uncertainties associated with our commercialization efforts and future product development, we are unable to predict when we will become profitable, and we may never become profitable. Even if we do achieve profitability, we may not be able to sustain or increase our profitability.

If we require additional funds in the future, we may not be able to obtain such funds on acceptable terms, or at all. If we raise funds by issuing equity securities, including any issuances pursuant to our "at the market" equity offering program under our sales agreement with Cowen, our stockholders could experience dilution. Debt financing, if available, may involve covenants restricting our operations or our ability to incur additional debt. Any additional debt or equity financing that we raise may contain terms that are not favorable to us or our stockholders. If we do not have, or are not able to obtain sufficient funds, we may have to delay development or commercialization of our products or license to third parties the rights to commercialize products or technologies that we would otherwise seek to commercialize. We may also have to reduce marketing, customer support, research and development or other resources devoted to our products.

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

As of June 30, 2017, we had approximately $184.5 million of goodwill and net intangible assets, including approximately $104.1 million of goodwill and approximately $80.4 million of net intangible assets. These assets represent a significant portion of the assets recorded on our consolidated balance sheet and relate primarily to our acquisition of DVS Sciences, Inc., or DVS, in February 2014. In addition, if in the future we acquire additional businesses, technologies, or other intangible assets, a substantial portion of the value of such assets may be recorded as goodwill or intangible assets.

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

derived from our goodwill and intangible assets. We have recently experienced substantial declines in our stock price, and continued weakness or further declines in our stock price increase the likelihood that we may be required to recognize impairment charges. Any impairment charges could have a material adverse effect on our operating results and net asset value in the quarter in which we recognize the impairment charge. We cannot provide assurances that we will not in the future be required to recognize impairment charges.

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

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

Additionally, to expand our research and product development efforts, we need 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.

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

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

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

Our products, our Biomark, EP1, and Helios/CyTOF 2 systems in particular, must be used in conjunction with one or more reagents designed to produce or facilitate the particular biological or chemical reaction desired by the user. Many of these reagents are highly specialized and available to the user only from a single supplier or a limited number of suppliers. Although we sell reagents for use with certain of our products, our customers may purchase these reagents directly from third-party suppliers, and we have no control over the supply of those materials. In addition, our products are designed to work with these reagents as they are currently formulated. We have no control over the formulation of reagents sold by third-party suppliers, and the performance of our products might be adversely affected if the formulation of these reagents is changed. If one or more of these reagents were to become unavailable or were reformulated, our ability to market and sell our products could be materially and adversely affected.

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

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

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

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

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

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

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

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

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

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

If the FDA modifies its approach to our products labeled and intended for RUO, or otherwise determines our products or related applications should be subject to additional regulation as in vitro diagnostic devices based upon customers'

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

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

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

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

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

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

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

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. We have continued to experience losses and, if that trend continues, we may need to seek additional sources of financing. In addition, we may need to raise substantial additional capital for various purposes, including:

- expanding the commercialization of our products;
- funding our operations;
- furthering our research and development; and
- acquiring other businesses or assets and licensing technologies.

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

- market acceptance of our products;
- the cost of our research and development activities;
- the cost of filing and prosecuting patent applications;
- the cost of defending any litigation including intellectual property, employment, contractual or other litigation;
- the cost and timing of regulatory clearances or approvals, if any;
- the cost and timing of establishing additional sales, marketing, and distribution capabilities;
- the cost and timing of establishing additional technical support capabilities;
- the effectiveness of our recent efficiency and cost-savings initiatives;
- the effect of competing technological and market developments; and
- the extent to which we acquire or invest in businesses, products, and technologies, although we currently have no commitments or agreements relating to any of these types of transactions.

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 additional debt or equity financing that we raise may contain terms that are not favorable to us or our stockholders. If we raise additional funds through collaboration and licensing arrangements with third parties, it may be necessary to relinquish some rights to our technologies or our products, or grant licenses on terms that are not favorable to us. If we are unable to raise adequate funds, we may have to liquidate some or all of our assets, delay development or commercialization of our products, or license to third parties the rights to commercialize products or 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.

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

We are subject to income taxes in both the United States and certain foreign jurisdictions. Significant judgments based on interpretations of existing tax laws or regulations are required in determining the provision for income taxes. For example, we have made certain interpretations of existing tax laws or regulations based upon the operations of our business internationally and we have implemented intercompany agreements based upon these interpretations and related transfer pricing analyses. If the U.S. Internal Revenue Service or other taxing authorities disagree with the positions, our effective income tax rate could be adversely affected and we could have additional tax liability, including interest and penalties. We recently completed a review of our European corporate structure and tax positions and, based upon our existing business operations, we plan to restructure our European intercompany transactions, which is likely to increase our income tax liability. From time to time, we may review our corporate structure and tax positions in other international jurisdictions and such review may result in additional changes to how we structure our

international business operations, which may adversely impact our effective income tax rate. Our effective income tax rate could also be adversely affected by changes in the mix of earnings in tax jurisdictions with different statutory tax rates, changes in the valuation of deferred tax assets and liabilities, changes in existing tax laws or tax rates, changes in the level of non-deductible expenses (including share-based compensation), changes in our future levels of research and development spending, mergers and acquisitions, or the result of examinations by various tax authorities. Payment of additional amounts upon final adjudication of any disputes could have a material impact on our results of operations and financial position.

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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 in recent years experienced volatility and disruptions, including diminished liquidity and credit availability, increased concerns about inflation and deflation, and the downgrade of U.S. debt and exposure risks on other sovereign debts, decreased consumer confidence, lower economic growth, volatile energy costs, increased unemployment rates, and uncertainty about economic stability. Volatility and disruption of financial markets could limit our customers' ability to obtain adequate financing or credit to purchase and pay for our products in a timely manner or to maintain operations, which could result in a decrease in sales volume that could harm our results of operations. General concerns about the fundamental soundness of domestic and international economies may also cause our customers to reduce their purchases. Changes in governmental banking, monetary, and fiscal policies to address liquidity and increase credit availability may not be effective. Significant government investment and allocation of resources to assist the economic recovery of sectors which do not include our customers may reduce the resources available for government grants and related funding for life science, Ag-Bio, and clinical research and development. Continuation or further deterioration of these financial and macroeconomic conditions could significantly harm our sales, profitability, and results of operations.

If we are unable to integrate future acquisitions successfully, our operating results and prospects could be harmed.

In addition to our acquisition of DVS, we may make additional 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. Our acquisition of DVS was our first acquisition of another company. Any merger or acquisition we may pursue would involve numerous risks, including but not limited to the following:

- difficulties in integrating and managing the operations, technologies, and products of the companies we acquire;
- diversion of our management's attention from normal daily operation of our business;
- our inability to maintain the key business relationships and the reputations of the businesses we acquire;
- our inability to retain key personnel of the acquired company;
- uncertainty of entry into markets in which we have limited or no prior experience and in which competitors have stronger market positions;
- our dependence on unfamiliar affiliates and customers of the companies we acquire;
- insufficient revenue to offset our increased expenses associated with acquisitions;
- our responsibility for the liabilities of the businesses we acquire, including those which we may not anticipate; and
- our inability to maintain internal standards, controls, procedures, and policies.

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.

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

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

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

We have considered implementing a company-wide ERP system to handle the business and financial processes within our operations and corporate functions. ERP implementations are complex and time-consuming projects that involve substantial expenditures on system software and implementation activities that can continue for several years. ERP implementations also require transformation of business and financial processes in order to reap the benefits of the ERP system. If we decide to implement a company-wide ERP system, our business and results of operations could be adversely affected if we experience operating problems and/or cost overruns during the ERP implementation process, or if the ERP system and the associated process changes do not give rise to the benefits that we expect. If we do not effectively implement the ERP system as planned or if the system does not operate as intended, our business, results of operations, and internal controls over financial reporting could be adversely affected.

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

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

For example, the U.S.-based Financial Accounting Standards Board, referred to as FASB, is currently working together with the International Accounting Standards Board, referred to IASB, on several projects to further align accounting principles and facilitate more comparable financial reporting between companies who are required to follow U.S. GAAP under SEC regulations and those who are required to follow International Financial Reporting Standards outside of the United States. These efforts by the FASB and IASB may result in different accounting principles under U.S. GAAP that may result in materially different financial results for us in areas including, but not limited to, principles for recognizing revenue and lease accounting. Additionally, significant changes to U.S. GAAP resulting from the FASB's and IASB's efforts may require that we change how we process, analyze and report financial information and that we change financial reporting controls. Additionally, the FASB issued new guidance relating to Revenue from Contracts with Customers which supersedes nearly all existing U.S. GAAP revenue recognition guidance. The new guidance will be effective for our fiscal year 2018. The new revenue guidance may be applied retrospectively to each prior period presented or retrospectively with the cumulative effect recognized as of the date of adoption. While we have not completed our assessment of the new revenue guidance, we currently expect that this new guidance will not have a material impact on our consolidated financial statements. As we complete the evaluation of this new guidance, new information may arise that could change our current understanding of the impact to revenue

and expense recognized. Additionally, we will continue to monitor industry activities and any additional guidance provided by regulators, standards setters, or the accounting profession and adjust our assessment and implementation plans accordingly.

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

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

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

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

We believe that these tax benefits are a valuable asset for us. On November 21, 2016, our board of directors approved a tax benefit preservation plan, or Tax Benefit Preservation Plan, in an effort to protect our tax benefits during the effective period of the tax benefit preservation plan. Our board of directors elected to let the Tax Benefit Preservation Plan expire in August 2017 based on its determination, in consultation with our management and tax advisors, that our NOLs were not at material risk of limitation based on an ownership change pursuant to Section 382. Our board of directors will continue to monitor our NOLs, however, and could elect to adopt a similar plan if it believes a potential risk exists that our NOLs could be limited. Any future tax benefit preservation plan could make it more difficult for a third party to acquire, or could discourage a third party from acquiring, us or a large block of our common stock.

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Risks Related to Intellectual Property

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

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

Furthermore, the laws of some foreign countries may not protect our intellectual property rights to the same extent as do the laws of the United States, and many companies have encountered significant problems in protecting and defending such rights in foreign jurisdictions. Proceedings to enforce our patent rights in foreign jurisdictions could result in substantial cost and divert our efforts and attention from other aspects of our business. Changes in either the patent laws or in interpretations of patent laws in the United States or other countries may diminish the value of our intellectual property. We cannot predict the breadth of claims that may be allowed or enforced in our patents or in third-party patents. For example:

- We might not have been the first to make the inventions covered by each of our pending patent applications;
- We might not have been the first to file patent applications for these inventions;
- The patents of others may have an adverse effect on our business; and
- Others may independently develop similar or alternative products and technologies or duplicate any of our products and technologies.

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

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

Litigation may be necessary for us to enforce our patent and proprietary rights, determine the scope, coverage, and validity of others' proprietary rights, and/or defend against third party claims of intellectual property infringement against us as well as against our suppliers, distributors, customers, and other entities with whom we do business. Litigation could result in substantial legal fees and could adversely affect the scope of our patent protection. The outcome of any litigation or other proceeding is inherently uncertain and might not be favorable to us, and we might

not be able to obtain licenses to technology that we require. Even if such licenses are obtainable, they may not be available at a reasonable cost. We could therefore incur substantial costs related to royalty payments for licenses obtained from third parties, which could negatively affect our product margins or financial position. Further, we could encounter delays in product introductions, or interruptions in product sales, as we develop alternative methods or products.

As we move into new markets and applications for our products, incumbent participants in such markets may assert their patents and other proprietary rights against us as a means of impeding our entry into such markets or as a means to extract substantial license and royalty payments from us. Our commercial success may depend in part on our non-infringement of the patents or proprietary rights of third parties. Numerous significant intellectual property issues have been litigated, and will likely continue to be litigated, between existing and new participants in our existing and targeted markets. For example, some of our products provide for the testing and analysis of genetic material, and patent rights relating to genetic materials remain a developing area of patent law. A recent U.S. Supreme Court decision held, among other things, that claims to isolated genomic

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DNA occurring in nature are not patent eligible, while claims relating to synthetic DNA may be patent eligible. We expect the ruling will result in additional litigation in our industry. In addition, third parties may assert that we are employing their proprietary technology without authorization. For example, on June 4, 2008 we received a letter from Applied Biosystems, Inc., a wholly-owned subsidiary of Life Technologies Corporation (now part of Thermo Fisher Scientific Inc. and collectively referred to as Life), 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 license agreements with Life which, among other matters, granted us a non-exclusive license to the '934 patent and its foreign counterparts.

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

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

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

We depend on certain technologies that are licensed to us. We do not control these technologies and any loss of our rights to them could prevent us from selling our products, which would have an adverse effect on our business.

We rely on licenses in order to be able to use various proprietary technologies that are material to our business, including our core IFC, multi-layer soft lithography, and mass cytometry technologies. In some cases, we do not control the prosecution, maintenance, or filing of the patents to which we hold licenses, or the enforcement of these patents against third parties. Additionally, our business and product development plans anticipate and may substantially depend on future in-license agreements with additional third parties, some of which are currently in the early discussion phase. For example, Fluidigm Canada Inc., or Fluidigm Canada, an Ontario corporation and wholly-owned subsidiary of Fluidigm Sciences, was party to an interim license agreement, now expired, with

Nodality, Inc., or Nodality, under which Nodality granted Fluidigm Canada a worldwide, non-exclusive, research use only, royalty bearing license to certain cytometric reagents, instruments, and other products. While we were able to secure a license under a new license agreement with Nodality, we cannot provide assurances that we will always be able to obtain suitable license rights to technologies or intellectual property of other third parties on acceptable terms, if at all.

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

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

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

We are subject to certain U.S. government regulations because we have licensed technologies that were developed with U.S. government grants. In accordance with these regulations, these licenses provide that products embodying the technologies are subject to domestic manufacturing requirements. If this domestic manufacturing requirement is not met, the government agency that funded the relevant grant is entitled to exercise specified rights, referred to as “march-in rights,” which if exercised would allow the government agency to require the licensors or us to grant a non-exclusive, partially exclusive, or exclusive license in any field of use to a third party designated by such agency. All of our microfluidic systems revenue is dependent upon the availability of our IFCs, which incorporate technology developed with U.S. government grants. All of our instruments, including microfluidic systems, and IFCs 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, the sole licensor subject to the requirement applied for a waiver of the domestic manufacturing requirement with respect to the relevant patents licensed to us by this licensor. In July 2009, the funding government agency granted the requested waiver of the domestic manufacturing requirement for a three-year period commencing in July 2009. In June 2012, the licensor requested a continued waiver of the domestic manufacturing requirement with respect to the relevant patents, but the government agency has not yet taken any action in response to this request. If the government agency does not grant the requested waiver or the government fails to grant additional waivers of such requirement that may be sought in the future, then the U.S. government could exercise its march-in rights with respect to the relevant patents licensed to us. In addition, the license agreement under which the relevant patents are licensed to us contains provisions that obligate us to comply with this domestic manufacturing requirement. We are not currently manufacturing instruments and IFCs in the United States that incorporate the relevant licensed technology. If our lack of compliance with this provision constituted a material breach of the license agreement, the license of the relevant patents could be terminated or we could be compelled to relocate our manufacturing of microfluidic systems and IFCs to the United States to avoid or cure a material breach of the license agreement. Any of the exercise of march-in rights, the termination of our license of the relevant patents or the relocation of our manufacturing of microfluidic systems and

IFCs to the United States could materially adversely affect our business, operations and financial condition.

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

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

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

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

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

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Risks Related to Our 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 who hold substantial blocks of our stock. As of June 30, 2017, we had 29,414,727 shares of common stock outstanding, and stockholders holding at least 5% of our stock, individually or with affiliated persons or entities, collectively beneficially owned or controlled approximately 57.1% 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 CRO sectors;
- failure to complete significant sales;
- manufacturing disruptions that could occur if we were unable to successfully expand our production in our current or an alternative facility;
- any future sales of our common stock or other securities in connection with raising additional capital or otherwise;
- any major change to the composition of our board of directors or management; and
- general economic conditions and slow or negative growth of our markets.

The stock market in general, and market prices for the securities of technology-based companies like ours in particular, have from time to time experienced volatility that often has been unrelated to the operating performance of

the underlying companies. These broad market and industry fluctuations may adversely affect the market price of our common stock regardless of our operating performance. In several recent situations where the market price of a stock has been volatile, holders of that stock have instituted securities class action litigation against the company that issued the stock. If any of our stockholders were to bring a lawsuit against us, the defense and disposition of the lawsuit could be costly and divert the time and attention of our management and harm our operating results.

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

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

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

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

- authorize our board of directors to issue, without further action by the stockholders, up to 10,000,000 shares of undesignated preferred stock;
- require that any action to be taken by our stockholders be effected at a duly called annual or special meeting and not by written consent;
- specify that special meetings of our stockholders can be called only by our board of directors, the chairman of the board, the chief executive officer or the president;
- establish an advance notice procedure for stockholder approvals to be brought before an annual meeting of our stockholders, including proposed nominations of persons for election to our board of directors;
- establish that our board of directors is divided into three classes, Class I, Class II, and Class III, with each class serving staggered three year terms;
- provide that our directors may be removed only for cause;
- 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 will have broad discretion over the use of the proceeds to us from our “at the market” equity offering program and may apply the proceeds to uses that do not improve our operating results or the value of your

securities.

We will have broad discretion to use the net proceeds to us from our “at the market” equity offering program, and investors will be relying solely on the judgment of our board of directors and management regarding the application of these proceeds. Although we expect to use the net proceeds from our “at the market” equity offering program for general corporate purposes and working capital, we have not allocated these net proceeds for specific purposes. Investors will not have the opportunity, as part of their investment decision, to assess whether the proceeds are being used appropriately. Our use of the proceeds may not improve our operating results or increase the value of the securities offered pursuant to the “at the market” equity offering program.

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

We have paid no cash dividends on any of our classes of capital stock to date and currently intend to retain our future earnings to fund the development and growth of our business. In addition, we may become subject to covenants under future debt arrangements that place restrictions on our ability to pay dividends. As a result, capital appreciation, if any, of our common stock will be stockholders' sole source of gain for the foreseeable future.

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Risks Related to Our Outstanding 2.75% Senior Convertible Notes due 2034

Our outstanding 2.75% senior convertible notes due 2034 are effectively subordinated to our secured debt and any liabilities of our subsidiaries.

Our outstanding 2.75% senior convertible notes due 2034, which we refer to as our "notes", rank:

- senior in right of payment to any of our indebtedness that is expressly subordinated in right of payment to the notes;
- equal in right of payment to all of our liabilities that are not so subordinated;
- effectively junior in right of payment to any of our secured indebtedness to the extent of the value of the assets securing such indebtedness; and
- structurally junior to all indebtedness and other liabilities (including trade payables) of our subsidiaries.

In February 2014, we completed our offering of notes with an aggregate outstanding principal amount of $201.3 million. In the event of our bankruptcy, liquidation, reorganization, or other winding up, our assets that secure debt ranking senior in right of payment to the notes will be available to pay obligations on the notes only after the secured debt has been repaid in full from these assets, and the assets of our subsidiaries will be available to pay obligations on the notes only after all claims senior to the notes have been repaid in full. There may not be sufficient assets remaining to pay amounts due on any or all of the notes then outstanding. The indenture governing the notes does not prohibit us from incurring additional senior debt or secured debt, nor does it prohibit our subsidiaries from incurring additional liabilities.

The notes are our obligations only and some of our operations are conducted through, and a portion of our consolidated assets are held by, our subsidiaries.

The notes are our obligations exclusively and are not guaranteed by any of our operating subsidiaries. A portion of our consolidated assets is held by our subsidiaries. Accordingly, our ability to service our debt, including the notes, depends in part on the results of operations of our subsidiaries and upon the ability of such subsidiaries to provide us with cash, whether in the form of dividends, loans, or otherwise, to pay amounts due on our obligations, including the notes. Our subsidiaries are separate and distinct legal entities and have no obligation, contingent or otherwise, to make payments on the notes or to make any funds available for that purpose. In addition, dividends, loans, or other distributions to us from such subsidiaries may be subject to contractual and other restrictions and are subject to other business and tax considerations.

Recent and future regulatory actions and other events may adversely affect the trading price and liquidity of the notes.

We expect that many investors in, and potential purchasers of, the notes will employ, or seek to employ, a convertible arbitrage strategy with respect to the notes. Investors would typically implement such a strategy by selling short the common stock underlying the notes and dynamically adjusting their short position while continuing to hold the notes. Investors may also implement this type of strategy by entering into swaps on our common stock in lieu of or in addition to short selling the common stock. As a result, any specific rules regulating equity swaps or short selling of securities or other governmental action that interferes with the ability of market participants to effect short sales or equity swaps with respect to our common stock could adversely affect the ability of investors in, or potential purchasers of, the notes to conduct the convertible arbitrage strategy that we believe they will employ, or seek to employ, with respect to the notes. This could, in turn, adversely affect the trading price and liquidity of the notes.

The SEC and other regulatory and self-regulatory authorities have implemented various rules and taken certain actions, and may in the future adopt additional rules and take other actions, that may impact those engaging in short selling activity involving equity securities (including our common stock). Such rules and actions include Rule 201 of SEC Regulation SHO, the adoption by the Financial Industry Regulatory Authority, Inc. and the national securities exchanges of a “Limit Up-Limit Down” program, the imposition of market-wide circuit breakers that halt trading of securities for certain periods following specific market declines, and the implementation of certain regulatory reforms required by the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010. Although the direction and magnitude of the effect that Regulation SHO, FINRA, securities exchange rule changes, and implementation of the Dodd-Frank Act may have on the trading price and the liquidity of the notes will depend on a variety of factors, many of which cannot be determined at the date of this report, past regulatory actions (such as certain emergency orders issued by the SEC in 2008 prohibiting short sales of stock of certain financial services companies) have had a significant impact

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on the trading prices and liquidity of convertible debt instruments. Any governmental or regulatory action that restricts the ability of investors in, or potential purchasers of, the notes to effect short sales of our common stock, borrow our common stock, or enter into swaps on our common stock or increases the costs of implementing an arbitrage strategy could adversely affect the trading price and the liquidity of the notes.

Volatility in the market price and trading volume of our common stock could adversely impact the trading price of the notes.

The stock market in recent years has experienced significant price and volume fluctuations that have often been unrelated to the operating performance of companies. The market price of our common stock could fluctuate significantly for many reasons, including in response to the risks described in this report, or for reasons unrelated to our operations, such as reports by industry analysts, investor perceptions or negative announcements by our customers, competitors or suppliers regarding their own performance, as well as industry conditions and general financial, economic and political instability. The market price of our common stock could also decline as a result of sales of a large number of shares of our common stock in the market, particularly sales by our directors, executive officers, employees, and significant stockholders, and the perception that these sales could occur may also depress the market price of our common stock. A decrease in the market price of our common stock would likely adversely impact the trading price of the notes. The market price of our common stock could also be affected by possible sales of our common stock by investors who view the notes as a more attractive means of equity participation in us and by hedging or arbitrage trading activity that we expect to develop involving our common stock. This trading activity could, in turn, affect the trading price of the notes.

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

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

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

Holders of the notes have the right to require us to repurchase all or a portion of their notes on certain dates or upon the occurrence of a fundamental change at a repurchase price equal to 100% of the principal amount of the notes to be repurchased, plus accrued and unpaid interest, if any. We may not have enough available cash or be able to obtain financing at the time we are required to make repurchases of notes surrendered therefor.

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

Holders of notes are not entitled to any rights with respect to our common stock, but they are subject to all changes made with respect to them to the extent our conversion obligation includes shares of our common stock.

Holders of notes are not entitled to any rights with respect to our common stock (including, without limitation, voting rights and rights to receive any dividends or other distributions on our common stock) prior to the conversion date with respect to any notes they surrender for conversion, but they are subject to all changes affecting our common stock. For example, if an amendment is proposed to our certificate of incorporation or bylaws requiring stockholder approval and the record date for determining the stockholders of record entitled to vote on the amendment occurs prior to the conversion date with respect to any notes surrendered for conversion, then the holder surrendering such notes will not be entitled to vote on the amendment, although such holder will nevertheless be subject to any changes affecting our common stock.

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We have made only limited covenants in the indenture governing the notes, and these limited covenants may not protect a noteholder's investment.

The indenture governing the notes does not:

- require us to maintain any financial ratios or specific levels of net worth, revenues, income, cash flows, or liquidity and, accordingly, does not protect holders of the notes in the event that we experience adverse changes in our financial condition or results of operations;
- limit our subsidiaries' ability to guarantee or incur indebtedness that would rank structurally senior to the notes;
- limit our ability to incur additional indebtedness, including secured indebtedness;
- restrict our subsidiaries' ability to issue securities that would be senior to our equity interests in our subsidiaries and therefore would be structurally senior to the notes;
- restrict our ability to repurchase our securities;
- restrict our ability to pledge our assets or those of our subsidiaries; or
- restrict our ability to make investments or pay dividends or make other payments in respect of our common stock or our other indebtedness.

Furthermore, the indenture governing the notes contains only limited protections in the event of a change of control. We could engage in many types of transactions, such as acquisitions, refinancings, or certain recapitalizations, that could substantially affect our capital structure and the value of the notes and our common stock but may not constitute a "fundamental change" that permits holders to require us to repurchase their notes or a "make-whole fundamental change" that permits holders to convert their notes at an increased conversion rate. For these reasons, the limited covenants in the indenture governing the notes may not protect a noteholder's investment in the notes.

The increase in the conversion rate for notes converted in connection with a make-whole fundamental change or provisional redemption may not adequately compensate noteholders for any lost value of the notes as a result of such transaction or redemption.

If a make-whole fundamental change occurs prior to February 6, 2021 or upon our issuance of a notice of provisional redemption, under certain circumstances, we will increase the conversion rate by a number of additional shares of our common stock for notes converted in connection with such events. The increase in the conversion rate for notes converted in connection with such events may not adequately compensate noteholders for any lost value of the notes as a result of such transaction or redemption. In addition, if the price of our common stock in the transaction is greater than $180.00 per share or less than $39.96 per share (in each case, subject to adjustment), no additional shares will be added to the conversion rate. Moreover, in no event will the conversion rate per $1,000 principal amount of notes as a result of this adjustment exceed 25.0250 shares of common stock, subject to adjustment.

Our obligation to increase the conversion rate for notes converted in connection with such events could be considered a penalty, in which case the enforceability thereof would be subject to general principles of reasonableness and equitable remedies.

The conversion rate of the notes may not be adjusted for all dilutive events.

The conversion rate of the notes is subject to adjustment for certain events, including, but not limited to, the issuance of certain stock dividends on our common stock, the issuance of certain rights or warrants, subdivisions, combinations, distributions of capital stock, indebtedness, or assets, cash dividends and certain issuer tender or exchange offers. However, the conversion rate will not be adjusted for other events, such as a third-party tender or exchange offer or an issuance of common stock for cash, that may adversely affect the trading price of the notes or our common stock. An event that adversely affects the value of the notes may occur, and that event may not result in an adjustment to the conversion rate.

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Some significant restructuring transactions may not constitute a fundamental change, in which case we would not be obligated to offer to repurchase the notes.

Upon the occurrence of a fundamental change, a holder of notes has the right to require us to repurchase the notes. However, the fundamental change provisions will not afford protection to holders of notes in the event of other transactions that could adversely affect the notes. For example, transactions such as leveraged recapitalizations, refinancings, restructurings, or acquisitions initiated by us may not constitute a fundamental change requiring us to repurchase the notes. In the event of any such transaction, the holders would not have the right to require us to repurchase the notes, even though each of these transactions could increase the amount of our indebtedness, or otherwise adversely affect our capital structure or any credit ratings, thereby adversely affecting the holders of notes.

In addition, absent the occurrence of a fundamental change or a make-whole fundamental change as described under changes in the composition of our board of directors will not provide holders with the right to require us to repurchase the notes or to an increase in the conversion rate upon conversion.

We cannot assure noteholders that an active trading market will develop or be maintained for the notes.

We do not intend to apply to list our outstanding convertible notes on any securities exchange or to arrange for quotation on any automated dealer quotation system. In addition, the liquidity of the trading market in the notes and the market price quoted for the notes may be adversely affected by changes in the overall market for this type of security and by changes in our financial performance or prospects or in the prospects for companies in our industry generally. As a result, we cannot assure noteholders that an active trading market will develop or be maintained for the notes. If an active trading market does not develop or is not maintained, the market price and liquidity of the notes may be adversely affected. In that case, noteholders may not be able to sell the notes at a particular time or at a favorable price.

Any adverse rating of the notes may cause their trading price to fall.

We do not intend to seek a rating on the notes. However, if a rating service were to rate the notes and if such rating service were to lower its rating on the notes below the rating initially assigned to the notes or otherwise announces its intention to put the notes on credit watch, the trading price of the notes could decline.

Holders of notes may be subject to tax if we make or fail to make certain adjustments to the conversion rate of the notes even though they do not receive a corresponding cash distribution.

The conversion rate of the notes is subject to adjustment in certain circumstances, including the payment of cash dividends. If the conversion rate is adjusted as a result of a distribution that is taxable to our common stockholders, such as a cash dividend, a noteholder may be deemed to have received a dividend subject to U.S. federal income tax without the receipt of any cash. In addition, a failure to adjust (or to adjust adequately) the conversion rate after an event that increases a noteholder's proportionate interest in us could be treated as a deemed taxable dividend to you. If a make-whole fundamental change occurs prior to February 6, 2021 or we provide notice of a provisional redemption, under some circumstances, we will increase the conversion rate for notes converted in connection with the make-whole fundamental change or provisional redemption. Such increase may also be treated as a distribution subject to U.S. federal income tax as a dividend. For a non-U.S. holder, any deemed dividend would be subject to U.S. federal withholding tax at a 30% rate, or such lower rate as may be specified by an applicable treaty, which may be set off against subsequent payments on the notes.

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

Any conversion of some or all of the notes will dilute the ownership interests of our existing stockholders. Any sales in the public market of our common stock issuable upon such conversion could adversely affect prevailing market prices of our common stock. In addition, the existence of the notes may encourage short selling by market participants because the conversion of the notes could depress the price of our common stock.

Item 5. Other Information.

None.

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Item 6. Exhibits.

Exhibit Number	Description	Incorporated by Reference From Form	Incorporated by Reference From Exhibit Number	Date Filed
1.1	Sales Agreement, dated as of August 3, 2017, between Fluidigm Corporation and Cowen and Company, LLC.	8-K	1.1	8/3/2017
3.1	Eighth Amended and Restated Certificate of Incorporation of Fluidigm Corporation filed on February 15, 2011.	10-K	3.1	3/28/2011
3.2	Certificate of Designation of Rights, Preferences and Privileges of Series A Participating Preferred Stock.	8-K	3.1	11/22/2016
3.3	Certificate of Elimination.	8-K	3.1	8/2/2017
4.1	Specimen Common Stock Certificate of Fluidigm Corporation.	S-8	4.1	8/3/2017
10.1*	Fluidigm Corporation 2017 Employee Stock Purchase Plan.	8-K	10.1	8/2/2017
10.2*	Amendments to the Fluidigm Corporation 2011 Equity Incentive Plan, 2009 Equity Incentive Plan, and 1999 Stock Option Plan and the DVS Sciences, Inc. 2010 Equity Incentive Plan.	8-K	10.2	8/2/2017
10.3	Eighth Amendment to Lease Agreement between ARE-San Francisco No. 17, LLC and Fluidigm Corporation, dated August 2, 2017.	8-K	10.1	8/3/2017
31.1	Certification Pursuant to 18 U.S.C. Section 1350, as Adopted Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002 of Chief Executive Officer	Filed herewith		
31.2	Certification Pursuant to 18 U.S.C. Section 1350, as Adopted Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002 of Chief Financial Officer	Filed herewith		
32.1(1)	Certification Pursuant to 18 U.S.C. Section 1350, as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002 of Chief Executive Officer	Furnished herewith		
32.2(1)	Certification Pursuant to 18 U.S.C. Section 1350, as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002 of Chief Financial Officer	Furnished herewith		
101.INS	XBRL Instance Document	Filed herewith		
101.SCH	XBRL Taxonomy Extension Schema Document	Filed herewith		

101.CAL	XBRL Taxonomy Extension Calculation Linkbase Document	Filed herewith
101.LAB	XBRL Taxonomy Extension Label Linkbase Document	Filed herewith
101.PRE	XBRL Taxonomy Extension Presentation Linkbase Document	Filed herewith
101.DEF	XBRL Taxonomy Extension Definition Linkbase Document	Filed herewith

* Indicates a management contract or compensatory plan.

(1) In accordance with Item 601(b)(32)(ii) of Regulation S-K and SEC Release No. 33-8238 and 34-47986, Final Rule: Management's Reports on Internal Control Over Financial Reporting and Certification of Disclosure in Exchange Act Periodic Reports, the certifications furnished in Exhibits 32.1 and 32.2 hereto are deemed to accompany this Form 10-Q and will not be deemed "filed" for purposes of Section 18 of the Exchange Act. Such certifications will not be deemed to be incorporated by reference into any filings under the Securities Act or the Exchange Act, except to the extent that the registrant specifically incorporates it by reference.

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SIGNATURES

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

FLUIDIGM CORPORATION

Dated: August 8, 2017

By: /s/ Stephen Christopher Linthwaite
Stephen Christopher Linthwaite
President and Chief Executive Officer

Dated: August 8, 2017

By: /s/ Vikram Jog
Vikram Jog
Chief Financial Officer

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