PACIFIC BIOSCIENCES OF CALIFORNIA, INC.
Form 10-Q
August 02, 2017
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UNITED STATES

SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

Form 10-Q

(Mark One)

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

For the quarterly period ended 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 001-34899

Pacific Biosciences of California, Inc.

(Exact name of registrant as specified in its charter)

Delaware	16-1590339
(State or other jurisdiction of	(I.R.S. Employer

incorporation or organization)	Identification No.)
1305 O'Brien Drive	
Menlo Park, CA 94025	94025
(Address of principal executive offices)	(Zip Code)

(650) 521-8000

(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 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 (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes No

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company" and "emerging growth company" in Rule 12b-2 of the Exchange Act. (Check one):

Large accelerated filer		Accelerated filer
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.

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

Number of shares outstanding of the issuer's common stock as of July 31, 2017: 115,591,469

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PART I. FINANCIAL INFORMATION

Item 1.Financial Statements

PACIFIC BIOSCIENCES OF CALIFORNIA, INC.

Condensed Consolidated Balance Sheets

(Unaudited)

(in thousands, except per share amounts)	June 30, 2017	December 31, 2016
Assets		
Current assets		
Cash and cash equivalents	$ 36,478	$ 16,765
Investments	66,118	55,213
Accounts receivable	9,525	11,421
Inventory	17,266	15,634
Prepaid expenses and other current assets	3,545	9,978
Total current assets	132,932	109,011
Property and equipment, net	40,289	14,560
Long-term restricted cash	4,500	4,500
Other long-term assets	184	9,813
Total assets	$ 177,905	$ 137,884
Liabilities and Stockholders' Equity		
Current liabilities		
Accounts payable	$ 6,514	$ 8,359
Accrued expenses	17,840	16,604
Deferred service revenue, current	6,782	7,130
Other liabilities, current	1,915	1,681
Notes payable, current	2,643	—
Total current liabilities	35,694	33,774
Deferred service revenue, non-current	1,296	1,297
Deferred rent, non-current	14,599	19
Other liabilities, non-current	—	1,664
Notes payable, non-current	10,441	16,106
Financing derivative	15	356
Total liabilities	62,045	53,216

Commitments and contingencies (Note 7)

Stockholders' equity		
Preferred Stock, $0.001 par value:		
Authorized 50,000 shares; No shares issued or outstanding	—	—
Common Stock, $0.001 par value:		
Authorized 1,000,000 shares; Issued and outstanding 115,562 and 92,677 shares at June 30, 2017 and December 31, 2016, respectively	116	93
Additional paid-in-capital	952,710	872,114
Accumulated other comprehensive income (loss)	(16)	5
Accumulated deficit	(836,950)	(787,544)
Total stockholders' equity	115,860	84,668
Total liabilities and stockholders' equity	$ 177,905	$ 137,884

See accompanying notes to the condensed consolidated financial statements.

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PACIFIC BIOSCIENCES OF CALIFORNIA, INC.

Condensed Consolidated Statements of Operations and Comprehensive Loss

(Unaudited)

(in thousands, except per share amounts)	Three-Month Periods Ended June 30, 2017	2016	Six-Month Periods Ended June 30, 2017	2016
Revenue:				
Product revenue	$ 16,548	$ 13,587	$ 37,842	$ 25,966
Service and other revenue	3,525	3,564	7,146	6,716
Contractual revenue	—	3,596	—	7,192
Total revenue	20,073	20,747	44,988	39,874
Cost of revenue:				
Cost of product revenue	8,155	7,115	19,517	13,995
Cost of service and other revenue	3,917	2,988	8,533	5,731
Total cost of revenue	12,072	10,103	28,050	19,726
Gross profit	8,001	10,644	16,938	20,148
Operating expense:				
Research and development	16,883	17,522	33,854	33,883
Sales, general and administrative	15,505	11,192	30,770	22,900
Total operating expense	32,388	28,714	64,624	56,783
Operating loss	(24,387)	(18,070)	(47,686)	(36,635)
Interest expense	(826)	(795)	(1,664)	(1,574)
Other income (expense), net	(326)	366	(56)	358
Net loss	(25,539)	(18,499)	(49,406)	(37,851)
Other comprehensive loss:				
Unrealized gain on investments	(13)	11	(21)	59
Comprehensive loss	$ (25,552)	$ (18,488)	$ (49,427)	$ (37,792)
Net loss per share:				
Basic and diluted net loss per share	$ (0.26)	$ (0.21)	$ (0.52)	$ (0.44)
Shares used in computing basic and diluted net loss per share	97,360	88,148	95,177	85,876

See accompanying notes to the condensed consolidated financial statements.

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PACIFIC BIOSCIENCES OF CALIFORNIA, INC.

Condensed Consolidated Statements of Cash Flows

(Unaudited)

(in thousands)	Six-Month Periods Ended June 30, 2017	2016
Cash flows from operating activities		
Net loss	$ (49,406)	$ (37,851)
Adjustments to reconcile net loss to net cash used in operating activities		
Depreciation	4,839	1,823
Amortization of debt discount and financing costs	652	548
(Gain) Loss from derivative	485	(336)
Stock-based compensation	9,994	9,619
Other items	87	154
Changes in assets and liabilities		
Accounts receivable	1,896	(5,182)
Inventory	(2,240)	(4,491)
Prepaid expenses and other assets	6,368	1,004
Accounts payable	(1,944)	683
Accrued expenses	(2,266)	778
Deferred service revenue	(349)	(36)
Deferred contractual revenue	—	(7,192)
Other liabilities	2,404	1,327
Net cash used in operating activities	(29,480)	(39,152)
Cash flows from investing activities		
Purchase of property and equipment	(6,116)	(3,255)
Disposal of property and equipment	12	10
Purchase of investments	(61,181)	(64,572)
Sales of investments	3,662	13,334
Maturities of investments	46,511	22,082
Net cash used in investing activities	(17,112)	(32,401)
Cash flows from financing activities		
Proceeds from issuance of common stock from equity plans	6,231	4,502
Notes payable principal paying off	(4,500)	—
Proceeds from issuance of common stock from at-the-market equity offering, net of issuance costs	11,865	58,200

Proceeds from issuance of common stock from underwritten public equity offering, net of issue costs	52,709	—
Net cash provided by financing activities	66,305	62,702
Net increase (decrease) in cash and cash equivalents	19,713	(8,851)
Cash and cash equivalents at beginning of period	16,765	33,629
Cash and cash equivalents at end of period	$ 36,478	$ 24,778
Supplemental disclosure of non-cash investing and financing activities		
Changes in deposits for property and equipment paid in prior period	$ 9,694	$ —
Property and equipment paid by landlord	$ 12,600	$ —
Changes in unpaid Property and equipment	$ 3,323	$ 37
Property and equipment returned to landlord	$ 1,854	$ —
Inventory transferred to property and equipment	$ 608	$ 1,245

See accompanying notes to the condensed consolidated financial statements.

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PACIFIC BIOSCIENCES OF CALIFORNIA, INC.

Notes to Condensed Consolidated Financial Statements

(Unaudited)

NOTE 1. OVERVIEW

We design, develop and manufacture sequencing systems to help scientists resolve genetically complex problems. Based on our novel Single Molecule, Real-Time (SMRT®) Sequencing technology, our products enable: de novo genome assembly to finish genomes in order to more fully identify, annotate and decipher genomic structures; full-length transcript analysis to improve annotations in reference genomes, characterize alternatively spliced isoforms and find novel genes; targeted sequencing to more comprehensively characterize genetic variations; and DNA base modification identification to help characterize epigenetic regulation and DNA damage. Our technology combines very high consensus accuracy and long read lengths with the ability to detect real-time kinetic information.

In September 2015, we announced that we had launched a new nucleic acid sequencing platform, the PacBio Sequel®™ System (the “Sequel System”), which will provide higher throughput, more scalability, a reduced footprint and lower sequencing project costs compared to the PacBio® RS II System, while maintaining the existing benefits of our SMRT Technology.

The names “Pacific Biosciences,” “PacBio,” “SMRT,” “SMRTbell,” “Sequel” and our logo are our trademarks.

NOTE 2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Basis of Presentation and Consolidation

Our consolidated financial statements have been prepared in conformity with accounting principles generally accepted in the United States, or U.S. GAAP, as set forth in the Financial Accounting Standards Board, or FASB, Accounting Standards Codification, or ASC. The consolidated financial statements include the accounts of Pacific Biosciences and our wholly owned subsidiaries. All intercompany transactions and balances have been eliminated. Translation adjustments resulting from translating foreign subsidiaries’ results of operations and assets and liabilities into U.S. dollars are immaterial for all periods presented.

Use of Estimates

The preparation of financial statements in conformity with U.S. GAAP requires us to make estimates and assumptions that affect the amounts reported in the financial statements and accompanying notes to the financial statements. Our estimates include, but are not limited to, the valuation of inventory, revenue valuation, the valuation of a financing derivative and long-term notes, the valuation and recognition of share-based compensation, the delivery period for collaboration agreements, the useful lives assigned to long-lived assets, and the computation provisions for income taxes. Actual results could differ materially from these estimates.

During the first and second quarter of 2017, we recorded a charge to cost of revenue of $1.3 million and $0.3 million, respectively, relating to leased RS II instruments primarily due to a change in the estimated useful life of these

instruments.

Fair Value of Financial Instruments

The carrying amount of our accounts receivable, prepaid expenses, other current assets, accounts payable, accrued expenses and other liabilities, current, approximate fair value due to their short maturities. The carrying value of our other liabilities, non-current, approximates fair value due to the time to maturity and prevailing market rates.

The fair value hierarchy established under U.S. GAAP requires an entity to maximize the use of observable inputs and minimize the use of unobservable inputs when measuring fair value. A financial instrument's categorization within the fair value hierarchy is based upon the lowest level input that is significant to the fair value measurement. The three levels of inputs that may be used to measure fair value are as follows:

- Level 1: quoted prices in active markets for identical assets or liabilities;

- Level 2: inputs other than Level 1 that are observable, either directly or indirectly, such as quoted prices in active markets for similar assets or liabilities, quoted prices for identical or similar assets or liabilities in markets that are not active, or other inputs that are observable or can be corroborated by observable market data for substantially the full term of the assets or liabilities; and

- Level 3: unobservable inputs that are supported by little or no market activity and that are significant to the fair value of the assets or liabilities.

We consider an active market as one in which transactions for the asset or liability occurs with sufficient frequency and volume to provide pricing information on an ongoing basis. Conversely, we view an inactive market as one in which there are few transactions

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for the asset or liability, the prices are not current, or price quotations vary substantially either over time or among market makers. Where appropriate, our non-performance risk, or that of our counterparty, is considered in determining the fair values of liabilities and assets, respectively.

We classify our cash deposits and money market funds within Level 1 of the fair value hierarchy because they are valued using bank balances or quoted market prices. We classify our investments as Level 2 instruments based on market pricing and other observable inputs. We did not classify any of our investments within Level 3 of the fair value hierarchy.

Assets and liabilities measured at fair value are classified in their entirety based on the lowest level input that is significant to the fair value measurement. Our assessment of the significance of a particular input to the entire fair value measurement requires management to make judgments and consider factors specific to the asset or liability.

Assets and Liabilities Measured at Fair Value on a Recurring Basis

The following table sets forth the fair value of our financial assets and liabilities that were measured on a recurring basis as of June 30, 2017 and December 31, 2016 respectively (in thousands):

	June 30, 2017				December 31, 2016			
(in thousands)	Level 1	Level 2	Level 3	Total	Level 1	Level 2	Level 3	Total
Assets								
Cash and cash equivalents:								
Cash and money market funds	$ 17,160	$ —	$ —	$ 17,160	$ 14,516	$ —	$ —	$ 14,516
Commercial paper	—	19,318	—	19,318	—	2,249	—	2,249
US government & agency securities	—	—	—	—	—	—	—	—
Total cash and cash equivalents	17,160	19,318	—	36,478	14,516	2,249	—	16,765
Investments:								
Commercial paper	—	29,640	—	29,640	—	23,583	—	23,583
Corporate debt securities	—	9,715	—	9,715	—	10,739	—	10,739
US government & agency securities	—	26,763	—	26,763	—	20,579	—	20,579
Asset backed securities	—	—	—	—	—	312	—	312
Total investments	—	66,118	—	66,118	—	55,213	—	55,213
Long-term restricted cash:								
Cash	4,500	—	—	4,500	4,500	—	—	4,500
Total assets measured at fair value	$ 21,660	$ 85,436	$ —	$ 107,096	$ 19,016	$ 57,462	$ —	$ 76,478
Liabilities								

Financing derivative	$ —	$ —	$ 15	$ 15	$ —	$ —	$ 356	$ 356
Total liabilities measured at fair value	$ —	$ —	$ 15	$ 15	$ —	$ —	$ 356	$ 356

The estimated fair value of the Financing Derivative liability (as defined in “Note 6. Notes Payable’) was determined using Level 3 inputs, or significant unobservable inputs. Refer to “Note 6. Notes Payable” for a detailed description and valuation approach. Changes to the estimated fair value of the Financing Derivative are recorded in “Other income (expense), net” in the condensed consolidated statements of operations and comprehensive loss.

The following table provides the changes in the fair value of the Financial Derivative during the six-month period ended June 30, 2017 (in thousands):

Financing Derivative	Amount
Balance as of December 31, 2016	$ 356
Gain on change in estimated fair value	(341)
Balance as of June 30, 2017	$ 15

During the six-month period ended June 30, 2017, there were no transfers between Level 1, Level 2, or Level 3 assets or liabilities reported at fair value on a recurring basis and our valuation techniques did not change compared to the prior year.

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Financial Assets and Liabilities Not Measured at Fair Value on a Recurring Basis

The carrying amount of our accounts receivable, prepaid expenses, other current assets, accounts payable, accrued expenses and other current liabilities approximate fair value due to their short maturities.

We determined the fair value of the Notes (as defined in “Note 6. Notes Payable”) from the debt facility we entered into during the first quarter of 2013 using Level 3 inputs, or significant unobservable inputs. The value of the Notes was determined by comparing the difference between the fair value of the Notes with and without the Financing Derivative by calculating the respective present values from future cash flows using a 9.2% and 10.6% weighted average market yield at June 30, 2017 and December 31, 2016, respectively. Refer to “Note 6. Notes Payable” for additional details regarding the Notes. The estimated fair value and carrying value of the Notes are as follows (in thousands):

The estimated fair value and carrying value of the Notes are as follows (in thousands):

	June 30, 2017		December 31, 2016	
	Fair Value	Carrying Value	Fair Value	Carrying Value
Notes payable	$ 15,958	$ 13,084	$ 19,788	$ 16,106

Net Loss per Share

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

	Six Months Ended June 30,	
(in thousands)	2017	2016
Options outstanding	25,592	22,588

Recent Accounting Pronouncements

Recently Adopted Accounting Standards

In March 2016, the FASB issued ASU 2016-09, Compensation - Stock Compensation (Topic 718): Improvements to Employee Share-Based Payment Accounting, which amends the current stock compensation guidance. The amendments simplify the accounting for the taxes related to stock based compensation, including adjustments to how excess tax benefits and a company's payments for tax withholdings should be classified. Furthermore, the amendments allow the entities to make an accounting policy election to either estimate forfeitures or recognize forfeitures as they occur.

We adopted this guidance as of January 1, 2017. Prior to adoption, the excluded windfall deductions for federal and state purposes were $6.0 million and $0.6 million, respectively. Upon adoption of ASU 2016-09, we recognized the excluded windfall deductions as a deferred tax asset with a corresponding offset to valuation allowance. The total deferred tax assets were $321.5 million as of January 1, 2017, which was fully offset by a valuation allowance. Further, we did not elect an accounting policy change to record forfeitures as they occur and thus we continue to estimate forfeitures at each period.

During 2016, we adopted ASU 2014-15, Disclosure of Uncertainties about an Entity’s Ability to Continue as a Going Concern (“ASU 2014-15”). ASU 2014-15 requires companies to evaluate whether there is substantial doubt about an entity’s ability to continue as a going concern and to provide related footnote disclosure. Management performed such an assessment and concluded there was not substantial doubt about our ability to continue as a going concern.

Recently Issued Accounting Standards

In February 2016, the FASB issued ASU 2016-02, Leases. The guidance in ASU 2016-02 supersedes the lease recognition requirements in ASC Topic 840, Leases. ASU 2016-02 requires an entity to recognize assets and liabilities arising from a lease for both financing and operating leases, along with additional qualitative and quantitative disclosures. ASU 2016-02 is effective for fiscal years beginning after December 15, 2018, with early adoption permitted. We are currently evaluating the impact of the adoption of this standard on our consolidated financial statements.

In May 2014, the FASB issued ASU 2014-09, Revenue from Contracts with Customers, requiring an entity to recognize the amount of revenue to which it expects to be entitled for the transfer of promised goods or services to customers. The updated standard will replace most existing revenue recognition guidance in U.S. GAAP when it becomes effective. ASU 2014-09 is effective for periods beginning after December 15, 2017, with early adoption permitted but not earlier than the original effective date. Accordingly, the updated standard is effective for us in the first quarter of 2018. Entities have the option of using either a full retrospective or a modified retrospective approach to adopt this new guidance.

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We are currently evaluating the new guidance to determine the impact it may have on our consolidated financial statements. We expect to adopt the standard using the modified retrospective approach with the cumulative effect of adopting this standard to be recorded to retained earnings on January 1, 2018. The new revenue standard is principle-based and interpretation of those principles may vary from company to company based on their unique circumstances. It is possible that interpretation, industry practice, and guidance may evolve as companies and the accounting profession work to implement this new standard. We are still in the process of evaluating the effect of the new standard on our historical financial statements and disclosures. While we have not completed our evaluation, we currently believe that the impact to revenue and expense recognized will not be material to any of the years presented. As we complete our evaluation of this new standard, 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.

NOTE 3. CONTRACTUAL REVENUE

In September 2013, we entered into the “Roche Agreement” with Roche, pursuant to which we accounted for, and recognized as revenue, the up-front payment received thereunder using the proportional performance method over the periods in which the delivery of elements pursuant to the Roche Agreement occurs. We recognized revenue under the Roche Agreement using a straight-line convention over the service periods of the deliverables as this method approximated our performance of services pursuant to the Roche Agreement. Out of the $35.0 million upfront cash payment received, quarterly amortization of $1.7 million was recognized as contractual revenue from the fourth quarter of 2013 to the fourth quarter of 2014. Beginning in the three-month period ended March 31, 2015, we revised the estimated development period related to our contractual revenue amortization based on increasing certainty of the development time on a prospective approach and quarterly amortization of $3.6 million was recognized as contractual revenue for each of the four quarters of 2015 and for each of the first three quarters of 2016. As of September 30, 2016, the total deferred contractual revenue balance was $1.3 million, relating to the amount allocated to the deliverable of our participation on the joint steering committee. In December 2016, we received notice from Roche that Roche had elected to terminate the Roche Agreement for convenience and the termination became effective February 10, 2017, which was 60 days after the date of the notice in accordance with the terms of the Roche Agreement. Upon such notice in December 2016, no further participation on the joint steering committee was deemed necessary; as such, we recognized the entire remaining unamortized deferred revenue of $1.3 million as contractual revenue in the fourth quarter of 2016.

Further, the Roche Agreement provided for additional payments totaling $40.0 million upon the achievement of certain development milestones, all of which have previously been received and recognized as revenue. Consideration from development milestones is recognized in the period in which a milestone is achieved only if the milestone is considered substantive in its entirety. We achieved the first development milestone under the Roche Agreement and recognized the related $10.0 million as contractual revenue during the year ended December 31, 2014. We achieved the second and the third (final) development milestones under the Roche Agreement and recognized the related $10.0 million and $20.0 million as contractual revenue during the three-month periods ended June 30, 2015 and December 31, 2015, respectively. There are no other milestones remaining to be achieved.

NOTE 4. CASH, CASH EQUIVALENTS AND INVESTMENTS

The following tables summarize our cash, cash equivalents and investments as of June 30, 2017 and December 31, 2016 (in thousands):

	As of June 30, 2017			
	Amortized Cost	Gross unrealized gains	Gross unrealized losses	Fair Value
Cash and cash equivalents:				
Cash and money market funds	$ 17,160	$ —	$ —	$ 17,160
Commercial paper	19,319	—	(1)	19,318
Total cash and cash equivalents	36,479	—	(1)	36,478
Investments:				
Commercial paper	29,640	2	(2)	29,640
Corporate debt securities	9,718	—	(3)	9,715
Asset backed securities	—	—	—	—
US government & agency securities	26,775	—	(12)	26,763
Total investments	66,133	2	(17)	66,118
Total cash, cash equivalents and investments	$ 102,612	$ 2	$ (18)	$ 102,596

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Long-term restricted cash:				
Cash	$ 4,500	$ —	$ —	$ 4,500

	As of December 31, 2016			
	Amortized Cost	Gross unrealized gains	Gross unrealized losses	Fair Value
Cash and cash equivalents:				
Cash and money market funds	$ 14,516	$ —	$ —	$ 14,516
Commercial paper	2,249	—	—	2,249
Total cash and cash equivalents	16,765	—	—	16,765
Investments:				
Commercial paper	23,581	5	(3)	23,583
Corporate debt securities	10,741	1	(3)	10,739
Asset backed securities	312	—	—	312
US government & agency securities	20,574	7	(2)	20,579
Total investments	55,208	13	(8)	55,213
Total cash, cash equivalents and investments	$ 71,973	$ 13	$ (8)	$ 71,978
Long-term restricted cash:				
Cash	$ 4,500	$ —	$ —	$ 4,500

The following table summarizes the contractual maturities of our cash equivalents and available-for-sale investments, excluding money market funds, as of June 30, 2017:

(in thousands)	Fair Value
Due in one year or less	$ 84,143
Due after one year through 5 years	1,293
Total investments in debt securities	$ 85,436

Actual maturities may differ from contractual maturities because issuers may have the right to call or prepay obligations without call or prepayment penalties.

NOTE 5. BALANCE SHEET COMPONENTS

Inventory

As of June 30, 2017 and December 31, 2016, our inventory consisted of the following components:

(in thousands)	June 30, 2017	December 31, 2016
Purchased materials	$ 6,803	$ 4,817
Work in process	6,695	7,287
Finished goods	3,768	3,530
Inventory	$ 17,266	$ 15,634

Prepaid Expenses and Other Current Assets

As of June 30, 2017 and December 31, 2016, our prepaid expenses and other current assets consisted of the following components:

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(in thousands)	June 30, 2017	December 31, 2016
Receivable from Prior Landlord	$ 755	$ 5,000
Rent deposits for O'Brien building	1,080	2,160
Prepaid expenses	1,140	2,342
Other current assets	570	476
Prepaid expenses and other current assets	$ 3,545	$ 9,978

On July 23, 2015, we entered into a Lease Amendment Agreement (the “Lease Amendment Agreement”) with Peninsula Innovation Partners, LLC (the “Prior Landlord”), which amends the terms and conditions of certain of our then existing Menlo Park facility real property leases. As consideration for our agreement to amend the existing leases pursuant to the Lease Amendment Agreement, and subject to the terms and conditions contained therein, we became eligible to receive up to $20.0 million from the Prior Landlord over time (the “Landlord Payments”), and rent abatement for the remainder of the lease. As of December 31, 2016, $5.0 million of the Landlord Payments were outstanding.

In January 2017, we entered into a Third Lease Amendment Agreement with the Prior Landlord that increased the amount of the Landlord Payments by $65,000. During the first quarter of 2017, we received Landlord Payments totaling $2,628,000.

In May 2017, we entered into a Fourth Lease Amendment Agreement with the Prior Landlord, based on which we turned over the 940 Hamilton and 1010 Hamilton buildings to the Prior Landlord. Accordingly, in June 2017 we received $1,682,000 in Landlord Payments, resulting in a remaining balance of $755,000 in “Prepaid Expenses and Other Current Assets” in the condensed consolidated balance sheets at June 30, 2017. Refer to “Note 7. Commitments and Contingencies” for additional details.

Other Long-term Assets

As of June 30, 2017 and December 31, 2016, our other long-term assets consisted of the following components:

(in thousands)	June 30, 2017	December 31, 2016
Rent deposits and tenant improvements for O'Brien building	$ —	$ 9,641
Other	184	172
Other long-term assets	$ 184	$ 9,813

In January 2017 we moved into the O'Brien building, and accordingly, the $9.6 million tenant improvements balance recorded in "Other Long-term Assets" at December 31, 2016 was transferred into leasehold improvements under "Property and Equipment" in the three-month period ended March 31, 2017.

Property and Equipment, Net

As of June 30, 2017 and December 31, 2016, our property and equipment, net, consisted of the following components:

(in thousands)	June 30, 2017	December 31, 2016
Building	$ —	$ 1,160
Laboratory equipment and machinery	23,853	23,337
Leasehold improvements	31,170	8,138
Computer equipment	9,096	7,170
Software	4,600	5,189
Furniture and fixtures	2,411	823
Construction in progress	1,272	5,772
	72,402	51,589
Less: Accumulated depreciation	(32,113)	(37,029)
Property and equipment, net	$ 40,289	$ 14,560

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In May 2017, we entered into a Fourth Lease Amendment Agreement with the Prior Landlord, based on which we turned over the 940 Hamilton and 1010 Hamilton buildings to the Prior Landlord. The 940 Hamilton building was a capital lease with a long-term facility financing obligation associated with this lease included in "Other liabilities, non-current" and the corresponding building and related leasehold improvements were included in "Property and equipment, net" of the condensed consolidated balance sheets. Upon turning over the building to the Prior Landlord, the capital lease was terminated, resulting in the extinguishment of the facility financing obligation.

By the end of the first quarter of 2017, improvements associated with our O'Brien premises were substantially completed. As a result, during the first quarter of 2017 we capitalized $28.9 million of tenant improvements. As the premises were completed in phases during the first half of 2017, tenant improvements were placed into service in phases once construction was substantially complete and the related asset was ready for its intended use. Refer to "Note 7. Commitments and Contingencies" for additional details.

NOTE 6. NOTES PAYABLE

Facility Agreement

Pursuant to a Facility Agreement (the "Facility Agreement") we entered into with entities affiliated with Deerfield Management Company, L.P. (collectively, "Deerfield") during February 2013, we issued promissory notes in the aggregate principal amount of $20.5 million (the "Notes"). The Notes bear simple interest at a rate of 8.75% per annum, payable quarterly in arrears commencing on April 1, 2013.

In connection with the execution of the Facility Agreement, we issued warrants to purchase an aggregate of 5.5 million shares of common stock immediately exercisable at an exercise price per share initially equal to $2.63 (the "Warrants"). During the year ended December 31, 2016, warrants to purchase 5.5 million shares of common stock were net exercised, resulting in the issuance of approximately 4.2 million shares of common stock. The cashless net exercises of the warrants did not result in any additional funds being collected by us. As of December 31, 2016, no warrants remained outstanding.

In addition, the Facility Agreement requires us to maintain consolidated cash and cash equivalents on the last day of each calendar quarter of not less than $2.0 million. As security for our repayment of our obligations under the Facility Agreement, we granted to Deerfield a security interest in substantially all of our property.

The Facility Agreement has a maximum term of seven years from inception. Subsequent to the date of the Facility Agreement, at the election of the holders of Notes representing a majority of the aggregate principal amount of the outstanding Notes, the Notes holders may elect to receive 25% of the net proceeds from any financing that includes an equity component, including without limitation, the sale or issuance of our common stock, options, warrants or other securities convertible or exchangeable for shares of our common stock, as payment of the Notes. This right is subject to certain exceptions set forth in the Facility Agreement. The Notes holders have the option to require us to repay the Notes if we complete a Major Transaction (as defined in the Facility Agreement), including a change of control or a sale of all or substantially all of our assets. Additionally, the principal balance of the Facility Agreement may become immediately due and payable upon an Event of Default (as defined in the Facility Agreement), in which case the Notes holders would have the right to require us to repay 100% of the principal amount of the loan, plus any accrued

and unpaid interest thereon. The Facility Agreement does not provide for a prepayment of the Notes at our option.

On June 23, 2017, pursuant to a partial exercise by the Notes holders of their right to elect to receive up to 25% of the net proceeds from any qualified financing that includes an equity component, we paid $4.5 million of outstanding principal, together with accrued and unpaid interest, to one of the Notes holders with proceeds from our underwritten public equity offering (Refer to “Note 8. Stockholders’ Equity” for additional details).

Financing Derivative

A number of features embedded in the Notes required accounting for as a derivative, including the indemnification of certain withholding taxes and the acceleration of debt upon (i) a qualified financing, (ii) an event of default, (iii) a Major Transaction, and (iv) the exercise of the warrant via offset to debt principal. These features represent a single derivative (the “Financing Derivative”) that was bifurcated from the debt instrument and accounted for as a liability at fair value, with changes in fair value between reporting periods recorded in other income (expense), net.

The estimated fair value of the Financing Derivative was determined by comparing the difference between the fair value of the Notes with and without the Financing Derivative by calculating the respective present values from future cash flows using a 9.2% and 10.6% weighted average market yield at June 30, 2017 and December 31, 2016, respectively. The estimated fair value of the Financing Derivative as of June 30, 2017 and December 31, 2015 was $0.0 million and $0.4 million, respectively.

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We initially recorded the Notes and Warrants at $14.1 million and $6.4 million, respectively, based upon the relative fair value allocation of the $20.5 million of proceeds. The carrying value of the Notes at the inception of the debt was $12.8 million, resulting in an original issue discount of $7.7 million.

As of June 30, 2017 and December 31, 2016, we had outstanding $16.0 million and $20.5 million aggregate principal amount of Notes, respectively. As of June 30, 2017 and December 31, 2016, a debt discount of $2.9 million and $4.3 million, respectively, remained to be amortized through February 2020, the maturity of the Notes.

As of June 30, 2017, $2.6 million out of the outstanding $16.0 million aggregate principal amount of Notes was reclassified from “Notes payable, non-current” to “Notes payable, current”, as that portion of the principal becomes due by June 30, 2018.

NOTE 7. COMMITMENTS AND CONTINGENCIES

Leases

In December 2009, we entered into a lease agreement for a manufacturing and office facility in Menlo Park. For the facility to meet our needs and operating requirements, substantial tenant improvements, including improvements to the structural elements and principal operating systems of the facility, were necessary. The lessor provided a tenant improvement allowance of $1.8 million to apply towards the necessary improvements and we remained obligated for additional amounts over the afforded allowance. Due to our involvement in and the nature of the renovations made to the facility and our obligations to fund the costs of renovations exceeding the incentives afforded to us, we account for the facility as if we are the owner. Accordingly, we recorded $3.0 million of building and leasehold improvement assets, reflecting the $1.2 million fair value of the facility prior to commencing renovations and the $1.8 million of landlord incentives within property and equipment, net and a corresponding liability recorded to facility financing obligation.

As a result of the lease amendment agreement described below, future rent expense associated with our prior Menlo Park facility leases was reduced to zero. The remaining long-term facility financing obligations associated with these leases, presented as “Other liabilities, non-current” on the condensed consolidated balance sheets at June 30, 2017 and December 31, 2016, were $0 million and $1.7 million, respectively.

Lease Amendment Agreement

On July 23, 2015, we entered into a Lease Amendment Agreement (the “Lease Amendment Agreement”) with Peninsula Innovation Partners, LLC (the “Prior Landlord”), which amends the terms and conditions of certain of our prior Menlo Park facility real property leases. The Lease Amendment Agreement provides for, among other things, amendments of the term for certain of the leases with the Prior Landlord, the termination of all renewal, expansion and extension rights contained in any of the existing leases with the Prior Landlord (including our options to extend the terms for

certain of the existing leases for two consecutive five-year periods), as well as rent abatement for a specified period of time. As consideration for our agreement to amend the existing leases pursuant to the Lease Amendment Agreement, and subject to the terms and conditions contained therein, we became eligible to receive up to four payments of $5.0 million each from the Prior Landlord over time (the "Landlord Payments"), and rent abatement for the remainder of the lease. In the event that we breach any of the leases and fail to cure such breach within the time permitted, the Prior Landlord would have no obligation to make the final $5.0 million payment. On September 1, 2015, the permit process related to an architectural approval and a change of use permit with respect to our new premises at 1305 O'Brien Drive (formerly 1315 O'Brien Drive), Menlo Park, California (the "O'Brien Premises") was completed, which satisfied the contingencies under the Lease Amendment Agreement. As a result, we recorded $23.0 million in "Gain on lease amendments" in the consolidated statements of operations and comprehensive loss for the three-month period ended September 30, 2015, reflecting that our rent payments were reduced to zero for the remaining term of our existing Menlo Park facility real property leases, and the aggregate of $20.0 million in Landlord Payments became receivable and any associated financing obligation was revalued. Of the $20.0 million remaining Landlord Payments, the first $5.0 million Landlord Payment was received in September 2015, the second $5.0 million Landlord Payment was received in February 2016 and the third $5.0 million Landlord Payment was received in August 2016.

In June 2016, we entered into a Second Lease Amendment Agreement with the Prior Landlord that modified the payment schedule for the final $5.0 million. At December 31, 2016, the final $5.0 million of Landlord Payments were recorded in "Prepaid Expenses and Other Current Assets" in the condensed consolidated balance sheets.

In January 2017, we entered into a Third Lease Amendment Agreement with the Prior Landlord that increased the amount of the final $5.0 million Landlord Payments by $65,000. During the first quarter of 2017, we received Landlord Payments totaling $2,628,000.

In May 2017, we entered into a Fourth Lease Amendment Agreement with the Prior Landlord, based on which we turned over the 940 Hamilton and 1010 Hamilton buildings to the Prior Landlord. Accordingly, in June 2017 we received $1,682,000 in Landlord

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Payments, resulting in a remaining balance of $755,000 in “Prepaid Expenses and Other Current Assets” in the condensed consolidated balance sheets at June 30, 2017.

The 940 Hamilton building was a capital lease with a long-term facility financing obligation associated with this lease included in “Other liabilities, non-current” and the corresponding building and related leasehold improvements were included in “Property and equipment, net” of the condensed consolidated balance sheets. Upon turning over the building to the Prior Landlord, the capital lease was terminated, resulting in the extinguishment of the facility financing obligation.

O’Brien Lease Agreement

On July 22, 2015, we entered into a new lease agreement (the “O’Brien Lease”) with respect to the O’Brien Premises. The term of the O’Brien Lease is one hundred thirty-two (132) months, commencing on the date that is the later of April 15, 2016 or the date on which the O’Brien Premises landlord has substantially completed certain shell improvements and tenant improvements. In December 2016, we entered into an amendment to the O’Brien Lease which defined the commencement date of the lease to be October 25, 2016, notwithstanding that such substantial completion did not occur until the first quarter of 2017. Base monthly rent was abated for the first six (6) months of the lease term and thereafter is $540,000 per month during the first year of the lease term, with specified annual increases thereafter until reaching $711,000 per month during the last twelve (12) months of the lease term. We were required to pay $2.2 million in prepaid rent which was applied to the monthly rent installments due for the first to fourth months after the rent abatement period; and, as such, $2.2 million was recorded in “Prepaid expense and other current assets” in the condensed consolidated balance sheet as of both Mach 31, 2017 and December 31, 2016. As of June 30, 2017, $1.1 million was recorded in “Prepaid expense and other current assets” in the condensed consolidated balance sheet. We were required to establish a deposit of $4.5 million in the form of a letter of credit in October 2015; and, as such, $4.5 million was recorded in “Long-term restricted cash” in the condensed consolidated balance sheet as of both June 30, 2017 and December 31, 2016.

The landlord was obligated to construct certain warm shell improvements at the landlord’s cost and expense and provide us with a tenant improvement allowance in the amount of $12.6 million. Construction was completed in phases and we began moving into the O’Brien Premises during January 2017. By the end of the first quarter of 2017, improvements associated with the entire O’Brien Premises were substantially completed. As a result, during the first quarter of 2017 we capitalized $28.9 million of tenant improvements, of which $12.6 million was paid by the landlord as a tenant improvement allowance. As the $12.6 million tenant improvement allowance is accounted for as a lease incentive, $12.6 million was recorded to “Deferred rent, non-current”, which will be amortized over the lease term of approximately 11 years. In addition, as the premises were completed in phases during the first half of 2017, tenant improvements were placed into service in phases once construction was substantially complete and the related asset was ready for its intended use.

As of June 30, 2017, the future annual minimum lease payments for the O’Brien lease were as follows:

Years ending December 31,	Amount

	(in thousands)
Remaining of 2017	$ 3,171
2018	6,822
2019	6,930
2020	7,056
2021	7,272
Thereafter	46,710
Total minimum lease payments	$ 77,961

Rent expense was $1.6 million and $48,000 for the three-month periods ended June 30, 2017 and 2016, respectively. Rent expense was $3.1 million and $100,200 for the six-month periods ended June 30, 2017 and 2016, respectively.

Legal

On November 2, 2016, we filed a complaint against Oxford Nanopore Technologies Ltd., Oxford Nanopore Technologies, Inc. (“ONT Inc.”) and Metrichor, Ltd. (“Metrichor” and, together with ONT Inc., “ONT”) with the U.S. International Trade Commission (“USITC”) for patent infringement. On December 5, 2016, the USITC provided notice that an investigation had been instituted based on the complaint. We are seeking exclusionary relief with respect to several ONT products, including ONT’s MinION and PromethION devices. The complaint is based on our U.S. Patent No. 9,404,146, entitled “Compositions and methods for nucleic acid sequencing” which covers novel methods for sequencing single nucleic acid molecules using linked double-stranded nucleic acid templates, providing improved sequencing accuracy. On March 1, 2017, we filed an amended complaint to add a second patent in the

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same patent family, U.S. Patent No. 9,542,527, which was granted on January 10, 2017, to the investigation. We are seeking, among other things, an exclusion order permanently barring entry of infringing ONT products into the United States, and a cease and desist order preventing ONT from advertising and selling infringing products in the United States. On May 23, 2017, the Administrative Law Judge ("ALJ") assigned to the matter issued an order construing certain claim terms of the asserted patents. On June 8, 2017, ONT filed a summary determination motion to terminate the proceedings based on the ALJ's claim construction decision, which motion was not opposed by us. The ALJ granted the motion on July 19, 2017, and, on July 31, 2017, we filed a petition to review with the USITC to correct what we believe was an incorrect construction of the claims.

On February 2, 2017, we filed a claim in the High Court of England and Wales against Oxford Nanopore Technologies Ltd. ("ONT Ltd.") and Metrichor for infringement of Patent EP(UK) 3 025 542, which is in the same patent family as the patents asserted in the USITC action referred to above. We are seeking remedies including injunctive relief, damages, and costs. On March 27, 2017, the defendants in the case filed their defense and counterclaim, denying infringement and seeking a declaration that the asserted patent is invalid. We filed our reply and defense to counterclaim on April 12, 2017.

On March 15, 2017, we filed a complaint in the U.S. District Court for the District of Delaware against ONT Inc. for patent infringement. The complaint is based on our U.S. Patent No. 9,546,400, entitled "Nanopore sequencing using n-mers" which covers novel methods for nanopore sequencing of nucleic acid molecules using the signals from multiple monomeric units. This patent was granted on January 17, 2017. We are seeking remedies including injunctive relief, damages and costs. On May 8, 2017, the defendants filed a motion to dismiss the complaint, alleging that the asserted patent claims recite patent ineligible subject matter. We filed our response on June 5, 2017.

On April 21, 2017, ONT Ltd. and Harvard University filed a claim against us in the High Court of England and Wales for infringement of Patent EP(UK) 1 192 453, a patent owned by Harvard University and entitled "Molecular and atomic scale evaluation of biopolymers," and for which ONT Ltd. alleges it holds an exclusive license. ONT Ltd. and Harvard University are seeking remedies including injunctive relief, damages, and costs. On April 25, 2017, ONT Ltd. announced that it also had filed a claim against us in the District Court of Mannheim, Germany, for infringement of the German version of the patent. We received service in this matter on July 11, 2017.

Litigation is inherently unpredictable, and it is too early in the proceedings to predict the outcome of these lawsuits or any impact they may have on us. As such, the estimated financial effect associated with these complaints cannot be made as of this 10-Q filing time.

From time to time, we may also be involved in a variety of other claims, lawsuits, investigations and proceedings relating to securities laws, product liability, patent infringement, contract disputes, employment and other matters that arise in the normal course of our business. In addition, third parties may, from time to time, assert claims against us in the form of letters and other communications. We record a provision for contingent losses when it is both probable that a liability has been incurred and the amount of the loss can be reasonably estimated. We currently do not believe that the ultimate outcome of any of the matters described above is probable or reasonably estimable, or that these matters will have a material adverse effect on our business; however, the results of litigation and claims are inherently unpredictable. Regardless of the outcome, litigation can have an adverse impact on us because of litigation and settlement costs, diversion of management resources and other factors.

NOTE 8. STOCKHOLDERS' EQUITY

“At-the-Market” Equity Offering

In February 2017, we filed an additional prospectus supplement pursuant to which we could offer and sell, from time to time, additional shares of our common stock having an aggregate offering price of up to $60.0 million.

During the six-month period ended June 30, 2017 we issued 3.2 million shares of our common stock at an average price of $3.86 per share through our “at-the-market” offering, resulting in net proceeds of $11.9 million. We terminated our current “at-the-market” offering program in June 2017.

We paid a commission equal to 3% of the gross proceeds from the sale of shares of our common stock under the sales agreement. We are not obligated to sell shares of our common stock under the sales agreement.

Subject to certain exceptions set forth in our Facility Agreement, holders of our Notes may elect to receive up to 25% of the net proceeds from financing activities that include an equity component as prepayment of the Notes to be applied first, to accrued and unpaid interest and second, to principal. However, in April 2017 holders representing a majority of the aggregate principal amount of the outstanding Notes waived such right in connection with the issuance and sale of shares of common stock under our “at-the-market” offering.

Underwritten Public Equity Offering

On June 15, 2017, we entered into an underwriting agreement, relating to the public offering of 15,419,354 shares of our common stock, $0.001 par value per share, at a price to the public of $3.10 per share. Under the terms of the Underwriting Agreement,

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we also granted the Underwriters a 30-day option to purchase up to an additional 2,312,903 shares of our common stock, which was subsequently exercised in full, and the offering, including the sale of shares of common stock subject to the Underwriters' option, closed on June 20, 2017. In total, we sold 17,732,257 shares of our common stock at a price of $3.10 per share. We paid a commission equal to 4% of the gross proceeds from the sale of shares of our common stock under the underwriting agreement. The total net proceeds to us from the offering, after deducting the underwriting discount and paid offering expenses, were approximately $52.7 million, which excludes approximately $0.2 million of offering expenses that were unpaid as of June 30, 2017.

Warrants

In connection with the execution of the Facility Agreement, we issued immediately exercisable warrants to purchase 5.5 million shares of common stock at an exercise price per share initially equal to $2.63, all of which were outstanding at December 31, 2015.

During the three-month periods ended March 31, 2016, warrants to purchase 3,818,000 shares of common stock were net exercised, resulting in the issuance of approximately 3.0 million shares with all warrants being fully net exercised by December 31, 2016. As of June 30, 2017, no warrants remained outstanding.

Equity Plans

As of June 30, 2017, we had three active equity compensation plans: the 2010 Equity Incentive Plan, the 2010 Outside Director Equity Incentive Plan, and the 2010 Employee Stock Purchase Plan ("ESPP").

The following table summarizes stock option activity for all our stock option plans for the six-month period ended June 30, 2017 (in thousands, except per share amounts):

		Stock Options Outstanding		
	Shares available for grant	Number of shares	Exercise price	Weighted average exercise price
Balances, December 31, 2016	6,835	22,501	$ 1.16 – 16.00	$ 6.30
Additional shares reserved	4,634			
Options granted	(5,258)	5,258	3.30 – 5.27	5.10
Options exercised	—	(1,231)	1.16 – 4.55	2.54
Options canceled	936	(936)	1.16 – 16.0	7.24
Balances, June 30, 2017	7,147	25,592	$ 1.16 – 16.00	$ 6.20

Shares issued under our ESPP totaled 750,005 and 668,566 shares during the six-month periods ended June 30, 2017 and 2016, respectively. As of June 30, 2017, 1,841,595 shares of our common stock remain available for issuance under our ESPP.

Stock-Based Compensation

Total stock-based compensation expense consists of the following (in thousands):

	Three-Month Periods Ended June 30,		Six-Month Periods Ended June 30,	
	2017	2016	2017	2016
Cost of revenue	$ 572	$ 562	$ 1,095	$ 1,061
Research and development	2,029	2,131	4,060	4,041
Sales, general and administrative	2,408	2,345	4,839	4,517
Total stock-based compensation expense	$ 5,009	$ 5,038	$ 9,994	$ 9,619

We estimated the fair value of employee stock options on the grant date using the Black-Scholes option pricing model. The estimated fair value of employee stock options is amortized on a straight-line basis over the requisite service period of the awards. The fair value of employee stock options was estimated using the following weighted average assumptions:

	Three-Month Periods Ended June 30,		Six-Month Periods Ended June 30,	
Stock Option	2017	2016	2017	2016
Expected term in years	6.1	6.1	6.1	6.1
Expected volatility	70%	70%	70%	70%
Risk-free interest rate	1.9%	1.4%	2.1%	1.5%
Dividend yield	—	—	—	—

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We estimate the value of employee stock purchase rights on the grant date using the Black-Scholes option pricing model. The fair value of shares to be purchased under our ESPP was estimated using the following assumptions:

	Three-Month Periods Ended June 30,		Six-Month Periods Ended June 30,	
ESPP	2017	2016	2017	2016
Expected term in years	0.5-2.0	0.5-2.0	0.5-2.0	0.5-2.0
Expected volatility	70%	70%	70%	70%
Risk-free interest rate	0.8%-1.3%	0.5%-0.9%	0.8%-1.3%	0.5%-0.9%
Dividend yield	—	—	—	—

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

You should read the following discussion and analysis of our financial condition and results of operations together with our condensed consolidated financial statements and the related notes included in this Quarterly Report on Form 10-Q and those in our Annual Report on Form 10-K for the year ended December 31, 2016. Some of the information contained in this discussion and analysis or set forth elsewhere in this report, including information with respect to our products, plans and strategy for our business and related financing, includes forward-looking statements that involve risks and uncertainties, including statements regarding our expected financial results in future periods. The words "anticipates," "believes," "could," "estimates," "expects," "intends," "may," "might," "plans," "potential," "predicts," "projects," "target," "will," "would" and similar expressions are intended to identify forward-looking statements, although not all forward-looking statements contain these identifying words. We may not actually achieve the plans, intentions or expectations disclosed in our forward-looking statements and you should not place undue reliance on our forward-looking statements. You should read the "Risk Factors" section of this Quarterly Report on Form 10-Q for a discussion of important factors that could cause actual results to differ materially from the results described in or implied by the forward-looking statements contained in the following discussion and analysis. We do not assume any obligation to update any forward-looking statements.

Overview

We design, develop and manufacture sequencing systems to help scientists resolve genetically complex problems. Based on our novel Single Molecule, Real-Time (SMRT®) sequencing technology, our products enable: de novo genome assembly to finish genomes in order to more fully identify, annotate and decipher genomic structures; full-length transcript analysis to improve annotations in reference genomes, characterize alternatively spliced isoforms in important gene families, and find novel genes; targeted sequencing to more comprehensively characterize genetic variations; and real-time kinetic information for epigenome characterization. Our technology provides high accuracy, ultra-long reads, uniform coverage, and is the only DNA sequencing technology that provides the ability to simultaneously detect epigenetic changes. PacBio® sequencing systems, including consumables and software, provide a simple, fast, end-to-end workflow for SMRT sequencing.

In September 2015, we announced that we had launched a new nucleic acid sequencing platform, the PacBio Sequel®™ System, which provides higher throughput, more scalability, a reduced footprint and lower sequencing project costs compared to the PacBio® RS II System, while maintaining the existing benefits of our SMRT Sequencing Technology.

In June, 2017, we closed an underwritten public equity offering pursuant to which we sold, in total, 17,732,257 shares of our common stock at a price of $3.10 per share. We paid a commission equal to 4% of the gross proceeds from the sale of shares of our common stock and the total net proceeds to us from the offering, after deducting the underwriting discount and paid offering expenses, were approximately $52.7 million, which excludes approximately $0.2 million of offering expenses that were unpaid as of June 30, 2017.

Basis of Presentation

Revenue

During the three- and six-month periods ended June 30, 2017 and 2016, product revenue was primarily derived from the sale of Sequel instruments and associated consumables. Service and other revenue was primarily derived from product maintenance agreements sold on our installed instruments. Contractual revenue for the three-and six-month period ended June 30, 2016 was derived from the quarterly amortization from the non-refundable upfront payment of $35.0 million that we received in September 2013 pursuant to the Roche Agreement. In December 2016, we received notice from Roche that Roche had elected to terminate the Roche Agreement for convenience and the termination became effective February 10, 2017.

Cost of Revenue

Cost of revenue reflects the direct cost of product components, third-party manufacturing services and our internal manufacturing overhead and customer service infrastructure costs incurred to produce, deliver, maintain and support our instruments, consumables, and services. There are no incremental costs associated with our contractual revenue; all product development costs are reflected in research and development expense.

Manufacturing overhead is predominantly comprised of labor and facility costs. We determine and capitalize manufacturing overhead into inventory based on a standard cost model that approximates actual costs.

Service costs include the direct costs of components used in support, repair and maintenance of customer instruments as well as the cost of personnel, materials, shipping and support infrastructure necessary to support the installed customer base.

Research and Development Expense

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Research and development expense consists primarily of expenses for personnel engaged in the development of our SMRT Sequencing technology, the design and development of our future products and current product enhancements. These expenses also include prototype-related expenditures, development equipment and supplies, facilities costs and other related overhead. We expense research and development costs during the period in which the costs are incurred. However, we defer and capitalize non-refundable advance payments made for research and development activities until the related goods are received or the related services are rendered.

Sales, General and Administrative Expense

Sales, general and administrative expenses include costs for sales, marketing and administrative personnel, sales and marketing activities, tradeshow expenses, legal expenses, regulatory fees and general corporate expenses.

Interest Expense

Interest expense is primarily related to our debt facility and includes the amortization of debt discount and other related costs. To a lesser extent, these amounts also include interest expense relating to our facility financing obligations resulting from a lease agreement entered into in 2010.

Other Income (Expense), Net

Other income (expense), net consists primarily of interest income earned on cash and investments, accretion of discounts and amortization of premiums related to investments, net gains or losses on foreign currency transactions, net gains or losses resulting from changes in the estimated fair value of the financing derivative and foreign income taxes.

Income Taxes

Except for the three-month period ended September 30, 2015, we have incurred net losses in every quarter since inception and have not recorded any U.S. federal or state income tax benefits for such losses as they have been fully offset by valuation allowances.

Critical Accounting Policies and Estimates

The discussion and analysis of our financial condition and results of operations are based upon our unaudited Financial Statements, which have been prepared in accordance with the rules and regulations of the Securities and Exchange Commission (“SEC”). The preparation of these Financial Statements requires us to make estimates and judgments that affect the reported amounts of assets, liabilities, revenues and expenses. On an ongoing basis, we evaluate our critical accounting policies and estimates. We base our estimates on historical experience and on various other assumptions that we believe to be reasonable under the circumstances, the results of which form the basis for making judgments about the carrying values of assets and liabilities that are not readily apparent from other sources. Actual results may differ from these estimates under different assumptions or conditions.

There have been no material changes to the critical accounting policies and estimates discussed in our Annual Report on Form 10-K for the year ended December 31, 2016.

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Results of Operations

Comparison of the three-month periods ended June 30, 2017 and 2016

(in thousands, except percentages)	Three-Month Periods Ended June 30, 2017	2016	$ Change	% Change
	(unaudited)			
Revenue:				
Product revenue	$ 16,548	$ 13,587	$ 2,961	22%
Service and other revenue	3,525	3,564	(39)	(1%)
Contractual revenue	—	3,596	(3,596)	(100%)
Total revenue	20,073	20,747	(674)	(3%)
Cost of Revenue:				
Cost of product revenue	8,155	7,115	1,040	15%
Cost of service and other revenue	3,917	2,988	929	31%
Total cost of revenue	12,072	10,103	1,969	19%
Gross profit	8,001	10,644	(2,643)	(25%)
Operating Expense:				
Research and development	16,883	17,522	(639)	(4%)
Sales, general and administrative	15,505	11,192	4,313	39%
Total operating expense	32,388	28,714	3,674	13%
Operating loss	(24,387)	(18,070)	(6,317)	(35%)
Interest expense	(826)	(795)	(31)	(4%)
Other income (expense), net	(326)	366	(692)	(189%)
Net loss	$ (25,539)	$ (18,499)	$ (7,040)	(38%)

Revenue

Total revenue for the three-month period ended June 30, 2017 was $20.1 million, compared to $20.7 million for the same period during 2016.

Product revenue for the three-month period ended June 30, 2017 consisted of $7.1 million from sales of Sequel and RSII instruments and $9.4 million from sales of consumables, for total product revenue of $16.5 million, compared to $8.6 million from sales of Sequel and RS II instruments and $5.0 million from sales of consumables, for total product revenue of $13.6 million for the same period during 2016. The increase in consumable sales was primarily attributable to an increase in instrument utilization and a larger installed base of instruments.

Service and other revenue of $3.5 million and $3.6 million for the three-month periods ended June 30, 2017 and 2016, respectively, was primarily derived from product maintenance agreements sold on our installed instruments.

There was no contractual revenue for the three-month period ended June 30, 2017. Contractual revenue for the three-month period ended June 30, 2016 related to the quarterly amortization of $3.6 million from the non-refundable upfront payment of $35.0 million we received during September 2013 pursuant to the “Roche Agreement”. In December 2016, we received notice from Roche that Roche had elected to terminate the Roche Agreement for convenience and the termination became effective February 10, 2017.

Gross Profit

Gross profit for the three-month period ended June 30, 2017 was $8.0 million, resulting in a gross margin of 39.9%. During the first quarter of 2017, we recorded a charge to cost of revenue of $1.3 million, and in the second quarter of 2017, we recorded an additional charge to cost of revenue of $0.3 million relating to leased RS II instruments primarily due to a change in the estimated useful life of these instruments. Gross profit for the second quarter of 2016 was 51.3%, which included $3.6 million of contractual revenue at 100% gross margin. Excluding this contractual revenue, adjusted gross margin for the second quarter of 2016 would have been 41.1%. Adjusted gross margin is not meant to be considered in isolation or as a substitute for gross margin. Adjusted gross margin is subject to limitations and should be read only in conjunction with our consolidated financial statements.

Cost of product revenue was $8.2 million for the three-month period ended June 30, 2017, compared to cost of product revenue of $7.1 million for the same period during 2016. Cost of service and other revenue for the three-month period ended June 30, 2017 was $3.9 million, compared to $3.0 million for the same period during 2016. The increase in cost of product revenue of $1.1 million was primarily driven by increased consumable sales year over year. The increase in cost of service and other revenue of $0.9 million

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was primarily due to increased service overhead cost to support a larger installed base, an increase in service material costs, and the charges associated with the change in the useful life of RS II instruments.

Research and Development Expense

During the three-month period ended June 30, 2017, research and development expense decreased by $0.6 million, or 4%, compared to the same period during 2016. The decrease in research and development expense was primarily attributable to the lower chip development costs. Research and development expense included stock-based compensation expense of $2.0 million and $2.1 million during the three-month periods ended June 30, 2017 and 2016, respectively.

Sales, General and Administrative Expense

During the three-month period ended June 30, 2017, sales, general and administrative expense increased by $4.3 million, or 38.5%, compared to the same period during 2016. The increase in sales, general and administrative expense was primarily attributable to an increase of $2.8 million in consulting and professional fees, including legal fees incurred in connection with the patent infringement litigation described under “Legal Proceedings” below. Other factors contributing to the increase included an increase in compensation expense as a result of increased headcount and an increase in facility expense. Sales, general and administrative expense included stock-based compensation expense of $2.4 million and $2.3 million during the three-month periods ended June 30, 2017 and 2016.

Interest Expense

Interest expense for the three-month period ended June 30, 2017 remained essentially flat compared to the same period during 2016. Interest expense related primarily to the debt facility entered into in February 2013.

Other income(expense), net

During the three-month period ended June 30, 2017, other income (expense), net increased by $0.7 million, compared to the same period during 2016. The increase in other income (expense), net was primarily attributable to the charge related to our payment of $4.5 million in outstanding principal under our debt facility in the second quarter of 2017.

Comparison of the six-month periods ended June 30, 2017 and 2016

(in thousands, except percentages)	Six-Month Periods Ended June 30, 2017	2016	$ Change	% Change
	(unaudited)			
Revenue:				
Product revenue	$ 37,842	$ 25,966	$ 11,876	46%

Service and other revenue	7,146	6,716	430	6%
Contractual revenue	—	7,192	(7,192)	(100%)
Total revenue	44,988	39,874	5,114	13%
Cost of Revenue:				
Cost of product revenue	19,517	13,995	5,522	39%
Cost of service and other revenue	8,533	5,731	2,802	49%
Total cost of revenue	28,050	19,726	8,324	42%
Gross profit	16,938	20,148	(3,210)	(16%)
Operating Expense:				
Research and development	33,854	33,883	(29)	0%
Sales, general and administrative	30,770	22,900	7,870	34%
Total operating expense	64,624	56,783	7,841	14%
Operating loss	(47,686)	(36,635)	(11,051)	(30%)
Interest expense	(1,664)	(1,574)	(90)	(6%)
Other expense, net	(56)	358	(414)	(116%)
Net loss	$ (49,406)	$ (37,851)	$ (11,555)	(31%)

Revenue

Total revenue for the six-month period ended June 30, 2017 was $45.0 million, compared to $39.9 million for the same period during 2016.

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Product revenue for the six-month period ended June 30, 2017 consisted of $19.7 million from sales of Sequel and RSII instruments and $18.1 million from sales of consumables, for total product revenue of $37.8 million, compared to $16.3 million from sales of Sequel and RS II instruments and $9.7 million from sales of consumables, for total product revenue of $26.0 million for the same period during 2016. The increase in instrument sales for the six-month period ended June 30, 2017 was primarily attributable to increased Sequel instrument shipments and installations. The increase in consumable sales was primarily attributable to an increase in instrument utilization and a larger installed base of instruments.

Service and other revenue was $7.1 million and $6.7 million for the six-month periods ended June 30, 2017 and 2016, respectively, and was primarily derived from product maintenance agreements sold on our installed instruments.

There was no contractual revenue for the six-month period ended June 30, 2017. Contractual revenue for the six-month period ended June 30, 2016 related to the quarterly amortization of $3.6 million from the non-refundable upfront payment of $35.0 million we received during September 2013 pursuant to the “Roche Agreement”. In December 2016, we received notice from Roche that Roche had elected to terminate the Roche Agreement for convenience and the termination became effective February 10, 2017.

Gross Profit

Gross profit for the six-month period ended June 30, 2017 was $16.9 million, resulting in a gross margin of 37.7%. During the six-month period ended June 30, 2017, we recorded a total charge of $1.6 million to cost of revenue relating to leased RS II instruments primarily due to a change in the estimated useful life of these instruments. Gross profit for the same period of 2016 was 50.5%, which included $7.2 million of contractual revenue at 100% gross margin. Excluding this contractual revenue, adjusted gross margin for the six-month period ended June 30, 2016 would have been 39.6%.

Cost of product revenue was $19.5 million for the six-month period ended June 30, 2017, compared to cost of product revenue of $14.0 million for the same period during 2016. Cost of service and other revenue for the six-month period ended June 30, 2017 was $8.5 million, compared to $5.7 million for the same period during 2016. The increase in cost of product revenue of $5.5 million was primarily driven by the increased instrument installs and consumable sales year over year. The increase in cost of service and other revenue of $2.8 million was primarily due to the higher labor and material costs required to service a larger installed base of Sequel instruments and the charge associated with the leased RS II instruments described above.

Research and Development Expense

For the six-month period ended June 30, 2017, research and development expense was $33.9 million, remaining flat compared to $33.9 million for the same period of 2016. Research and development expense included stock-based compensation expense of $4.1 million and $4.0 million during the six-month periods ended June 30, 2017 and 2016, respectively.

Sales, General and Administrative Expense

During the six-month period ended June 30, 2017, sales, general and administrative expense increased by $7.9 million, or 34.4%, compared to the same period during 2016. The increase in sales, general and administrative

expense was primarily attributable to an increase of $5.1 million in consulting and professional fees, including legal fees incurred in connection with the patent infringement litigation described under “Legal Proceedings”. Other factors contributing to the increase included an increase of $1.8 million in compensation expense as a result of increased headcount and an increase in facility expenses. Sales, general and administrative expense included stock-based compensation expense of $4.8 million and $4.5 million during the six-month periods ended June 30, 2017 and 2016, respectively.

We expect our total selling, general and administrative expenses to increase in 2017 compared to 2016.

Interest Expense

Interest expense for the six-month period ended June 30, 2017 remained essentially flat compared to the same period during 2016. Interest expense related primarily to the debt facility entered into in February 2013.

Liquidity and Capital Resources

Liquidity

During 2016, we adopted ASU 2014-15, Disclosure of Uncertainties about an Entity’s Ability to Continue as a Going Concern (“ASU 2014-15”). ASU 2014-15 requires companies to evaluate whether there is substantial doubt about an entity’s ability to continue as a going concern and to provide related footnote disclosure. Management performed such an assessment and concluded there was no substantial doubt about our ability to continue as a going concern.

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Since our inception, we have financed our operations primarily through product sales, issuance of common stock and convertible preferred stock, in addition to our debt facility and payments from Roche pursuant to the terms of the Roche Agreement.

Cash, cash equivalents and investments at June 30, 2017 totaled $102.6 million, compared to $72.0 million at December 31, 2016. We believe that our existing cash, cash equivalents and investments will be sufficient to fund our projected operating requirements for at least 12 months; however, we may raise additional capital in the future. Our view regarding sufficiency of cash and liquidity is primarily based on our financial forecast for 2017 and into the second quarter of 2018, which includes various assumptions regarding demand for our products. Generally, we expect demand for our products to increase.

Factors that may affect our capital needs include, but are not limited to, slower than expected adoption of our products resulting in lower sales of our products and services; future acquisitions; our ability to obtain new collaboration and customer arrangements; the progress of our research and development programs; initiation or expansion of research programs and collaborations; litigation costs, including the costs involved in preparing, filing, prosecuting, defending and enforcing intellectual property rights; the purchase of patent licenses; and other factors.

To the extent we raise additional funds through the sale of equity or convertible debt securities, the issuance of such securities will result in dilution to our stockholders. There can be no assurance that such funds will be available on favorable terms, or at all. If adequate funds are not available, we may be required to curtail operations significantly or to obtain funds by entering into collaboration or debt agreements on unattractive terms. Our inability to raise capital could have a material adverse effect on our business, financial condition and results of operations.

Operating Activities

Our primary uses of cash in operating activities are for the development of ongoing product enhancements and future products, manufacturing, and support functions related to our sales, general and administrative activities. The net cash used for the six-month periods ended June 30, 2017 and 2016 primarily reflected the net loss for those periods, partially offset by non-cash operating expenses including depreciation and stock-based compensation, as well as changes in working capital.

We used $29.5 million of cash from operating activities for the six-month period ended June 30, 2017, compared to cash usage of $39.2 million for the same period in 2016.

Cash used in operating activities for the six-month period ended June 30, 2017 was due primarily to a net loss of $49.4 million, adjusted for non-cash items such as stock-based compensation of $10.0 million and depreciation of $4.8 million. The change in net operating assets and liabilities was primarily attributed to a decrease in prepaid expenses and other assets of $6.4 million, of which $4.3 million related to the payments we received from our Prior Landlord as a result of exiting a portion of our prior facilities, partially offset by a decrease of $2.3 million in accrued expenses and an increase of $2.2 million in inventory.

Cash used in operating activities for the six-month period ended June 30, 2016 was due primarily to a net loss of $37.9 million, a reduction in deferred contractual revenue of $7.2 million, an increase in accounts receivable of $5.2 million and an increase in inventory of $4.5 million, partially offset by stock-based compensation of $9.6 million and depreciation of $1.8 million.

Investing Activities

Our investing activities consist primarily of capital expenditures and investment purchases, sales and maturities. We used $17.1 million of cash from investing activities for the six-month period ended June 30, 2017, compared to cash usage of $32.4 million for the same period in 2016.

Cash used in investing activities for the six-month period ended June 30, 2017 was due primarily to net maturities and sales of investments of $11.0 million and net purchases of property and equipment of $6.1 million.

Cash used in investing activities for the six-month period ended June 30, 2016 was due primarily to net purchases of investments of $29.2 million and net purchases of property and equipment of $3.3 million.

Financing Activities

We had $66.3 million of cash provided from financing activities for the six-month period ended June 30, 2017, compared to $62.7 million of cash provided from financing activities for the same period in 2016.

Cash provided by financing activities during the six-month period ended June 30, 2017 was due primarily to net proceeds of $52.7 million from our underwritten public equity offering, after deducting underwriter commissions and paid offering expenses, net proceeds of $11.9 million from our common stock “at-the-market” offering program and $6.2 million from the issuance of common stock through our equity compensation plans, partially offset by our payment of $4.5 million in outstanding principal under our debt facility in the second quarter of 2017.

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Cash provided by financing activities during the six-month period ended June 30, 2016 was due primarily to net proceeds of $58.2 million from our common stock “at-the-market” offering program and $4.5 million from the issuance of common stock through our equity compensation plans.

Capital Resources

“At-the-Market” Equity Offering

During the three-month period ended June 30, 2016, we issued 3.4 million shares of our common stock at an average price of $9.56 per share through our “at-the-market” offering, resulting in net proceeds of $31.7 million; during the six-month period ended June 30, 2016, we issued 6.5 million shares of our common stock through our “at-the-market” offering, resulting in net proceeds of $58.2 million.

In February 2017, we filed an additional prospectus supplement pursuant to which we could offer and sell, from time to time, additional shares of our common stock having an aggregate offering price of up to $60.0 million.

During the six-month period ended June 30, 2017 we issued 3.2 million shares of our common stock at an average price of $3.86 per share through our “at-the-market” offering, resulting in net proceeds of $11.9 million. We terminated our current “at-the-market” offering program in June 2017.

We paid a commission equal to 3% of the gross proceeds from the sale of shares of our common stock under the sales agreement. We are not obligated to sell shares of our common stock under the sales agreement.

Subject to certain exceptions set forth in our Facility Agreement, holders of our Notes may elect to receive up to 25% of the net proceeds from financing activities that include an equity component as prepayment of the Notes to be applied first, to accrued and unpaid interest and second, to principal. However, in April 2017 holders representing a majority of the aggregate principal amount of the outstanding Notes waived such right in connection with the issuance and sale of shares of common stock under our “at-the-market” offering.

Underwritten Public Equity Offering

On June 15, 2017, we entered into an underwriting agreement, relating to the public offering of 15,419,354 shares of our common stock, $0.001 par value per share, at a price to the public of $3.10 per share. Under the terms of the underwriting agreement, we also granted the underwriters a 30-day option to purchase up to an additional 2,312,903 shares of our common stock, which was subsequently exercised in full, and the offering, including the sale of shares of common stock subject to the underwriters’ option, closed on June 20, 2017. In total, we sold 17,732,257 shares of our common stock at a price of $3.10 per share. We paid a commission equal to 4% of the gross proceeds from the sale of shares of our common stock under the underwriting agreement. The total net proceeds to us from the offering, after deducting the underwriting discount and paid offering expenses, was approximately $52.7 million, which excludes approximately $0.2 million of offering expenses that were unpaid as of June 30, 2017.

Debt Facility Agreement

Under the terms of our February 2013 debt agreement with Deerfield (the “Facility Agreement”), we received $20.5 million and issued promissory notes in the aggregate principal amount of $20.5 million (the “Notes”). The Notes bear

simple interest at a rate of 8.75% per annum, payable quarterly in arrears commencing on April 1, 2013 and on the first business day of each January, April, July and October thereafter. The Facility Agreement has a maximum term of seven years. We received net proceeds of $20.0 million, representing $20.5 million of gross proceeds, less a $500,000 facility fee, before deducting other expenses of the transaction.

The Facility Agreement also contains various representations and warranties, and affirmative and negative covenants, customary for financings of this type, including restrictions on our ability to incur additional indebtedness or liens on our assets, except as permitted under the Facility Agreement. In addition, the Facility Agreement requires us to maintain consolidated cash and cash equivalents on the last day of each calendar quarter of not less than $2.0 million. As security for our repayment of our obligations under the Facility Agreement, we granted the lenders a security interest in substantially all of our property and interests in property.

Subject to certain exceptions set forth in the Facility Agreement, holders representing a majority of the aggregate principal amount of the outstanding Notes issued pursuant to the Facility Agreement may elect to receive up to 25% of the net proceeds from any financing that includes an equity component. To the extent we raise additional capital in the future through the sale of common stock, including without limitation, sales of common stock pursuant to an “at-the-market” offering program, we may be obligated, at the election of the holders of the Notes, to pay 25% of the net proceeds from any such financing activities as partial payment of the Notes.

On June 23, 2017, pursuant to a partial exercise by the Notes holders of their right to elect to receive up to 25% of the net proceeds from any financing that includes an equity component, we paid $4.5 million of outstanding principal, together with accrued and unpaid interest, to one of the Notes holders with proceeds from our underwritten public equity offering.

As of June 30, 2017, we had an outstanding principal amount $16.0 million remaining in the Notes. As of June 30, 2017, $2.6

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million out of the outstanding $16.0 million aggregate principal was reclassified from “Notes payable, non-current” to “Notes payable, current”, as that portion of the principal becomes due by June 30, 2018.

Contractual Obligations

Leases

In December 2009, we entered into a lease agreement for a manufacturing and office facility in Menlo Park. For the facility to meet our needs and operating requirements, substantial tenant improvements, including improvements to the structural elements and principal operating systems of the facility, were necessary. The lessor provided a tenant improvement allowance of $1.8 million to apply towards the necessary improvements and we remained obligated for additional amounts over the afforded allowance. Due to our involvement in and the nature of the renovations made to the facility and our obligations to fund the costs of renovations exceeding the incentives afforded to us, we accounted for the facility as if we were the owner. Accordingly, we recorded $3.0 million of building and leasehold improvement assets, reflecting the $1.2 million fair value of the facility prior to commencing renovations and the $1.8 million of landlord incentives within property and equipment, net and a corresponding liability recorded to facility financing obligation.

As a result of the lease amendment agreement described below, future rent expense associated with our prior Menlo Park facility leases was reduced to zero. The remaining long-term facility financing obligations associated with these leases, presented as “Other liabilities, non-current” on the condensed consolidated balance sheets at June 30, 2017 and December 31, 2016, were $0 and $1.7 million, respectively.

Lease Amendment Agreement

On July 23, 2015, we entered into a Lease Amendment Agreement (the “Lease Amendment Agreement”) with Peninsula Innovation Partners, LLC (the “Prior Landlord”), which amends the terms and conditions of certain of our prior Menlo Park facility real property leases. The Lease Amendment Agreement provides for, among other things, amendments of the term for certain of the leases with the Prior Landlord, the termination of all renewal, expansion and extension rights contained in any of the existing leases with the Prior Landlord (including our options to extend the terms for certain of the existing leases for two consecutive five-year periods), as well as rent abatement for a specified period of time. As consideration for our agreement to amend the existing leases pursuant to the Lease Amendment Agreement, and subject to the terms and conditions contained therein, we became eligible to receive up to four payments of $5.0 million each from the Prior Landlord over time (the “Landlord Payments”), and rent abatement for the remainder of the lease. In the event that we breach any of the leases and fail to cure such breach within the time permitted, the Prior Landlord would have no obligation to make the final $5.0 million payment. On September 1, 2015, the permit process related to an architectural approval and a change of use permit with respect to our new premises at 1305 O’Brien Drive (formerly 1315 O’Brien Drive), Menlo Park, California (the “O’Brien Premises”) was completed, which satisfied the contingencies under the Lease Amendment Agreement. As a result, we recorded $23.0 million in “Gain on lease amendments” in the consolidated statements of operations and comprehensive loss for the three-month period ended September 30, 2015, reflecting that our rent payments were reduced to zero for the remaining term of our existing Menlo Park facility real property leases, and the aggregate of $20.0 million in Landlord Payments became receivable and any associated financing obligation was revalued. Of the $20.0 million remaining Landlord Payments, the first $5.0 million Landlord Payment was received in September 2015, the second $5.0 million Landlord Payment was received in February 2016 and the third $5.0 million Landlord Payment was received in August 2016.

In June 2016, we entered into a Second Lease Amendment Agreement with the Prior Landlord that modified the payment schedule for the final $5.0 million. At December 31, 2016, the final $5.0 million landlord payment was recorded in “Prepaid Expenses and Other Current Assets” in the condensed consolidated balance sheets.

In January 2017, we entered into a Third Lease Amendment Agreement with the Prior Landlord that increased the amount of the final $5.0 million Landlord Payments by $65,000. During the first quarter of 2017, we received Landlord Payments totaling $2,628,000.

In May 2017, we entered into a Fourth Lease Amendment Agreement with the Prior Landlord, based on which we turned over the 940 Hamilton and 1010 Hamilton buildings to the Prior Landlord. Accordingly, in June 2017 we received $1,682,000 in Landlord Payments, resulting in a remaining balance of $755,000 in “Prepaid Expenses and Other Current Assets” in the condensed consolidated balance sheets at June 30, 2017.

The 940 Hamilton building was a capital lease with a long-term facility financing obligation associated with this lease included in “Other liabilities, non-current” and the corresponding building and related leasehold improvements were included in “Property and equipment, net” of the condensed consolidated balance sheets. Upon turning over the building to the Prior Landlord, the capital lease was terminated, resulting in the extinguishment of the facility financing obligation.

O’Brien Lease Agreement

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On July 22, 2015, we entered into a new lease agreement (the "O'Brien Lease") with respect to the O'Brien Premises. The term of the O'Brien Lease is one hundred thirty-two (132) months, commencing on the date that is the later of April 15, 2016 or the date on which the O'Brien Premises landlord has substantially completed certain shell improvements and tenant improvements. In December 2016, we entered into an amendment to the O'Brien Lease which defined the commencement date of the lease to be October 25, 2016, notwithstanding that such substantial completion did not occur until the first quarter of 2017. Base monthly rent was abated for the first six (6) months of the lease term and thereafter is $540,000 per month during the first year of the lease term, with specified annual increases thereafter until reaching $711,000 per month during the last twelve (12) months of the lease term. We were required to pay $2.2 million in prepaid rent which was applied to the monthly rent installments due for the first to fourth months after the rent abatement period; and, as such, $2.2 million was recorded in "Prepaid expense and other current assets" in the condensed consolidated balance sheet as of both Mach 31, 2017 and December 31, 2016. As of June 30, 2017, $1.1 million was recorded in "Prepaid expense and other current assets" in the condensed consolidated balance sheet. We were required to establish a deposit of $4.5 million in the form of a letter of credit in October 2015; and, as such, $4.5 million was recorded in "Long-term restricted cash" in the condensed consolidated balance sheet as of both June 30, 2017 and December 31, 2016.

The landlord was obligated to construct certain warm shell improvements at the landlord's cost and expense and provide us with a tenant improvement allowance in the amount of $12.6 million. Construction was completed in phases and we began moving into the O'Brien Premises during January 2017. By the end of the first quarter of 2017, improvements associated with the entire O'Brien Premises were substantially completed. As a result, during the first quarter of 2017 we capitalized $28.9 million of tenant improvements, of which $12.6 million was paid by the landlord as a tenant improvement allowance. As the $12.6 million tenant improvement allowance is accounted for as a lease incentive, $12.6 million was recorded to "Deferred rent, non-current", which will be amortized over the lease term of approximately 11 years. In addition, as the premises were completed in phases during the first half of 2017, tenant improvements were placed into service in phases once construction was substantially complete and the related asset was ready for its intended use.

As of June 30, 2017, the future annual minimum lease payments for the O'Brien lease were as follows:

Years ending December 31,	Amount (in thousands)
Remaining of 2017	$ 3,171
2018	6,822
2019	6,930
2020	7,056
2021	7,272
Thereafter	46,710
Total minimum lease payments	$ 77,961

Off-Balance Sheet Arrangements

As of June 30, 2017, we did not have any off-balance sheet arrangements.

In the ordinary course of business, we enter into standard indemnification arrangements. Pursuant to these arrangements, we indemnify, hold harmless, and agree to reimburse the indemnified parties for losses suffered or incurred by the indemnified party in connection with any trade secret, copyright, patent or other intellectual property infringement claim by any third party with respect to its technology, or from claims relating to our performance or non-performance under a contract, any defective products supplied by us, or any acts or omissions, or willful misconduct, committed by us or any of our employees, agents or representatives. The term of these indemnification agreements is generally perpetual after the execution of the agreement. The maximum potential amount of future payments we could be required to make under these agreements is not determinable because it involves claims that may be made against us in future periods, but have not yet been made. To date, we have not incurred costs to defend lawsuits or settle claims related to these indemnification agreements.

We also enter and have entered into indemnification agreements with our directors and officers that may require us to indemnify them against liabilities that arise by reason of their status or service as directors or officers, except as prohibited by applicable law. In addition, we may have obligations to hold harmless and indemnify third parties involved with our fundraising efforts and their respective affiliates, directors, officers, employees, agents or other representatives against any and all losses, claims, damages and liabilities related to claims arising against such parties pursuant to the terms of agreements entered into between us and such third parties in connection with such fun raising efforts. To the extent that such indemnification obligations apply to the lawsuits described in “Note 7. Commitments and Contingencies” in Part I, Item 1 of this Form 10-Q, any associated expenses incurred are included within the related accrued litigation expense amounts. No additional liability associated with such indemnification agreements has been recorded as of June 30, 2017.

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Item 3.Quantitative and Qualitative Disclosures About Market Risk

Interest Rate and Market Risk

Our exposure to market risk is confined to our cash, cash equivalents and investments, all of which have maturities of less than three years. The goals of our investment policy are preservation of capital, fulfillment of liquidity needs and fiduciary control of cash, cash equivalents and investments. We also seek to maximize income from our investments without assuming significant risk. To achieve our goals, we maintain a portfolio of cash equivalents and investments in a variety of securities of high credit quality. The securities in our investment portfolio are not leveraged, are classified as available for sale, and are, due to their short-term nature, subject to minimal interest rate risk. We currently do not hedge interest rate exposure. Because of the short-term maturities of our investments, we do not believe that a hypothetical 10% change in market interest rates would have any material negative impact on the value of our investment portfolio.

Foreign Exchange Risk

The majority of our expense and capital purchasing activities are transacted in U.S. dollars. However, a portion of our operations consists of sales activities outside of the United States; therefore, we have foreign exchange exposures relating to non-U.S. dollar revenues, operating expenses, accounts receivable, accounts payable, and currency balances. Our primary exposure is with the Euro. Actual gains and losses in the future may differ materially from the hypothetical gains and losses based on changes in the timing and amount of foreign currency exchange rate movements and our actual exposure; however, we do not believe that the effect of a hypothetical 10% change in foreign currency exchange rates applicable to our business would have a material impact on our historical consolidated financial statements.

Our international operations are subject to risks typical of international operations, including, but not limited to, differing economic conditions, changes in political climate, differing tax structures, other regulations and restrictions and foreign exchange rate volatility.

Item 4.Controls and Procedures.

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 defined in Rules 13a-15(e) and 15d-15(e) of the Exchange Act) as of the end of the period covered by this Quarterly Report on Form 10-Q. Based on this evaluation, our chief executive officer and our chief financial officer concluded that our disclosure controls and procedures are designed at a reasonable assurance level and are effective to provide reasonable assurance that information required to be disclosed by us in the reports that we file or submit under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the SEC’s rules and forms and that such information is accumulated and communicated to our management, including our chief executive officer and our chief financial officer, as appropriate, to allow timely decisions regarding required disclosure.

In designing and evaluating the disclosure controls and procedures, management recognizes that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving the desired

control objectives. In addition, the design of disclosure controls and procedures must reflect the fact that there are resource constraints and that management is required to apply its judgment in evaluating the benefits of possible controls and procedures relative to their costs.

Changes in Internal Control Over Financial Reporting

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

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PART II – OTHER INFORMATION

Item 1.Legal Proceedings

On November 2, 2016, we filed a complaint against Oxford Nanopore Technologies Ltd., Oxford Nanopore Technologies, Inc. (“ONT Inc.”) and Metrichor, Ltd. (“Metrichor” and, together with ONT Inc., “ONT”) with the U.S. International Trade Commission (“USITC”) for patent infringement. On December 5, 2016, the USITC provided notice that an investigation had been instituted based on the complaint. We are seeking exclusionary relief with respect to several ONT products, including ONT’s MinION and PromethION devices. The complaint is based on our U.S. Patent No. 9,404,146, entitled “Compositions and methods for nucleic acid sequencing” which covers novel methods for sequencing single nucleic acid molecules using linked double-stranded nucleic acid templates, providing improved sequencing accuracy. On March 1, 2017, we filed an amended complaint to add a second patent in the same patent family, U.S. Patent No. 9,542,527, which was granted on January 10, 2017, to the investigation. We are seeking, among other things, an exclusion order permanently barring entry of infringing ONT products into the United States, and a cease and desist order preventing ONT from advertising and selling infringing products in the United States. On May 23, 2017, the Administrative Law Judge (“ALJ”) assigned to the matter issued an order construing certain claim terms of the asserted patents. On June 8, 2017, ONT filed a summary determination motion to terminate the proceedings based on the ALJ’s claim construction decision, which motion was not opposed by us. The ALJ granted the motion on July 19, 2017, and, on July 31, 2017, we filed a petition to review with the USITC to correct what we believe was an incorrect construction of the claims.

On February 2, 2017, we filed a claim in the High Court of England and Wales against Oxford Nanopore Technologies Ltd. (“ONT Ltd.”) and Metrichor for infringement of Patent EP(UK) 3 025 542, which is in the same patent family as the patents asserted in the USITC action referred to above. We are seeking remedies including injunctive relief, damages, and costs. On March 27, 2017, the defendants in the case filed their defense and counterclaim, denying infringement and seeking a declaration that the asserted patent is invalid. We filed our reply and defense to counterclaim on April 12, 2017.

On March 15, 2017, we filed a complaint in the U.S. District Court for the District of Delaware against ONT Inc. for patent infringement. The complaint is based on our U.S. Patent No. 9,546,400, entitled “Nanopore sequencing using n-mers” which covers novel methods for nanopore sequencing of nucleic acid molecules using the signals from multiple monomeric units. This patent was granted on January 17, 2017. We are seeking remedies including injunctive relief, damages and costs. On May 8, 2017, the defendants filed a motion to dismiss the complaint, alleging that the asserted patent claims recite patent ineligible subject matter. We filed our response on June 5, 2017.

On April 21, 2017, ONT Ltd. and Harvard University filed a claim against us in the High Court of England and Wales for infringement of Patent EP(UK) 1 192 453, a patent owned by Harvard University and entitled “Molecular and atomic scale evaluation of biopolymers,” and for which ONT Ltd. alleges it holds an exclusive license. ONT Ltd. and Harvard University are seeking remedies including injunctive relief, damages, and costs. On April 25, 2017, ONT Ltd. announced that it also had filed a claim against us in the District Court of Mannheim, Germany, for infringement of the German version of the patent. We received service in this matter on July 11, 2017.

Litigation is inherently unpredictable, and it is too early in the proceedings to predict the outcome of these lawsuits or any impact they may have on us. As such, the estimated financial effect associated with these complaints cannot be made as of this 10-Q filing time.

From time to time, we may also be involved in a variety of other claims, lawsuits, investigations and proceedings relating to securities laws, product liability, patent infringement, contract disputes, employment and other matters that arise in the normal course of our business. In addition, third parties may, from time to time, assert claims against us in the form of letters and other communications. We record a provision for contingent losses when it is both probable that a liability has been incurred and the amount of the loss can be reasonably estimated. We currently do not believe that the ultimate outcome of any of the matters described above is probable or reasonably estimable, or that these matters will have a material adverse effect on our business; however, the results of litigation and claims are inherently unpredictable. Regardless of the outcome, litigation can have an adverse impact on us because of litigation and settlement costs, diversion of management resources and other factors.

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Item 1A. Risk Factors

You should consider carefully the risks and uncertainties described below, together with all of the other information in our public filings with the Securities and Exchange Commission, which could materially affect our business, financial condition, results of operations and prospects. The risks described below are not the only risks facing us. Risks and uncertainties not currently known to us or that we currently deem to be immaterial also may materially affect our business, financial condition, results of operations and prospects.

Risks Related to Our Business

We have limited experience as a commercial company.

Our first commercial product launched in 2011 and we have had limited sales to date. As such, we have limited historical financial data upon which to base our projected revenue, planned operating expenses or upon which to evaluate our company and our commercial prospects. Furthermore, in September 2015, we launched a new nucleic acid sequencing platform, the PacBio Sequel®™ System. Based on our limited experience in developing and marketing our existing products and launching new products, we may not be able to effectively:

- drive adoption of our current and future products, including the Sequel System;
- attract and retain customers for our products;
- provide appropriate levels of customer training and support for our products;
- implement an effective marketing strategy to promote awareness of our products;
- develop, manufacture and commercialize new products or achieve an acceptable return on our manufacturing or research and development efforts and expenses;
- comply with regulatory requirements applicable to our products;
- anticipate and adapt to changes in our market;
- accommodate customer expectations and demands with respect to our products, increase product adoption by our existing customers or develop new customer relationships;
- grow our market share by marketing and selling our products to new and additional market segments;
- maintain and develop strategic relationships with vendors and manufacturers to acquire necessary materials for the production of our existing or future products;
- adapt or scale our manufacturing activities to meet potential demand at a reasonable cost;
- avoid infringement and misappropriation of third-party intellectual property;
- obtain any necessary licenses to third-party intellectual property on commercially reasonable terms;
- obtain valid and enforceable patents that give us a competitive advantage or enforce existing patents;
- protect our proprietary technology; and
- attract, retain and motivate qualified personnel.

The risks noted above, especially with respect to the marketing, sales, and commercialization of our products into the markets that Roche would have addressed under the Roche Agreement, may be heightened by the recent termination of the Roche Agreement. In addition, a high percentage of our expenses is and will continue to be fixed. Accordingly, if we do not generate revenue as and when anticipated, our losses may be greater than expected and our operating

results will suffer.

We have incurred losses to date, and we expect to continue to incur significant losses as we develop our business and may never achieve profitability.

We have incurred net losses since inception and we cannot be certain if or when we will produce sufficient revenue from our operations to support our costs. While we achieved profitability for the quarter ended September 30, 2015, this result was largely due to a one-time gain on lease amendments. We have incurred net losses for all other fiscal periods, and, even if profitability is achieved in the future, we may not be able to sustain profitability on a consistent basis. We expect to continue to incur substantial losses and negative cash flow from operations for the foreseeable future.

If our products fail to achieve and sustain sufficient market acceptance, we will not generate expected revenue and our business may not succeed.

We cannot be sure that our current or future products will gain acceptance in the marketplace at levels sufficient to support our costs. Our success depends, in part, on our ability to expand the market for genetic analysis to include new applications that are

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not practicable with other current technologies. To accomplish this, we must successfully commercialize, and continue development of, our proprietary Single Molecule, Real-Time (SMRT®) Sequencing technology for use in a variety of life science and other applications, including uses by academic, government and clinical laboratories, as well as pharmaceutical, diagnostic, biotechnology and agriculture companies, among others. There can be no assurance that we will be successful in securing additional customers for our products. For example, we have limited experience commercializing and selling products outside of the academic and research settings, and we cannot assure you that we can successfully acquire additional customers in additional markets. Furthermore, we cannot guarantee that our products will be satisfactory to potential customers in the markets we seek to reach. These markets are new and dynamic, and there can be no assurance that they will develop as quickly as we anticipate, that they will reach their full potential or that they will be receptive to our most recently-launched product, the Sequel System. As a result, we may be required to refocus our marketing efforts, and we may have to make changes to the specifications of our products to enhance our ability to enter particular markets more quickly. Even if we are able to implement our technology successfully, we and/or our sales and distribution partners may fail to achieve or sustain market acceptance of our current or future products across the full range of our intended life science and other applications. Given the loss of Roche as a partner, we may need to either expand our internal capabilities or collaborate with other partners, or both, in order to successfully expand sales of our products in the markets we seek to reach, including the markets that Roche would have addressed under the Roche Agreement, which we may be unable to do at the scale required to support our business. If the market for our products grows more slowly than anticipated, if we are unable to successfully scale or otherwise ensure sufficient manufacturing capacity for new products to meet demand, if we are not able to successfully market and sell our products, if competitors develop better or more cost-effective products, or if we are unable to further grow our customer base or do not realize the growth with existing customers that we are expecting, our current and future sales and revenue would be materially harmed and our business may not succeed.

If we are unable to successfully develop and timely manufacture our products, including Sequel Systems and related consumables, our business may be adversely affected.

In light of the highly complex technologies involved in our products, there can be no assurance that we will be able to manufacture and commercialize our new products on a timely basis or continue providing adequate support for our existing products. The commercial success of our products, including the Sequel System, depends on a number of factors, including performance and reliability of the system, our anticipating and effectively addressing customer preferences and demands, the success of our sales and marketing efforts, effective forecasting and management of product demand, purchase commitments and inventory levels, effective management of manufacturing and supply costs, and the quality of the Sequel System, including related consumables such as SMRT Cells and reagents. Should we face delays in or discover unexpected defects during the further development or manufacturing process of Sequel System instruments or consumables, including any delays or defects in software development or product functionality, the timing and success of the rollout and scaling of the Sequel System may be significantly impacted, which may materially and negatively impact our revenue and gross margin. The ability of our customers to successfully utilize the Sequel System will also depend on our ability to deliver high quality SMRT Cells and reagents. We have designed new SMRT Cells and other consumables for the Sequel System, and have transferred production of the new SMRT Cells from a prototype chip vendor to a high-volume manufacturer. Our production of the new SMRT Cells has been and may in the future be below desired levels, and we have experienced and may experience in the future manufacturing delays, product or quality defects, SMRT Cell variability, and other issues, including unanticipated delays and other issues in connection with our transition to the high-volume manufacturer, any of which could negatively impact our ability to sell Sequel Systems or result in other material adverse effects on our business, financial condition and results of operations.

The development of our products is complex and costly. Problems in the design or quality of our products may have a material and adverse effect on our brand, business, financial condition, and operating results, and could result is us losing our certifications from the International Organization for Standardization ("ISO"). If we were to lose ISO certification, then our customers might choose not to purchase products from us and this could adversely impact our ability to develop products approved for clinical uses. Unanticipated problems with our products could divert substantial resources, which may impair our ability to support our new and existing products, and could substantially increase our costs. If we encounter development challenges or discover errors in our products late in our development cycle, we may be forced to delay product shipments or the scaling of manufacturing or supply. In particular, if the continued rollout of the Sequel System is delayed or is not successful, we may not be able to achieve an acceptable return, if any, on our substantial research and development efforts, and our business may be materially and adversely affected. The expenses or losses associated with delayed or unsuccessful product development or lack of market acceptance of our new products could materially and adversely affect our business, financial condition and results of operations.

Our research and development efforts may not result in the benefits we anticipate, and our failure to successfully market, sell, and commercialize our current and future products could have a material adverse effect on our business, financial condition and results of operations.

We have dedicated significant resources to developing our current products, including sequencing systems and consumables based on our proprietary SMRT sequencing technology and our Sequel System. We are also engaged in substantial and complex

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research and development efforts, which, if successful, may result in the introduction of new products in the future. Our research and development efforts are complex and require us to incur substantial expenses. We may not be able to develop and commercialize new products, obtain regulatory approval if necessary, or achieve an acceptable return, if any, on our research and development efforts and expenses. There can also be no assurance that we will be able to develop and manufacture future products as a result of our research and development efforts, or that we will be able to market, sell and commercialize the products that result from our research and development efforts. Furthermore, in December 2016, Roche elected to terminate the Roche Agreement, and the termination became effective February 10, 2017. We may therefore need to expand our internal capabilities or seek new partnerships or collaborations, or both, in order to successfully market, sell and commercialize the products that we have developed in the markets we seek to reach, including the markets that Roche would have addressed under the Roche Agreement.

We must successfully manage new product introductions and transitions, we may incur significant costs during these transitions, and they may not result in the benefits we anticipate.

If our products and services fail to deliver the performance or results expected by our current and future customers, or are not delivered on a timely basis, our reputation and credibility may suffer, our current and future sales and revenue may be materially harmed and our business may not succeed. For instance, if we are not able to realize the benefits we anticipate from the development and commercialization of the Sequel System or our future products, including those that may be developed for clinical uses, it could have a material adverse effect on our business, financial condition and results of operations. In addition, the introduction of future products may lead to our limiting or ceasing development of further enhancements to our existing products as we focus our resources on new products, and could result in reduced marketplace acceptance and loss of sales of our existing products, materially adversely affecting our revenue and operating results. The introduction of new products, such as the Sequel System, may also have a negative impact on our revenue in the near-term as our current and future customers may delay or cancel orders of existing products in anticipation of new products and we may also be pressured to decrease prices for our existing products. Further, we have experienced, and may in the future experience, difficulty in managing or forecasting customer reactions, purchasing decisions or transition requirements with respect to newly-launched products, such as the Sequel System. We have incurred and may continue to incur significant costs in completing the transitions, including costs of write-downs of our products, as current or future customers transition to new products. If we do not successfully manage these product transitions, our business, reputation and financial condition may be materially and adversely affected.

We rely on other companies for the manufacture of certain components and sub-assemblies and intend to outsource additional sub-assemblies in the future. We may not be able to successfully scale the manufacturing process necessary to build and test multiple products on a full commercial basis, which could materially harm our business.

Our products are complex and involve a large number of unique components, many of which require precision in manufacturing. The nature of our products requires customized components that are currently available only from a limited number of sources, and in some cases, single sources. We have chosen to source certain critical components from a single source, including suppliers for our SMRT Cells, reagents and instruments. Furthermore, we have transferred production of the SMRT Cells for our Sequel System from a prototype chip vendor to a high-volume manufacturer and we have experienced, and may in the future experience, unanticipated delays and other issues in connection with such transition. If we are required to purchase these components from alternative sources, it could take several months or longer to qualify the alternative sources. If we are unable to secure a sufficient supply of these product components on a timely basis, or if these components do not meet our expectations or specifications for quality and functionality, our operations and manufacturing will be materially and adversely affected, we could be unable to meet customer demand and our business and results of operations may be materially and adversely affected.

The operations of our third-party manufacturing partners and suppliers could be disrupted by conditions unrelated to our business or operations or that are beyond our control, including but not limited to international trade restrictions or changes resulting from factors beyond our control. If our manufacturing partners or suppliers are unable or fail to fulfill their obligations to us for any reason, we may not be able to manufacture our products and satisfy customer demand or our obligations under sales agreements in a timely manner, and our business could be harmed as a result. Our current manufacturing process is characterized by long lead times between the placement of orders for and delivery of our products. If we have received insufficient components to manufacture our products on a timely basis to meet customer demand, our sales and our gross margin may be adversely affected and our business could be materially harmed. If we are unable to reduce our manufacturing costs and establish and maintain reliable, high-volume manufacturing suppliers as we scale our operations, our business could be materially harmed.

We may be unable to consistently manufacture our instruments and consumable kits, including SMRT Cells, to the necessary specifications or in quantities necessary to meet demand at an acceptable cost.

In order to successfully generate revenue from our products, we need to supply our customers with products that meet their expectations for quality and functionality in accordance with established specifications. Our customers have experienced variability in the performance of our instruments and SMRT Cells. Moreover, we are manufacturing a new version of our SMRT Cells for the

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Sequel System, and are in the process of simultaneously moving our in-house manufacturing facilities and scaling up manufacturing capacity for our products. In connection with this process, we may experience delays, quality issues or other difficulties leading to customer dissatisfaction with our products. Our production of new SMRT Cells has been and may in the future be below desired levels and we have experienced and may experience in the future manufacturing delays, product or quality defects, SMRT Cell variability, or other issues, including in connection with our transfer of production of our SMRT Cells to a high-volume manufacturer. There is no assurance that we will be able to manufacture our products so that they consistently achieve the product specifications and quality that our customers expect, including any products developed for clinical uses. Problems in the design or quality of our products may have a material adverse effect on our brand, business, financial condition, and operating results, and could result is us losing our ISO certifications. If we were to lose our ISO certification, then our customers might choose not to purchase products from us. There is also no assurance that we will be able to increase manufacturing yields and decrease costs, or that we will be successful in forecasting customer demand or manufacturing and supply costs. Furthermore, we may not be able to increase manufacturing to meet anticipated demand or may experience downtime in our existing or new manufacturing facilities. An inability to manufacture products and components that consistently meet specifications, in necessary quantities and at commercially acceptable costs, will have a negative impact, and may have a material adverse effect, on our business, financial condition and results of operations.

Rapidly changing technology in life sciences and diagnostics could make our products obsolete unless we continue to develop and commercialize new and improved products and pursue new market opportunities.

Our industry is characterized by rapid and significant technological changes, frequent new product introductions and enhancements and evolving industry standards. Our future success will depend on our ability to continually improve our products, to develop and introduce new products that address the evolving needs of our customers on a timely and cost-effective basis and to pursue new market opportunities. These new market opportunities may be outside the scope of our proven expertise or in areas where the market demand is unproven, and new products and services developed by us may not gain market acceptance. Our inability to develop and introduce new products and to gain market acceptance of the Sequel System and other new products could harm our future operating results. Unanticipated difficulties or delays in replacing existing products with new products or in commercializing the Sequel System or other new or improved products in sufficient quantities to meet customer demand could diminish future demand for our products and harm our future operating results.

Increased market adoption of our products by customers may depend on the availability of sample preparation and informatics tools, some of which may be developed by third parties.

Our commercial success may depend in part upon the development of sample preparation and software and informatics tools by third parties for use with our products. We cannot guarantee that third parties will develop tools that our current and future customers will find useful with our products. A lack of complementary sample preparation and informatics tools may impede the adoption of our products and may materially and adversely impact our business.

We operate in a highly competitive industry and if we are not able to compete effectively, our business and operating results will likely be harmed.

Some of our current competitors, including Illumina, Inc. and Thermo Fisher Scientific Inc., as well as other potential competitors, have greater name recognition, more substantial intellectual property portfolios, longer operating histories, significantly greater financial, technical, research and/or other resources, more experience in new product development, larger and more established manufacturing capabilities and marketing, sales and support functions, and/or more established distribution channels to deliver products to customers than we do. These 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 products or service offerings of our competitors, current and potential customers might purchase competitive products and services instead of our products.

There are also several companies that are in the process of developing or have already developed new, potentially competing technologies, products and/or services, including Oxford Nanopore Technologies Ltd. and its subsidiaries, against whom we have filed complaints for patent infringement with the U.S. International Trade Commission, in the U.S. District Court for the District of Delaware, and in the High Court of England and Wales, and Oxford Nanopore Technologies Ltd. has filed claims against us in the High Court of England and Wales and the District Court of Mannheim, Germany, also for patent infringement. Roche is developing potentially competing sequencing products through its acquisition of Genia Technologies. Increased competition may result in pricing pressures, which could harm our sales, profitability or market share. Our failure to further enhance our existing products and to introduce new products to compete effectively could materially and adversely affect our business, financial condition or results of operations.

We may be unable to successfully increase sales of our products.

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Our ability to achieve profitability depends on our ability to attract customers for our current and future products, and we may be unable to effectively market or sell our products, or find appropriate partners to do so. To perform sales, marketing, distribution and customer support functions successfully, we face a number of risks, including:

- our ability to attract, retain and manage the sales, marketing and service personnel necessary to expand market acceptance for our technologies;
- availability of potential sales partners to sell our technologies, and our ability to attract and retain such sales partners;
- the time and cost of maintaining and growing a specialized sales, marketing and service force for a particular application, which may be difficult to justify in light of the revenue generated; and
- our sales, marketing and service force may be unable to execute successful commercial activities.

We have enlisted and may continue to enlist third parties to assist with sales, distribution and customer support. There is no guarantee that we will be successful in attracting desirable sales and distribution partners, that we will be able to enter into arrangements with such partners on terms favorable to us or that we will be able to retain such partners on a going forward basis. If our sales and marketing efforts, or those of any of our third-party sales and distribution partners, are not successful, our technologies and products may not gain market acceptance, which could materially impact our business operations.

We may raise additional financing to fund our existing operations. Equity and debt securities we issue may have rights senior to common stockholders and additional equity financing will dilute the holdings of current stockholders.

We may raise additional funds through public or private debt or equity financing. Additional funds may not be available on terms acceptable to us or at all, particularly in light of restrictions under our debt agreement. We have incurred and may further incur additional debt. Debt holders have rights senior to common stockholders to make claims on our assets and the terms of our existing debt agreement restrict certain activities, including our ability to pay dividends on our common stock. To the extent that we raise additional funds through the sale of our common stock, downward fluctuations in our stock price could adversely affect such fundraising efforts. Furthermore, fundraising through sales of additional shares of common stock or other equity securities will have a dilutive effect on our existing investors.

Our indebtedness could adversely affect our financial condition and prevent us from fulfilling our obligations.

Our net losses since inception and our expectation of incurring substantial losses and negative cash flow for the foreseeable future, combined with our existing indebtedness, could:

- make it more difficult for us to satisfy our obligations, including under our existing debt agreement;
- increase our vulnerability to general adverse economic and industry conditions;
- limit our ability to fund future working capital, capital expenditures, research and development and other business opportunities;
- require us to dedicate a substantial portion of our cash flow from operations to service payments on our indebtedness;
- increase the volatility of the price of our common stock;
- limit our flexibility to react to changes in our business and the industry in which we operate;
- place us at a competitive disadvantage to our competitors that have less or no indebtedness; and
- limit, along with the financial and other restrictive covenants in our indebtedness, among other things, our ability to borrow additional funds.

Our existing debt contains covenants which may adversely impact our business and our failure to comply with such covenants could cause our outstanding indebtedness to become immediately payable.

Our existing debt contains various affirmative and negative covenants, including restrictions on our and our subsidiaries' ability to incur additional indebtedness or liens on our assets. These covenants impose significant operating and financial restrictions on us, including restrictions on our ability to take certain actions that may be in our best interests.

A breach of any of the covenants contained in our debt could result in an event of default. If an event of default exists, debt holders could elect to declare all amounts outstanding under the debt to be immediately due and payable. If we are unable to repay our indebtedness when due and payable, debt holders could proceed against the collateral granted to them to secure such indebtedness. We have pledged substantially all of our property and interests in property, including our intellectual property, as collateral under our existing debt. If the debt holders accelerate the repayment of our indebtedness, we may not have sufficient funds to make such repayment, which could have a material adverse effect on our liquidity and ability to conduct our business.

In addition, at the election of the holders representing a majority of the aggregate principal amount of the outstanding notes issued pursuant to our existing debt agreement, the holders may elect to receive 25% of the net proceeds from any financing that includes an equity component, including, without limitation, the sale or issuance of our common stock, options, warrants or other

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securities convertible or exchangeable for shares of our common stock, as partial payment of the notes. This right is subject to certain exceptions set forth in our existing debt agreement. To the extent we raise additional capital in the future through the sale of common stock under any future "at-the-market" offering or through other financing activities, we may be obligated, at the election of the holders of the notes, to pay 25% of the net proceeds from any such financing activities as partial payment of the notes.

Our products are highly complex, have recurring support requirements and could have unknown defects or errors, which may give rise to claims against us or divert application of our resources from other purposes.

Products using our SMRT sequencing technology are highly complex and may develop or contain undetected defects or errors. Our customers have experienced reliability issues with our products, including the Sequel System. Despite testing, defects or errors may arise in our products, which could result in a failure to maintain or increase market acceptance of our products, diversion of development resources, injury to our reputation and increased warranty, service and maintenance costs. New products or enhancements to our existing products in particular may contain undetected errors or performance problems that are discovered only after delivery to customers. If our products have reliability or other quality issues or require unexpected levels of support in the future, the market acceptance and utilization of our products may not grow to levels sufficient to support our costs and our reputation and business could be harmed. We generally ship our sequencing instruments with one year of service included in the purchase price with an option to purchase one or more additional years of service. We also provide a warranty for our consumables, which is generally limited to replacing, or at our option, giving credit for any consumable with defects in material or workmanship. Defects or errors in our products may also discourage customers from purchasing our products. The costs incurred in correcting any defects or errors may be substantial and could materially and adversely affect our operating margins. If our service and support costs increase, our business and operations may be materially and adversely affected.

In addition, such defects or errors could lead to the filing of product liability claims against us or against third parties who we may have an obligation to indemnify against such claims, which could be costly and time-consuming to defend and result in substantial damages. Although we have product liability insurance, any product liability insurance that we have or procure in the future may not protect our business from the financial impact of a product liability claim. Moreover, we may not be able to obtain adequate insurance coverage on acceptable terms. Any insurance that we have or obtain will be subject to deductibles and coverage limits. A product liability claim could have a serious adverse effect on our business, financial condition and results of operations.

We depend on the continuing efforts of our senior management team and other key personnel. If we lose members of our senior management team or other key personnel or are unable to successfully retain, recruit and train qualified scientists, engineers and other personnel, our ability to maintain and develop our products could be harmed and we may be unable to achieve our goals.

Our future success depends upon the continuing services of members of our senior management team and scientific and engineering personnel. In particular, our scientists and engineers are critical to our future technological and product innovations and we will need to hire additional qualified personnel. Our industry, particularly in the San Francisco Bay Area, is characterized by high demand and intense competition for talent, and the turnover rate can be high. We compete for qualified management and scientific personnel with other life science companies, academic institutions and research institutions, particularly those focusing on genomics. Our employees could leave our company with little or no prior notice and would be free to work for a competitor. In addition, changes to U.S. immigration policies, particularly to H-1B and other visa programs, could restrain the flow of technical and professional talent into the U.S. and may inhibit our ability to hire qualified personnel. If one or more of our senior

executives or other key personnel were unable or unwilling to continue in their present positions, we may not be able to replace them easily or at all, and other senior management may be required to divert attention from other aspects of the business. In addition, we do not have “key person” life insurance policies covering any member of our management team or other key personnel. The loss of any of these individuals or any inability to attract or retain qualified personnel, including scientists, engineers and others, could prevent us from pursuing collaborations and materially and adversely affect our support of existing products, product development and introductions, business growth prospects, results of operations and financial condition.

A significant portion of our potential sales depends on customers’ spending budgets that may be subject to significant and unexpected variation which could have a negative effect on the demand for our products.

Our instruments represent significant capital expenditures for our customers. Potential customers for our current or future products include academic and government institutions, genome centers, medical research institutions, clinical laboratories, pharmaceutical, agricultural, biotechnology, diagnostic and chemical companies. Their spending budgets can have a significant effect on the demand for our products. Spending budgets are based on a wide variety of factors, including the allocation of available resources to make purchases, funding from government sources which is highly uncertain and subject to change, the spending priorities among various types of research equipment and policies regarding capital expenditures during economically uncertain periods. Any decrease in capital spending or change in spending priorities of our current and potential customers could significantly reduce the demand for our products. Any delay or reduction in purchases by potential customers or our inability to forecast fluctuations in demand could harm our future operating results.

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Our business could be negatively impacted by changes in the United States political environment.

The most recent presidential and congressional elections in the United States have resulted in significant uncertainty with respect to, and could result in changes in, legislation, regulation and government policy at the federal level, as well as the state and local levels. Any such changes could significantly impact our business as well as the markets in which we compete. Specific legislative and regulatory proposals discussed during election campaigns and more recently that might materially impact us include, but are not limited to, changes to spending priorities and potential reductions in research funding. Uncertainty about U.S. government funding has posed, and may continue to pose, a risk as customers may choose to postpone or reduce spending in response to actual or anticipated restraints on funding. To the extent changes in the political environment have a negative impact on us or on our markets, our business, results of operation and financial condition could be materially and adversely impacted in the future.

We may not be able to convert our orders in backlog into revenue.

Our backlog represents product orders from our customers that we have confirmed and for which we have not yet recognized revenue. We may not receive revenue from these orders, and the order backlog we report may not be indicative of our future revenue.

Many events can cause an order to be delayed or not completed at all, some of which may be out of our control. If we delay fulfilling customer orders or if customers reconsider their orders, those customers may seek to cancel or modify their orders with us. Customers may otherwise seek to cancel or delay their orders even if we are prepared to fulfill them. If our orders in backlog do not result in sales, our operating results may suffer.

Delivery of our products could be delayed or disrupted by factors beyond our control, and we could lose customers as a result.

We rely on third-party carriers for the timely delivery of our products. As a result, we are subject to carrier disruptions and increased costs that are beyond our control. Any failure to deliver products to our customers in a safe and timely manner may damage our reputation and brand and could cause us to lose customers. If our relationship with any of these third-party carriers is terminated or impaired or if any of these carriers are unable to deliver our products, the delivery and acceptance of our products by our customers may be delayed, which could harm our business and financial results. The failure to deliver our products in a safe and timely manner may harm our relationship with our customers, increase our costs and otherwise disrupt our operations.

We are, and may become, subject to governmental regulations that may impose burdens on our operations, and the markets for our products may be narrowed.

We are subject, both directly and indirectly, to the adverse impact of government regulation of our operations and markets. For example, export of our instruments may be subject to strict regulatory control in a number of jurisdictions. We have expanded and are continuing to expand the international jurisdictions into which we supply products, which increase the risks surrounding governmental regulations relating to our business. The failure to satisfy export control criteria or to obtain necessary clearances could delay or prevent shipment of products, which could materially and adversely affect our revenue and profitability. Moreover, the life sciences industry, which is expected to be one of the primary markets for our technology, has historically been heavily regulated. There are, for example, laws in several jurisdictions restricting research in genetic engineering, which may narrow our markets. Given the evolving nature of this industry, legislative bodies or regulatory authorities may adopt additional regulations that may adversely affect our market opportunities. Additionally, if ethical and other concerns surrounding the use of

genetic information, diagnostics or therapies become widespread, there may be less demand for our products.

Our business is also directly affected by a wide variety of government regulations applicable to business enterprises generally and to companies operating in the life science industry in particular. Failure to comply with government regulations or obtain or maintain necessary permits and licenses could result in a variety of fines or other censures or an interruption in our business operations which may have a negative impact on our ability to generate revenue and the cost of operating our business. In addition, changes to laws and government regulations could cause a material adverse effect on our business as we will need to adapt our business to comply with such changes. For example, a governmental prohibition on the use of human in vitro diagnostics would adversely impact our commercialization of products on which we have expended significant research and development resources, which would in turn have a material adverse impact on our business and prospects.

Our products could become subject to regulation by the U.S. Food and Drug Administration or other domestic and international regulatory agencies, which could increase our costs and impede or delay our commercialization efforts, thereby materially and adversely affecting our business and results of operations.

Our products are not currently subject to U.S. Food and Drug Administration (“FDA”) clearance or approval since they are not intended for use in the diagnosis or treatment of disease. However, in the future, certain of our products or related applications, such as those that may be developed for clinical uses, could be subject to FDA regulation, or the FDA’s regulatory jurisdiction could

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be expanded to include our products. Even where a product is exempted from FDA clearance or approval, the FDA may impose restrictions as to the types of customers to which we or our partners can market and sell our products. Such regulation and restrictions may materially and adversely affect our business, financial condition and results of operations. In the event that we fail to obtain and maintain necessary regulatory clearances or approvals for products that we develop for clinical uses, or if clearances or approvals for future products and indications are delayed or not issued, our commercial operations may be materially harmed. Furthermore, even if we are granted regulatory clearances or approvals, they may include significant limitations on the indicated uses for the product, which may limit the market for the product. We do not have experience in obtaining FDA approvals and no assurance can be given that we will be able to obtain or to maintain such approvals. Furthermore, any approvals that we may obtain can be revoked if safety or efficacy problems develop.

Many countries have laws and regulations that could affect our products, such as 510(k) clearances, premarket approvals or CE Mark requirements, and failure to adhere to applicable statutory or regulatory requirements by us or our business partners would have a material adverse effect on our operations and financial condition. The number and scope of these requirements are increasing. Unlike many of our competitors, this is an area where we do not have expertise. We, or our other third-party sales and distribution partners, may not be able to obtain regulatory approvals in such countries or may incur significant costs in obtaining or maintaining our foreign regulatory approvals. In addition, the export by us of certain of our products, which have not yet been cleared for domestic commercial distribution, may be subject to FDA or other export restrictions. Any action brought against us for violations of these laws or regulations, even if successfully defended, could cause us to incur significant legal expenses and divert our management's attention from the operation of our business.

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

We currently conduct operations in various countries and jurisdictions, and continue to expand to new international jurisdictions. For example, in 2016, we started selling into several new countries directly and through distribution partners, including Mexico and Israel, where we or our distribution partners may be subject to additional regulations and increased diversion of management time and efforts. Conducting and launching operations on an international scale requires close coordination of activities across multiple jurisdictions and time zones and consumes significant management resources. If we fail to coordinate and manage these activities effectively, our business, financial condition or results of operations could be materially and adversely affected and failure to comply with laws and regulations applicable to business operations in foreign jurisdictions may also subject us to significant liabilities and other penalties. International operations entail a variety of other risks, including, without limitation:

- challenges in staffing and managing foreign operations;
- tariffs and other trade barriers;
- changes in social, political and economic conditions or in laws, regulations and policies governing foreign trade, manufacturing, development and investment both domestically as well as in the other countries and jurisdictions into which we sell our products, including as a result of the referendum held in the United Kingdom approving the separation of the United Kingdom as a member of the European Union;
- difficulties in obtaining export licenses or in overcoming other trade barriers and restrictions resulting in delivery delays;
- potential increases on tariffs or restrictions on trade generally; and
- significant taxes or other burdens of complying with a variety of foreign laws.

In conducting our international operations, we are subject to U.S. laws relating to our international activities, such as the Foreign Corrupt Practices Act of 1977, as well as foreign laws relating to our activities in other countries, such as the United Kingdom Bribery Act of 2010. Failure to comply with these laws may subject us to claims or financial

and/or other penalties in the United States and/or foreign countries that could materially and adversely impact our operations or financial condition. These risks have become increasingly prevalent as we have expanded our sales into countries that are generally recognized as having a higher risk of corruption.

We face risks related to the current global economic environment, which could delay or prevent our customers from purchasing our products, which could in turn harm our business, financial condition and results of operations. The state of the global economy continues to be uncertain. The current global economic conditions and uncertain credit markets and concerns regarding the availability of credit pose a risk that could impact customer demand for our products, as well as our ability to manage normal commercial relationships with our customers, suppliers and creditors, including financial institutions. If the current global economic environment deteriorates, our business could be negatively affected.

Moreover, changes in the value of the relevant currencies may affect the cost of certain items required in our operations. Changes in currency exchange rates may also affect the relative prices at which we are able sell products in the same market. Our revenue from international customers may be negatively impacted as increases in the U.S. dollar relative to our international

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customers' local currencies could make our products more expensive, impacting our ability to compete or as a result of financial or other instability in such locations which could result in decreased sales of our products. Our costs of materials from international suppliers may also increase as the value of the U.S. dollar decreases relative to their local currency. Foreign policies and actions regarding currency valuation could result in actions by the United States and other countries to offset the effects of such fluctuations. Such actions may materially and adversely impact our financial condition and results of operations.

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

If we fail to comply with healthcare and other governmental regulations, we could face substantial penalties and our business, results of operations and financial condition could be adversely affected.

The products that we may develop for clinical uses may be highly regulated, and there can be no assurance that the regulatory environment in which we would operate will not change significantly and adversely in the future. Any arrangements with physicians, hospitals and clinics may expose us to broadly applicable fraud and abuse and other laws and regulations that may restrict the financial arrangements and relationships through which we market, sell and distribute our products and services. Our employees, consultants, and commercial partners may engage in misconduct or other improper activities, including non-compliance with regulatory standards and requirements. Federal and state healthcare laws and regulations that may affect our ability to conduct business, include, without limitation:

- federal and state laws and regulations regarding billing and claims payment applicable to products that we may develop for clinical uses, and regulatory agencies enforcing those laws and regulations;
- the federal Anti-Kickback Statute, which prohibits, among other things, any person from knowingly and willfully offering, soliciting, receiving or providing remuneration, directly or indirectly, in exchange for or to induce either the referral of an individual for, or the purchase, order or recommendation of, any good or service for which payment may be made under federal healthcare programs;
- the federal False Claims Act, which prohibits, among other things, individuals or entities from knowingly presenting, or causing to be presented, false claims, or knowingly using false statements, to obtain payment from the federal government;
- federal criminal laws that prohibit executing a scheme to defraud any healthcare benefit program or making false statements relating to healthcare matters;
- the FCPA, the U.K. Bribery Act of 2010, and other local anti-corruption laws that apply to our international activities;
- the federal Physician Payment Sunshine Act, or Open Payments, created under the Affordable Care Act, and its implementing regulations, which requires manufacturers of drugs, medical devices, biologicals and medical supplies for which payment is available under Medicare, Medicaid, or the Children's Health Insurance Program to report annually to the U.S. Department of Health and Human Services, or HHS, information related to payments or other transfers of value made to licensed physicians and teaching hospitals, as well as ownership and investment interests held by physicians and their immediate family members;
- HIPAA, as amended by the Health Information Technology for Economic and Clinical Health Act, and its implementing regulations, which impose certain requirements relating to the privacy, security and transmission of

individually identifiable health information; HIPAA also created criminal liability for knowingly and willfully falsifying or concealing a material fact or making a materially false statement in connection with the delivery of or payment for healthcare benefits, items or services;

- the federal physician self-referral prohibition, commonly known as the Stark Law; and
- state law equivalents of each of the above federal laws, such as anti-kickback and false claims laws which may apply to items or services reimbursed by any third-party payor, including commercial insurers, and state and foreign laws governing the privacy and security of health information in certain circumstances, many of which differ from each other in significant ways and often are not preempted by HIPAA, thus complicating compliance efforts.

The Patient Protection and Affordable Care Act, as amended by the Health Care and Education Affordability Reconciliation Act, or Affordable Care Act, was enacted in 2010. The Affordable Care Act, among other things, amends the intent requirement of the federal Anti-Kickback Statute and criminal healthcare fraud statutes. A person or entity no longer needs to have actual knowledge of this statute or specific intent to violate it. In addition, the Affordable Care Act provides that the government may assert that a claim including items or services resulting from a violation of the federal Anti-Kickback Statute constitutes a false or fraudulent claim for purposes of the False Claims Act.

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Because of the breadth of these laws and the narrowness of available statutory and regulatory exemptions, it is possible that some of our activities could be subject to challenge under one or more of such laws. Any action brought against us for violations of these laws or regulations, even successfully defended, could cause us to incur significant legal expenses and divert our management's attention from the operation of our business. We may be subject to private "qui tam" actions brought by individual whistleblowers on behalf of the federal or state governments, with potential liability under the federal False Claims Act including mandatory treble damages and significant per-claim penalties.

The growth of our business and sales organization and our expansion outside of the United States may increase the potential of violating these laws. The risk of our being found in violation of these or other laws and regulations is further increased by the fact that many have not been fully interpreted by the regulatory authorities or the courts, and their provisions are open to a variety of interpretations. Any action brought against us for violation of these or other laws or regulations, even if we successfully defend against it, could cause us to incur significant legal expenses and divert our management's attention from the operation of our business. If our operations are found to be in violation of any of the federal, state and foreign laws described above or any other current or future fraud and abuse or other healthcare laws and regulations that apply to us, we may be subject to penalties, including significant criminal, civil, and administrative penalties, damages, fines, imprisonment, for individuals, exclusion from participation in government programs, such as Medicare and Medicaid, and we could be required to curtail or cease certain of our operations. Any of the foregoing consequences could seriously harm our business and our financial results.

If we fail to maintain proper and effective internal controls, our ability to produce accurate financial statements on a timely basis could be impaired, which would adversely affect our business and our stock price.

Ensuring that we have adequate internal financial and accounting controls and procedures in place to produce accurate financial statements on a timely basis is a costly and time-consuming effort that needs to be evaluated frequently. We may in the future discover areas of our internal financial and accounting controls and procedures that need improvement. Operating as a public company requires sufficient resources within the accounting and finance functions in order to produce timely financial information, ensure the level of segregation of duties, and maintain adequate internal control over financial reporting customary for a U.S. public company.

Our management is responsible for establishing and maintaining adequate internal control over financial reporting to provide reasonable assurance regarding the reliability of our financial reporting and the preparation of financial statements for external purposes in accordance with accounting principles generally accepted in the United States, or U.S. GAAP. Our management does not expect that our internal control over financial reporting will prevent or detect all errors and all fraud. A control system, no matter how well designed and operated, can provide only reasonable, not absolute, assurance that the control system's objectives will be met. Because of the inherent limitations in all control systems, no evaluation of controls can provide absolute assurance that misstatements due to error or fraud will not occur or that all control issues and instances of fraud, if any, within our company will have been detected.

Pursuant to Section 404 of the Sarbanes-Oxley Act, we perform periodic evaluations of our internal control over financial reporting. While we have in the past performed this evaluation and concluded that our internal control over financial reporting was operating effectively, there can be no assurance that in the future material weaknesses or significant deficiencies will not exist or otherwise be discovered. In addition, if we are unable to produce accurate financial statements on a timely basis, investors could lose confidence in the reliability of our financial statements, which could cause the market price of our common stock to decline and make it more difficult for us to finance our operations and growth.

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

Under Section 382 of the Internal Revenue Code, a corporation that undergoes an "ownership change" is subject to limitations on its ability to utilize its pre-change net operating losses ("NOLs") to offset future taxable income. We believe that we have had one or more ownership changes, as a result of which our existing NOLs are currently subject to limitation. Future changes in our stock ownership could result in additional ownership changes under Section 382. We may not be able to utilize a material portion of our NOLs even if we attain profitability.

Our sales cycle is unpredictable and lengthy, which makes it difficult to forecast revenue and may increase the magnitude of quarterly or annual fluctuations in our operating results.

The sales cycle for our sequencing instruments is lengthy because they represent a major capital expenditure and generally require the approval of our customers' senior management. This may contribute to substantial fluctuations in our quarterly or annual operating results, particularly during the periods in which our sales volume is low. Factors that may cause fluctuations in our quarterly or operating results include, without limitation, market acceptance for our products; our ability to attract new customers; publications of studies by us, competitors or third parties; the timing and success of new product introductions by us or our

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competitors or other changes in the competitive dynamics of our industry, such as consolidation; the amount and timing of our costs and expenses; changes in our pricing policies or those of our competitors; general economic, industry and market conditions; the regulatory environment; expenses associated with warranty costs or unforeseen product quality issues; the hiring, training and retention of key employees, including our ability to grow our sales organization; litigation or other claims against us for intellectual property infringement or otherwise; our ability to obtain additional financing as necessary; and changes or trends in new technologies and industry standards. Because of these fluctuations, it is likely that in some future quarters our operating results will fall below the expectations of securities analysts or investors. If that happens, the market price of our stock would likely decrease. Past fluctuations in our quarterly and annual operating results have resulted in decreases in our stock price. Such fluctuations also mean that investors may not be able to rely on our operating results in any particular period as an indication of future performance. Sales to existing customers and the establishment of a business relationship with other potential customers is a lengthy process, generally taking several months and sometimes longer. Following the establishment of the relationship, the negotiation of purchase terms can be time-consuming, and a potential customer may require an extended evaluation and testing period. In anticipation of product orders, we may incur substantial costs before the sales cycle is complete and before we receive any customer payments. As a result, in the event that a sale is not completed or is canceled or delayed, we may have incurred substantial expenses, making it more difficult for us to become profitable or otherwise negatively impacting our financial results. Furthermore, because of our lengthy sales cycle, the realization of revenue from our selling efforts may be substantially delayed, our ability to forecast our future revenue may be more limited and our revenue may fluctuate significantly from quarter to quarter.

Our operations involve the use of hazardous materials, and we must comply with environmental, health and safety laws, which can be expensive and may adversely affect our business, operating results and financial condition.

Our research and development and manufacturing activities involve the use of hazardous materials, including chemicals and biological materials, and some of our products include hazardous materials. Accordingly, we are subject to federal, state, local and foreign laws, regulations and permits relating to environmental, health and safety matters, including, among others, those governing the use, storage, handling, exposure to and disposal of hazardous materials and wastes, the health and safety of our employees, and the shipment, labeling, collection, recycling, treatment and disposal of products containing hazardous materials. Liability under environmental laws and regulations can be joint and several and without regard to fault or negligence. For example, under certain circumstances and under certain environmental laws, we could be held liable for costs relating to contamination at our or our predecessors' past or present facilities and at third-party waste disposal sites. We could also be held liable for damages arising out of human exposure to hazardous materials. There can be no assurance that violations of environmental, health and safety laws will not occur as a result of human error, accident, equipment failure or other causes. The failure to comply with past, present or future laws could result in the imposition of substantial fines and penalties, remediation costs, property damage and personal injury claims, investigations, the suspension of production or product sales, loss of permits or a cessation of operations. Any of these events could harm our business, operating results and financial condition. We also expect that our operations will be affected by new environmental, health and safety laws and regulations on an ongoing basis, or more stringent enforcement of existing laws and regulations. New laws or changes to existing laws may result in additional costs and may increase penalties associated with violations or require us to change the content of our products or how we manufacture them, which could have a material adverse effect on our business, operating results and financial condition.

Our facilities in California are located near earthquake faults, and the occurrence of an earthquake or other catastrophic disaster could cause damage to our facilities and equipment, which could require us to cease or curtail operations.

Our facilities in the San Francisco Bay Area are located near earthquake fault zones and are vulnerable to damage from earthquakes. We are also vulnerable to damage from other types of disasters, including fire, floods, power loss, communications failures and similar events. If any disaster were to occur, our ability to operate our business at our facilities would be seriously, or potentially completely, impaired. In addition, the nature of our activities could cause significant delays in our research programs and commercial activities and make it difficult for us to recover from a disaster. The insurance we maintain may not be adequate to cover our losses resulting from disasters or other business interruptions. Accordingly, an earthquake or other disaster could materially and adversely harm our ability to conduct business.

Our ability to successfully manage our ongoing transition to our new headquarters could result in a material adverse effect on our business or operations if we underestimate the costs of the transition, experience delays or quality issues with our manufacturing, or if internal measures to mitigate these risks are not effective.

We are in the midst of transitioning to our new headquarters in Menlo Park, California. The transition may involve unanticipated delays, which could materially impact our desired commercial timelines and there is no assurance that we will be able to move into our new headquarters without any material interruption to our business. The successful transition of our headquarters, including the transition of our manufacturing facilities, is largely dependent upon the cooperation and continued performance of both our current and future landlords, as well as third-party contractors who are preparing certain shell improvements and tenant improvements. During the transition period, we must successfully establish and implement procedures to ensure that our current and

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future manufacturing facilities meet our quality standards while maintaining a reasonable cost structure. In addition, after our new manufacturing facilities have been qualified, it may take a considerable period of time to commence volume production. We have already devoted significant expenses and resources in connection with the transition, and there is no assurance that we can manage the transition successfully.

In addition, the transition to our new headquarters may delay or disrupt our ability to perform critical functions, distract our management and employees or result in unanticipated expenses, all of which could negatively affect our business, at least in the near term. There may also be additional costs associated with running separate manufacturing facilities until our in-house manufacturing has been relocated to the new headquarters, and such costs may exceed our projections. If the transition does not go as expected, in addition to other issues noted above, we could experience delayed shipments of products, unexpected cost overruns or quality issues, or loss of our ISO certifications, each of which could have a material adverse effect on our business, operating results and business reputation. Moreover, in the event that we breach any of our current Menlo Park facility real property leases and fail to cure such breach within the time permitted, the landlord would have no obligation to make the final payment due to us under the leases, as amended, as consideration for our agreement to amend the leases.

Ethical, legal, privacy and social concerns or governmental restrictions surrounding the use of genetic information could reduce demand for our technology.

Our products may be used to provide genetic information about humans, agricultural crops and other living organisms. The information obtained from our products could be used in a variety of applications which may have underlying ethical, legal, privacy and social concerns, including the genetic engineering or modification of agricultural products or testing for genetic predisposition for certain medical conditions. Governmental authorities could, for safety, social or other purposes, call for limits on or regulation of the use of genetic testing. Such concerns or governmental restrictions could limit the use of our products, which could have a material adverse effect on our business, financial condition and results of operations.

Disruption of critical information technology systems or material breaches in the security of our systems could harm our business, customer relations and financial condition.

Information technology (“IT”) helps us to operate efficiently, interface with customers, maintain financial accuracy and efficiently and accurately produce our financial statements. IT systems are used extensively in virtually all aspects of our business, including sales forecast, order fulfillment and billing, customer service, logistics, and management of data from running samples on our products. Our success depends, in part, on the continued and uninterrupted performance of our IT systems. IT systems may be vulnerable to damage from a variety of sources, including telecommunications or network failures, power loss, natural disasters, human acts, computer viruses, computer denial-of-service attacks, unauthorized access to customer or employee data or company trade secrets, and other attempts to harm our systems. Certain of our systems are not redundant, and our disaster recovery planning is not sufficient for every eventuality. Despite any precautions we may take, such problems could result in, among other consequences, disruption of our operations, which could harm our reputation and financial results.

If we do not allocate and effectively manage the resources necessary to build and sustain the proper IT infrastructure, we could be subject to transaction errors, processing inefficiencies, loss of customers, business disruptions or loss of or damage to intellectual property through security breach. If our data management systems do not effectively collect, store, process and report relevant data for the operation of our business, whether due to equipment malfunction or constraints, software deficiencies or human error, our ability to effectively plan, forecast and execute our business plan and comply with applicable laws and regulations will be impaired, perhaps materially. Any such impairment

could materially and adversely affect our reputation, financial condition, results of operations, cash flows and the timeliness with which we report our internal and external operating results.

Security breaches and other disruptions could compromise our information and expose us to liability, which would cause our business and reputation to suffer.

In the ordinary course of our business, we collect and store sensitive data, including intellectual property, our proprietary business information and that of our customers, suppliers and business partners, and personally identifiable information of our customers and employees, in our data centers and on our networks. The secure processing, maintenance and transmission of this information is critical to our operations. Despite our security measures, our IT infrastructure may be vulnerable to attacks by hackers, computer viruses, malicious codes, unauthorized access attempts, and cyber- or phishing-attacks, or breached due to employee error, malfeasance, faulty password management or other disruptions. Third parties may attempt to fraudulently induce employees or other persons into disclosing user names, passwords or other sensitive information, which may in turn be used to access our IT systems, commit identity theft or carry out other unauthorized or illegal activities. Any such breach could compromise our networks and the information stored there could be accessed, publicly disclosed, lost or stolen. Any such access, disclosure or other loss of information could result in legal claims or proceedings, liability under laws that protect the privacy of personal information, disruption of our operations and damage to our reputation, which could divert our management’s attention from the operation of our business and

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materially and adversely affect our business, revenues and competitive position. Moreover, we may need to increase our efforts to train our personnel to detect and defend against cyber- or phishing-attacks, which are becoming more sophisticated and frequent, and we may need to implement additional protective measures to reduce the risk of potential security breaches, which could cause us to incur significant additional expenses.

Regulations related to conflict minerals has caused us to incur, and will continue to cause us to incur, additional expenses and could limit the supply and increase the costs of certain materials used in the manufacture of our products.

We are subject to requirements under the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010 that require us to conduct diligence, and report whether or not our products contain conflict minerals. The implementation of these requirements could adversely affect the sourcing, availability and pricing of the materials used in the manufacture of components used in our products. Furthermore, the complex nature of our products requires components and materials that may be available only from a limited number of sources and, in some cases, from only a single source. We have incurred, and will continue to incur, additional costs to comply with the disclosure requirements, including costs related to conducting diligence procedures to determine the sources of conflict minerals that may be used or necessary to the production of our products and, if applicable, potential changes to components, processes or sources of supply as a consequence of such verification activities. We may face reputational harm if we determine that certain of our products contain minerals that are not determined to be conflict free or if we are unable to alter our processes or sources of supply to avoid using such materials. Reputational harm could materially and adversely affect our business, financial condition or results of operations.

Risks Related to Our Intellectual Property

Failure to secure patent or other intellectual property protection for our products and improvements to our products may reduce our ability to maintain any technological or competitive advantage over our current and potential competitors.

Our ability to protect and enforce our intellectual property rights is uncertain and depends on complex legal and factual questions. Our ability to establish or maintain a technological or competitive advantage over our competitors may be diminished because of these uncertainties. For example:

- we or our licensors might not have been the first to make the inventions covered by each of our pending patent applications or issued patents;
- we or our licensors might not have been the first to file patent applications for these inventions;
- it is possible that neither our pending patent applications nor the pending patent applications of our licensors will result in issued patents;
- the scope of the patent protection we or our licensors obtain may not be sufficiently broad to prevent others from practicing our technologies, developing competing products, designing around our patented technologies or independently developing similar or alternative technologies;
- our and our licensors' patent applications or patents have been, are and may in the future be, subject to interference, opposition or similar administrative proceedings, which could result in those patent applications failing to issue as patents, those patents being held invalid or the scope of those patents being substantially reduced;
- we or our partners may not adequately protect our trade secrets;
- we may not develop additional proprietary technologies that are patentable; or
- the patents of others may limit our freedom to operate and prevent us from commercializing our technology in accordance with our plans.

The occurrence of any of these events could impair our ability to operate without infringing upon the proprietary rights of others or prevent us from establishing or maintaining a competitive advantage over our competitors.

Variability in intellectual property laws may adversely affect our intellectual property position.

Intellectual property laws, and patent laws and regulations in particular, have been subject to significant variability either through administrative or legislative changes to such laws or regulations or changes or differences in judicial interpretation, and it is expected that such variability will continue to occur. Additionally, intellectual property laws and regulations differ by country. Variations in the patent laws and regulations or in interpretations of patent laws and regulations in the United States and other countries may diminish the value of our intellectual property and may change the impact of third-party intellectual property on us. Accordingly, we cannot predict the scope of the patents that may be granted to us with certainty, the extent to which we will be able to enforce our patents against third parties or the extent to which third parties may be able to enforce their patents against us.

Some of the intellectual property that is important to our business is owned by other companies or institutions and licensed to us, and changes to the rights we have licensed may adversely impact our business.

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We license from third parties some of the intellectual property that is important to our business. If we fail to meet our obligations under these licenses, these third parties could terminate the licenses. If the third parties who license intellectual property to us fail to maintain the intellectual property that we have licensed, or lose rights to that intellectual property, the rights we have licensed may be reduced or eliminated, which could subject us to claims of intellectual property infringement. Termination of these licenses or reduction or elimination of our licensed rights may result in our having to negotiate new or reinstated licenses with less favorable terms, or could subject us to claims of intellectual property infringement in litigation or other administrative proceedings that could result in damage awards against us and injunctions that could prohibit us from selling our products. In addition, some of our licenses from third parties limit the field in which we can use the licensed technology. Therefore, in order for us to use such licensed technology in potential future applications that are outside the licensed field of use, we may be required to negotiate new licenses with our licensors or expand our rights under our existing licenses. We cannot assure you that we will be able to obtain such licenses or expanded rights on reasonable terms or at all. In addition, we have limited rights to participate in the prosecution and enforcement of the patents and patent applications that we have licensed. As a result, we cannot be certain that these patents and applications will be prosecuted and enforced in a manner consistent with the best interests of our business. Further, because of the rapid pace of technological change in our industry, we may need to rely on key technologies developed or licensed by third parties, and we may not be able to obtain licenses and technologies from these third parties at all or on reasonable terms. The occurrence of these events may have a material adverse effect on our business, financial condition or results of operations.

The measures that we use to protect the security of our intellectual property and other proprietary rights may not be adequate, which could result in the loss of legal protection for, and thereby diminish the value of, such intellectual property and other rights.

In addition to patents, we also rely upon trademarks, trade secrets, copyrights and unfair competition laws, as well as license agreements and other contractual provisions, to protect our intellectual property and other proprietary rights. Despite these measures, any of our intellectual property rights could be challenged, invalidated, circumvented or misappropriated. In addition, we attempt to protect our intellectual property and proprietary information by requiring our employees and consultants to enter into confidentiality and assignment of inventions agreements, and by entering into confidentiality agreements with our third-party development, manufacturing, sales and distribution partners, who may also acquire, develop and/or commercialize alternative or competing products or provide services to our competitors. For example, Roche had certain access to our trade secrets and other proprietary information pursuant to the Roche Agreement, subject to the confidentiality provisions thereof (certain of which provisions survive the termination of the Roche Agreement); however, Roche is developing potentially competing sequencing products through its acquisition of Genia Technologies. There can be no assurance that our measures will provide adequate protection for our intellectual property and proprietary information. These agreements may be breached, and we may not have adequate remedies for any such breach. In addition, our trade secrets and other proprietary information may be disclosed to others, or others may gain access to or disclose our trade secrets and other proprietary information. Enforcing a claim that a third party illegally obtained and is using our trade secrets is expensive and time consuming, and the outcome is unpredictable. Additionally, others may independently develop proprietary information and techniques that are substantially equivalent to ours. The occurrence of these events may have a material adverse effect on our business, financial condition or results of operations.

Our intellectual property may be subject to challenges in the United States or foreign jurisdictions that could adversely affect our intellectual property position.

Our pending, issued and granted U.S. and foreign patents and patent applications have been, are and may in the future be, subject to challenges by third parties asserting prior invention by others or invalidity on various grounds, through

proceedings, such as interferences, reexamination or opposition proceedings. Addressing these challenges to our intellectual property has been, and any future challenges can be, costly and distract management's attention and resources. For example, we previously incurred significant legal expenses to litigate and settle a complaint seeking review of a patent interference decision of the U.S. Patent and Trademark Office. Additionally, as a result of these challenges, our patents or pending patent applications may be determined to be unpatentable to us, invalidated or unenforceable in whole or in part. Accordingly, adverse rulings in these proceedings may negatively impact the scope of our intellectual property protection for our products and technology, and may materially and adversely affect our business.

Some of our technology is subject to "march-in" rights by the U.S. government.

Some of our patented technology was developed with U.S. federal government funding. When new technologies are developed with U.S. government funding, the government obtains certain rights in any resulting patents, including a nonexclusive license authorizing the government to use the invention for non-commercial purposes. These rights may permit the government to disclose our confidential information to third parties and to exercise "march-in" rights to use or allow third parties to use our patented technology. The government can exercise its march-in rights if it determines that such action is necessary to (i) achieve practical application of the U.S. government-funded technology, (ii) alleviate health or safety needs, (iii) meet requirements of federal regulations, or (iv) give preference to U.S. industry. In addition, U.S. government-funded inventions must be reported to the government and such government funding must be disclosed in any resulting patent applications. Furthermore, our rights in such inventions are subject to government license rights and foreign manufacturing restrictions.

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We are involved in legal proceedings to enforce our intellectual property rights.

Our intellectual property rights involve complex factual, scientific and legal questions. We operate in an industry characterized by significant intellectual property litigation. Even though we may believe that we have a valid patent on a particular technology, other companies may have from time to time taken, and may in the future take, actions that we believe violate our patent rights. For example, we have filed a complaint with the USITC against ONT for patent infringement, as well as complaints against ONT Inc. in the U.S. District Court for the District of Delaware and against ONT Ltd. and Metrichor in the High Court of England and Wales for patent infringement, and ONT has filed claims against us in the High Court of England and Wales and the District Court of Mannheim, Germany for patent infringement. Legal actions to enforce our patent rights can be expensive and may involve the diversion of significant management time and resources and adverse parties may bring claims against us and/or our intellectual property. Our enforcement actions may not be successful, could give rise to legal claims against us and could result in some of our intellectual property rights being determined to be invalid or not enforceable.

We have been, and could in the future be, subject to legal proceedings with third parties who may claim that our products infringe or misappropriate their intellectual property rights.

Our products are based on complex, rapidly developing technologies. We may not be aware of issued or previously filed patent applications that belong to third parties that mature into issued patents that cover some aspect of our products or their use. In addition, because patent litigation is complex and the outcome inherently uncertain, our belief that our products do not infringe third-party patents of which we are aware or that such third-party patents are invalid and unenforceable may be determined to be incorrect. As a result, third parties have claimed, and may in the future claim, that we infringe their patent rights and have filed, and may in the future file, lawsuits or engage in other proceedings against us to enforce their patent rights. For example, ONT Ltd. announced on April 21, 2017 that it was pursuing claims for patent infringement against us in the High Court of England and Wales, and on April 25, 2017 ONT Ltd. announced that it was also pursuing claims for patent infringement against us in the District Court of Mannheim, Germany. In addition, as we enter new markets, our competitors and other third parties may claim that our products infringe their intellectual property rights as part of a business strategy to impede our successful entry into those markets. Furthermore, parties making claims against us may be able to obtain injunctive or other relief, which effectively could block our ability to develop further, commercialize, or sell products or services, and could result in the award of substantial damages against us. Patent litigation between competitors in our industry is common. Additionally, we have certain obligations to many of our customers and suppliers to indemnify and defend them against claims by third parties that our products or their use infringe any intellectual property of these third parties. In defending ourselves against any of these claims, we have in the past incurred, and could in the future incur, substantial costs, and the attention of our management and technical personnel could be diverted. For example, we previously incurred significant legal expenses to litigate and settle a complaint alleging patent infringement. Even if we have an agreement that indemnifies us against such costs, the indemnifying party may be unable to uphold its contractual obligations. To avoid or settle legal claims, it may be necessary or desirable in the future to obtain licenses relating to one or more products or relating to current or future technologies, which could negatively affect our gross margins. We may not be able to obtain these licenses on commercially reasonable terms, or at all. We may be unable to modify our products so that they do not infringe the intellectual property rights of third parties. In some situations, the results of litigation or settlement of claims may require us to cease allegedly infringing activities which could prevent us from selling some or all of our products. The occurrence of these events may have a material adverse effect on our business, financial condition or results of operations.

In addition, in the course of our business, we may from time to time have access or be alleged to have access to confidential or proprietary information of others, which, though not patented, may be protected as trade secrets.

Others could bring claims against us asserting that we improperly used their confidential or proprietary information, or that we misappropriated their technologies and incorporated those technologies into our products. A determination that we illegally used the confidential or proprietary information or misappropriated technologies of others in our products could result in us paying substantial damage awards or being prevented from selling some or all of our products, which could materially and adversely affect our business.

We have not yet registered some of our trademarks in all of our potential markets, and failure to secure those registrations could adversely affect our business.

Some of our trademark applications may not be allowed for registration, and our registered trademarks may not be maintained or enforced. In addition, in the U.S. Patent and Trademark Office and in comparable agencies in many foreign jurisdictions, third parties are given an opportunity to oppose pending trademark applications and to seek to cancel registered trademarks. Opposition or cancellation proceedings may be filed against our trademarks, and our trademarks may not survive such proceedings.

Our use of “open source” software could adversely affect our ability to sell our products and subject us to possible litigation.

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A portion of our products or technologies developed and/or distributed by us incorporate "open source" software, and we may incorporate open source software into other products or technologies in the future. Some open source software licenses require that we disclose the source code for any modifications to such open source software that we make and distribute to one or more third parties, and that we license the source code for such modifications to third parties, including our competitors, at no cost. We monitor the use of open source software in our products to avoid uses in a manner that would require us to disclose or grant licenses under our source code that we wish to maintain as proprietary; however, there can be no assurance that such efforts have been or will be successful. In some circumstances, distribution of our software that includes or is linked with open source software could require that we disclose and license some or all of our proprietary source code in that software, which could include permitting the use of such software and source code at no cost to the user. Open source license terms are often ambiguous and there is little legal precedent governing the interpretation of these licenses. Successful claims made by the licensors of open source software that we have violated the terms of these licenses could result in unanticipated obligations, including being subject to significant damages, being enjoined from distributing products that incorporate open source software and being required to make available our proprietary source code pursuant to an open source license, which could substantially help our competitors develop products that are similar to or better than ours or otherwise materially and adversely affect our business.

Risks Related to Owning Our Common Stock

The price of our common stock has been, is, and may continue to be, highly volatile, and you may be unable to sell your shares at or above the price you paid to acquire them.

The market price of our common stock is highly volatile, and we expect it to continue to be volatile for the foreseeable future in response to many risk factors listed in this section, and others beyond our control, including:

- actual or anticipated fluctuations in our financial condition and operating results;
- announcements of technological innovations by us or our competitors;
- announcements by our customers, partners or suppliers relating directly or indirectly to our products, services or technologies;
- overall conditions in our industry and market;
- addition or loss of significant customers;
- changes in laws or regulations applicable to our products;
- actual or anticipated changes in our growth rate relative to our competitors;
- announcements by us or our competitors of significant acquisitions, strategic partnerships, joint ventures, capital commitments or achievement of significant milestones;
- additions or departures of key personnel;
- competition from existing products or new products that may emerge;
- issuance of new or updated research or reports by securities analysts;
- fluctuations in the valuation of companies perceived by investors to be comparable to us;
- disputes or other developments related to proprietary rights, including patents, litigation matters or our ability to obtain intellectual property protection for our technologies;
- announcement or expectation of additional financing efforts;
- sales of our common stock by us or our stockholders;
- stock price and volume fluctuations attributable to inconsistent trading volume levels of our shares;

- reports, guidance and ratings issued by securities or industry analysts; and
- general economic and market conditions.

If any of the forgoing occurs, it would cause our stock price or trading volume to decline. Stock markets in general and the market for companies in our industry in particular have experienced price and volume fluctuations that have affected and continue to affect the market prices of equity securities of many companies. These fluctuations often have been unrelated or disproportionate to the operating performance of those companies. These broad market and industry fluctuations, as well as general economic, political and market conditions such as recessions, interest rate changes or international currency fluctuations, may negatively impact the market price of our common stock. You may not realize any return on your investment in us and may lose some or all of your investment. In the past, companies that have experienced volatility in the market price of their stock have been subject to securities class action litigation. We have been a party to this type of litigation in the past and may be the target of this type of litigation again in the future. Securities litigation against us could result in substantial costs and divert our management's attention from other business concerns, which could seriously harm our business.

Future sales of our common stock could cause our stock price to fall.

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We have sold, and may in the future sell, shares of our common stock in underwritten offerings and have established, and may in the future establish, "at-the-market" offering programs pursuant to which we may offer and sell shares of our common stock. Sales of securities have resulted and will continue to result in dilution of our existing stockholders, and such sales could cause our stock price to fall.

In addition, if our existing stockholders sell, or indicate an intent to sell, a large number of shares of our common stock in the public market, it could cause our stock price to fall. We may also issue shares of common stock or securities convertible into our common stock from time to time in connection with financings, acquisitions, investments or otherwise. Any such issuance would result in dilution to our existing stockholders and could cause our stock price to fall.

Concentration of ownership by our principal stockholders may result in control by such stockholders of the composition of our board of directors.

Our existing significant stockholders, executive officers, directors and their affiliates beneficially own a significant number of our outstanding shares of common stock. As a result, these stockholders will be able to exercise a significant level of control over all matters requiring stockholder approval, including the election of directors. This control could have the effect of delaying or preventing a change of control of our company or changes in management and will make the approval of certain transactions difficult or impossible without the support of these stockholders.

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, as amended and restated, may have the effect of delaying or preventing a change of control or changes in our management. Our amended and restated certificate of incorporation and bylaws include provisions that:

- authorize our board of directors to issue, without further action by the stockholders, up to 50,000,000 shares of undesignated preferred stock and up to approximately 1,000,000,000 shares of authorized but unissued shares of common 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 terms;
- provide that our directors may be removed only for cause; and
- 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.

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.

Our large number of authorized but unissued shares of common stock may potentially dilute existing stockholders' stockholdings.

We have a significant number of authorized but unissued shares of common stock. Our board of directors may issue shares of common stock from this authorized but unissued pool from time to time without stockholder approval, resulting in the dilution of our existing stockholders.

We do not intend to pay dividends for the foreseeable future.

We have never declared or paid any dividends on our common stock and do not intend to pay any dividends in the foreseeable future. In addition, the terms of our existing debt agreement restrict our ability to pay dividends on our common stock. We anticipate that we will retain all of our future earnings for use in the operation of our business and for general corporate purposes. Any determination to pay dividends in the future will be at the discretion of our board of directors. Accordingly, investors must rely on

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sales of their common stock after price appreciation, which may never occur, as the only way to realize any future gains on their investments.

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

Not applicable.

Item 3.Default Upon Senior Securities

Not applicable.

Item 4.Mine Safety Disclosures

Not applicable.

Item 5.Other Information

None

Item 6.Exhibits

The exhibits listed in the Exhibit Index immediately preceding the exhibits are filed (other than exhibits 32.1 and 32.2) as part of this Quarterly Report on Form 10-Q and such Exhibit Index is incorporated herein by reference.

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Signatures

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

PACIFIC BIOSCIENCES OF CALIFORNIA, INC.

Date: August 2, 2017

By: /s/ SUSAN K. BARNES

Susan K. Barnes
Executive Vice President, Chief Financial Officer and

Principal Accounting Officer

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Exhibit Index

Exhibit Number	Exhibit Description
10.1	Fourth Lease Amendment Agreement by and between Pacific Biosciences of California, Inc. and Peninsula Innovation Partners, LLC, dated May 31, 2017.
31.1	Certification of Chief Executive Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
31.2	Certification of Chief Financial Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
32.1*	Certification of the Chief Executive Officer pursuant to Section 906 of the Sarbanes-Oxley Act of 2002 (18 U.S.C. Section 1350).
32.2*	Certification of the Chief Financial Officer pursuant to Section 906 of the Sarbanes-Oxley Act of 2002 (18 U.S.C. Section 1350).
101.INS	XBRL Instance Document
101.SCH	XBRL Taxonomy Extension Schema Document
101.CAL	XBRL Taxonomy Extension Calculation Linkbase Document
101.DEF	XBRL Taxonomy Extension Definition Linkbase Document
101.LAB	XBRL Taxonomy Extension Label Linkbase Document
101.PRE	XBRL Taxonomy Extension Presentation Linkbase Document

*The certifications attached as Exhibit 32.1 and 32.2 that accompany this Quarterly Report on Form 10-Q are deemed furnished and not filed with the Securities and Exchange Commission and are not to be incorporated by reference into any filing of Pacific Biosciences of California, Inc. under the Securities Act of 1933, as amended, or the Securities Exchange Act of 1934, as amended, whether made before or after the date of this Quarterly Report on Form 10-Q, irrespective of any general incorporation language contained in such filing