PACIFIC BIOSCIENCES OF CALIFORNIA, INC.
Form 10-K
March 15, 2013
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UNITED STATES

SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

Form 10-K

(Mark One)

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

For the fiscal year ended December 31, 2012

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 incorporation or organization)	**(I.R.S. Employer Identification No.)**
1380 Willow Road	
Menlo Park, CA 94025	**94025**
(Address of principal executive offices)	**(Zip Code)**

(Registrant s telephone number, including area code)

(650) 521-8000

Securities registered pursuant to Section 12(b) of the Act:

Title of Each Class	**Name of Each Exchange on Which Registered**
Common Stock, par value $0.001 per share	**The NASDAQ Stock Market LLC**

Securities registered pursuant to Section 12(g) of the Act:

None

Indicate by check mark if the registrant is a well-known, seasoned issuer, as defined in Rule 405 of the Securities Act. Yes ¨ No x

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act. Yes ¨ No x

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 x 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 x No ¨

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K is not contained herein, and will not be contained to the best of registrant s knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K. x

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

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

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

Aggregate market value of registrant s common stock held by non-affiliates of the registrant on June 30, 2012, based upon the closing price of Common Stock on such date as reported by NASDAQ Global Select Market, was approximately $89,575,000. Shares of voting stock held by each officer and director have been excluded in that such persons may be deemed to be affiliates. This assumption regarding affiliate status is not necessarily a conclusive determination for other purposes.

Number of shares outstanding of the issuer s common stock as of March 7, 2013: 57,497,327

DOCUMENTS INCORPORATED BY REFERENCE:

Portions of the registrant s definitive Proxy Statement relating to its 2013 Annual Meeting of Stockholders to be held on May 23, 2013 are incorporated by reference into Part III of this Form 10-K where indicated. Such Proxy Statement will be filed with the U.S. Securities and Exchange Commission within 120 days after the end of the fiscal year to which this report relates.

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Pacific Biosciences of California, Inc.

Annual Report on Form 10-K

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SPECIAL NOTE REGARDING FORWARD LOOKING STATEMENTS

Discussions under the captions Business, Risk Factors, and Management s Discussion and Analysis of Financial Condition and Results of Operations contain or may contain forward-looking statements that are based on our management s beliefs and assumptions and on information currently available to our management. The statements contained in this Annual Report on Form 10-K that are not purely historical are forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended (the Exchange Act), and include, but are not limited to, statements regarding the sequencing advantages of our SMRT technology, our market opportunity, our strategic plans, our expectation regarding the conversion of backlog to revenue, our manufacturing plans, our research and development plans, our competition, our intent regarding dividends, our expectation regarding our unrecognized income tax benefits, the sufficiency of our cash, cash equivalents and investments to fund our projected operating requirements, and the effects of recent accounting pronouncements on our financial statements. Such statements may be signified by terms such as anticipates, believes, could, seeks, estimates, expects, intends, may, plans, potential, predicts, projects, should, will, would or negatives of those terms. Forward-looking statements involve known and unknown risks, uncertainties and other factors that may cause our actual results, performance or achievements to be materially different from any future results, performance or achievements expressed or implied by the forward-looking statements. Factors that could cause or contribute to such differences include, but are not limited to, those discussed under the heading Risk Factors in this report and in other documents we file with the Securities and Exchange Commission (SEC). Given these risks and uncertainties, you should not place undue reliance on these forward-looking statements. Also, forward-looking statements represent our management s beliefs and assumptions only as of the date of this report. Except as required by law, we assume no obligation to update these forward-looking statements publicly, or to update the reasons actual results could differ materially from those anticipated in these forward-looking statements, even if new information becomes available in the future.

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PART I

ITEM 1. BUSINESS

Overview

We develop, manufacture and market an integrated platform for high resolution genetic analysis. We have developed a technology to study the synthesis, composition, structure, and regulation of DNA. Combining advances in nanofabrication, biochemistry, molecular biology, surface chemistry and optics, we created a technology platform using our proprietary single molecule, real-time, or SMRT, technology. Our SMRT technology uses the natural processing power of enzymes, combined with specially designed reagents and detection systems, to record individual biochemical events as they occur. The ability to observe single molecule events in real time provides the scientific community with an advanced tool for investigating basic biochemical processes such as DNA synthesis. Our SMRT technology has the potential to advance scientific understanding by providing a window into biological processes that has not previously been open.

Our initial focus is on the DNA sequencing market where we have developed and introduced a third generation sequencing platform, the PacBio *RS* High Resolution Genetic Analyzer, using our proprietary SMRT technology. The PacBio *RS* maintains many of the key attributes of first and second generation sequencing technologies while solving many of their inherent limitations, including short readlengths, limited flexibility, long time to result, complex sample preparation and risk of amplification bias. Our system provides long readlengths, flexibility in experimental design, fast time to result, and ease of use. The PacBio *RS* consists of an instrument platform that uses our proprietary consumables, which are currently comprised of our SMRT Cells and several chemical reagent kits used to prepare and sequence DNA samples. Our system is designed to be integrated into existing laboratory workflows and information systems.

Pacific Biosciences of California, Inc., formerly Nanofluidics, Inc. was incorporated in the State of Delaware in 2000. Our executive offices are located at 1380 Willow Road, Menlo Park, California 94025, and our telephone number is (650) 521-8000.

The Underlying Science

Genetic inheritance in living systems is conveyed through a naturally occurring information storage system known as deoxyribonucleic acid, or DNA. DNA stores information in linear chains of the chemical bases adenine, cytosine, guanine and thymine, represented by the symbols, A, C, G and T. Inside living cells, these chains usually exist in pairs bound together in a double helix by complementary bases, with A of one strand always binding to a T of the other strand and C always binding to G.

In humans, there are approximately three billion DNA base-pairs in the molecular blueprint of life, called the genome. These three billion bases are divided into 23 chromosomes ranging in size from 50 million to 250 million bases. Normally, there are two complete copies of the genome contained in each cell, one of maternal origin and the other of paternal origin. When cells divide, the genomes are replicated by an enzyme called DNA polymerase, which visits each base in the sequence, creating a complementary copy of each chromosome using building blocks called nucleotides. Contained within these chromosomes are approximately 23,000 smaller regions, called genes, each one containing the recipe for a protein or group of related proteins. The natural process of protein production takes place in steps. In a simplified model, the first step is transcription, a process in which an enzyme called RNA polymerase uses DNA as a template to synthesize new strands of messenger RNA, or mRNA. The mRNAs are then translated into proteins by ribosomes. The resulting proteins go on to play crucial roles in cellular structure and function and thus the operation of biological systems.

Numerous scientific approaches have evolved to adapt to the emerging awareness of the magnitude of complexity embedded in biological systems. The field of genomics developed to study the interactions among components in the genome and the massive quantities of associated data. Subsequently, proteomics, transcriptomics and a number of other related fields emerged.

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Advances in biology over the next decade are expected to be shaped by a more detailed understanding of the fundamental complexity of biological systems. These systems vary among individuals in previously unrecognized ways and are influenced by factors including time, molecular interactions, and cell type.

Importantly for the future of genomics, the first few whole-genome sequencing studies of disease have shown that rare mutations play a critical role in human disease. These mutations would not have been detected in earlier studies because too few people, or perhaps only one person, carry the specific mutation. In addition, it is now understood that structural changes to the genome in which whole sections are deleted, inverted, copied or moved may be responsible for a significant fraction of variation among individuals. The scope of these structural changes challenges the very idea of a reference genome.

Recent discoveries have highlighted additional complexities in the building blocks of DNA and RNA, including the presence of modified bases. It has long been known that in humans and many other multicellular organisms, the cytosine bases can be chemically modified through the addition of a methyl group in a process called methylation. These chemical modifications have been shown to play a role in embryonic development, have important impacts on diseases such as cancer and can even affect the characteristics of offspring for multiple generations. More recently, it has been discovered that other bases, such as hydroxymethylcytosine, or hmC, 8-Oxoguanine and many others, play important physiological roles. In bacteria, 6-methyladenine has been shown to play an important role in pathogenicity

In a recently published study in *Nature Biotechnology* of the Shiga-toxin-producing *E. coli* strain that caused a serious outbreak in northern Germany in 2011 which killed approximately fifty people and sickened over 1,000 others, researchers had previously sequenced the genome of the same strain; however, the data had not explained the high virulence of the strain. By analyzing the outbreak strain sequence for 6-methyladenine residues using the PacBio *RS*, researchers discovered a series of methylase-like enzymes that targeted specific sequences throughout the genome as they made their chemical changes. Follow-up studies of a particular methylase suggest that it alters the expression of gene pathways related to horizontal gene transfer an important property that could be linked to virulence.

Another source of complexity derives from the processing of RNA molecules after being transcribed from the genome. The majority of all genes code for different forms of a protein that can be made depending on the structure of the RNA molecule, referred to as splice variants. A detailed understanding of both the expression pattern and regulation of these variants is believed to play an important role in a number of critical biological processes.

Recent advances in our understanding of biological complexity have highlighted the need for advanced tools such as the PacBio *RS* to study DNA, RNA and proteins. In the field of DNA sequencing incremental technological advances have provided novel insights into the structure and function of the genome. Despite these advances, researchers have not been able to fully characterize the human genome and the genomes of other living organisms because of inherent limitations in these tools.

Evolution of Sequencing

In order to understand the limitations of current DNA sequencing technologies, it is important to understand the sequencing process. This consists of three phases: sample preparation, physical sequencing, and analysis. The first step of sample preparation is to either break the target genome into multiple small fragments, or depending on the amount of sample DNA available, amplify the target region using a variety of molecular methods. In the physical sequencing phase, the individual bases in each fragment are identified in order, creating individual reads. The number of individual bases identified contiguously is defined as readlength. In the analysis phase, bioinformatics software is used to align overlapping reads, which allows the original genome to be assembled into contiguous sequence. The longer the readlength, the easier it is to assemble the genome.

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First Generation Sequencing

First generation sequencing, also referred to as Sanger sequencing, was originally developed by Frederick Sanger in 1977. With this technology, during sample preparation, scientists first make different sized fragments of DNA each starting from the same location. Each fragment ends with a particular base that is labeled with one of four fluorescent dyes corresponding to that particular base. Then all of the fragments are distributed in order of their length by driving them through a gel. Information regarding the last base is used to determine the original sequence. Under standard conditions, this method results in a readlength that is approximately 700 bases on average, but may be extended to 1,000 bases. These are relatively long readlengths compared with many other sequencing methods. However, first generation sequencing is limited by the small amounts of data that can be processed per unit of time, referred to as throughput.

Second Generation Sequencing

Commercial second generation DNA sequencing tools emerged in 2005 in response to the low throughput of first generation methods. To address this problem, second generation sequencing tools achieve much higher throughput by sequencing a large number of DNA molecules in parallel. In order to generate this large number of DNA molecules, a copying method called PCR amplification is required. In addition to adding time and complexity to the sample preparation process, the amplification process can introduce errors known as amplification bias. The effect of this bias is that the resulting copies are not uniformly representative of the original template DNA.

In most second generation tools, tens of thousands of identical strands are anchored to a given location to be read in a process consisting of successive flushing and scanning operations. The flush and scan sequencing process involves sequentially flushing in reagents, such as labeled nucleotides, incorporating nucleotides into the DNA strands, stopping the incorporation reaction, washing out the excess reagent, scanning to identify the incorporated base and finally treating that base so that the strand is ready for the next flush and scan cycle. This cycle is repeated until the reaction is no longer viable.

Due to the large number of flushing, scanning and washing cycles required, the time to result for second generation methods is generally long, often taking days. This repetitive process also limits the average readlength produced by most second generation systems under standard sequencing conditions to approximately 35 to 400 bases. The array of DNA anchor locations can have a high density of DNA fragments, leading to extremely high overall throughput and a resultant low cost per identified base when the machine is run at high capacity. However, the disadvantages of second generation sequencing include short readlength, complex sample preparation, the need for amplification, long time to result, the need for many samples to justify machine operation and significant data storage and interpretation requirements.

First and second generation sequencing technologies have led to a number of scientific advances. However, given the inherent limitations of these technologies, researchers still have not been able to unravel the complexity of genomes.

Pacific Biosciences Solution The Third Generation of Sequencing Technology

We have developed a technology platform that enables single molecule, real-time, or SMRT, detection of biological processes. Based on our SMRT technology platform, we have introduced a third generation DNA sequencing system, the PacBio *RS*, that addresses many of the limitations of the first and second generation technologies, by providing longer readlengths, increased flexibility, reduced time to result, simplified sample preparation and elimination of amplification bias. In addition, the PacBio *RS* enables the study of modified bases through its unique feature of detecting the kinetics of base incorporation during DNA synthesis.

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Pacific Biosciences SMRT Technology

Our SMRT technology enables the observation of DNA synthesis as it occurs in real time by harnessing the natural process of DNA replication, which in nature is a highly efficient and accurate process actuated by the DNA polymerase. The DNA polymerase attaches itself to a strand of DNA to be replicated, examines the individual base at the point it is attached, and then determines which of four building blocks, or nucleotides, is required to complement that individual base. After determining which nucleotide is required, the polymerase incorporates that nucleotide into the growing strand that is being produced. After incorporation, the enzyme advances to the next base to be replicated and the process is repeated.

To overcome the challenges inherent in observing the natural activity of the DNA polymerase, an enzyme that is 15 nanometers (nm) in diameter running in real time, we introduced three key innovations:

The SMRT Cell

Phospholinked nucleotides

The PacBio *RS*

The SMRT Cell

One of the fundamental challenges with observing a single DNA polymerase molecule working in real time is the ability to detect the incorporation of a single nucleotide, taken from a large pool of potential nucleotides, during DNA synthesis. To resolve this problem, we utilize our nanoscale innovation, the zero-mode waveguide, or ZMW.

A ZMW is a hole, tens of nanometers in diameter. The small size of the ZMW prevents visible laser light, which has a wavelength of approximately 600nm, from passing entirely through the ZMW. Rather than passing through, the light decays as it enters the ZMW. Therefore, by shining a laser into the ZMW, only the bottom 30nm of the ZMW becomes illuminated. DNA polymerases are anchored to the bottom of the glass surface of the ZMWs using a proprietary technique. Nucleotides, each type labeled with a different colored fluorophore, are then flooded above an array of ZMWs at the required concentration. As no laser light penetrates up through the holes to excite the fluorescent labels, the labeled nucleotides above the ZMWs do not fluoresce. Only when they diffuse into the bottom 30nm of the ZMW do they fluoresce. When the correct nucleotide is detected by the polymerase, it is incorporated into the growing DNA strand in a process that takes milliseconds in contrast to simple diffusion which takes microseconds. This difference in time results in higher signal intensity for incorporated versus unincorporated nucleotides, which creates a high signal-to-noise ratio. Thus, the ZMW has the ability to detect a single incorporation event against the background of fluorescently labeled nucleotides at biologically relevant concentrations. Our DNA sequencing is performed on proprietary SMRT Cells, each having an array of approximately 150,000 ZMWs. Each ZMW is capable of containing a DNA polymerase molecule bound to a single DNA template. Currently, our system can monitor 75,000 ZMWs simultaneously. The system can be set up to monitor the first set of 75,000 ZMWs on a SMRT Cell, then immediately shift to monitoring the second set of 75,000 ZMWs on the same SMRT Cell. As a result, the SMRT Cell enables the potential detection of approximately 150,000 single molecule sequencing reactions. Currently, our immobilization process randomly distributes polymerases into ZMWs across the SMRT Cell, resulting in approximately one-third of the ZMWs being available for use. We plan on introducing an enhancement to our system in 2013 that would enable the system to monitor the 150,000 ZMWs simultaneously.

Phospholinked Nucleotides

Our proprietary phospholinked nucleotides have a fluorescent dye attached to the phosphate chain of the nucleotide rather than to the base. As a natural step in the synthesis process, the phosphate chain is cleaved when the nucleotide is incorporated into the DNA strand. Thus, upon incorporation of a phospholinked nucleotide, the DNA polymerase naturally frees the dye molecule from the nucleotide when it cleaves the phosphate chain. Upon cleaving, the label quickly diffuses away, leaving a completely natural piece of DNA with no evidence of labeling remaining.

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The PacBio RS

The PacBio *RS* is an instrument that conducts, monitors, and analyzes single molecule biochemical reactions in real time. The PacBio *RS* uses a high numerical aperture objective lens and four single-photon sensitive cameras to collect the light pulses emitted by fluorescent reagents allowing the observation of biological processes. An optimized set of algorithms is used to translate the information that is captured by the optics system. Using the recorded information, light pulses are converted into either an A, C, G or T base call with associated quality metrics. Once sequencing is started, the real-time data is delivered to the system s primary analysis pipeline, which outputs base identity and quality values, or QVs. To generate a consensus sequence from the data, an assembly process aligns the different fragments from each ZMW based on common sequences.

SMRT Sequencing Advantages

Sequencing based on our SMRT technology offers the following key benefits:

Single molecule, real-time analysis. The ability to observe single molecules in real time combined with long readlength allows our system to observe structural and cell type variation that present challenges for existing short-read technologies. Unlike many other sequencing platforms, minimal amounts of reagent and sample preparation are required and there are no time-consuming flushing, scanning and washing steps.

Longer readlengths. Our SMRT technology has been demonstrated to produce a distribution of readlengths of 4,500 base pairs on average, with 5% of reads over 12,000 base pairs, which facilitates mapping and assembly. Longer readlengths require the sequencing of fewer overlapping segments, referred to as coverage, to efficiently assemble the underlying genomic structure. Long readlengths are an important factor in enabling a comprehensive view of the genome, as they can reveal multiple types of genetic variation, such as large-scale rearrangements observed in cancer. Long readlengths are also highly enabling for *de novo* assembly of genomes, where reference genomes do not exist or are not used for the assembly.

Faster time to result. With the PacBio *RS*, sample preparation to sequencing results can take less than one day. A typical sequencing run can require as little as 30 to 120 minutes of instrument time, with target polymerase speeds of two to three bases per second, compared to other technologies which can take multiple days to produce results. This fast time to result may have important implications for applications where speed is of critical importance such as infectious disease monitoring and molecular pathology.

Less systematic error. The sample preparation step for SMRT sequencing does not require amplification and therefore the reads are not subject to amplification bias. In addition, the read errors from SMRT sequencing are largely random, and therefore they can be more easily resolved by aligning and comparing multiple overlapping reads. Second generation sequencing technologies generally have more systematic read errors, and are more difficult to resolve because identical errors are more likely to be present in each overlapping read. As a result, we believe that SMRT sequencing can enable a more complete assembly of genomes and higher consensus accuracy with less coverage than other available sequencing technologies.

Ease of use. Our system is designed to be easy to use and adopt because it is compatible with existing lab workflows and informatics infrastructures. Our SMRTbell sample preparation protocol is designed to be simple and fast. The PacBio *RS* is equipped with a touchscreen interface that requires minimal user intervention. The data format has been designed to be compatible with standard informatics systems. We believe that these attributes allow for easy training at customer sites.

Flexibility and granularity. The PacBio *RS* system offers multiple protocols, including standard and circular consensus sequencing, enabling the user to optimize performance based on the needs for a particular project. It can be used with a variety of sample types and can output a range of DNA lengths. The system also has the ability to scale the throughput and cost of sequencing across a range of small and large projects.

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Ability to observe and capture kinetic information. The ability to observe the activity of a DNA polymerase in real time enables the PacBio *RS* to collect, measure and assess the dynamics and timing of nucleotides being added to a growing DNA strand, referred to as kinetics. It is well established in the scientific community that chemical modification of DNA such as the addition of a methyl group, known as methylation, can alter the biological activity of the affected nucleotide. The PacBio *RS* detects changes in kinetics automatically by capturing and recording changes in the duration of, and distances between, each of the fluorescent pulses during a typical sequencing analysis. Integrated software can then translate these kinetic signatures into uniquely characterized modified bases such as 6mA, 4mC and 5mC in bacteria. First and second generation sequencing systems are unable to accurately record this type of kinetic data because the flush and scan sequencing process disrupts the timing of the natural incorporation process.

Our Products

We have entered the market with our first product, the PacBio *RS*, a third generation sequencing instrument that provides real-time information at the single molecule level. The initial application for the system is DNA sequencing, and the architectural design of the system may enable a broader range of applications over time. The instrument is designed for expandable capability to permit performance improvements and new applications to be delivered through chemistry and software enhancements without necessitating changes to the hardware.

Our sequencing system includes the PacBio *RS* instrument platform that uses our proprietary consumables, including our SMRT Cells and reagent kits, providing a complete solution to the customer.

The PacBio RS

The PacBio *RS* is an instrument that conducts, monitors and analyzes biochemical sequencing reactions. The instrument is an integrated unit that includes high performance optics, automated liquid handling, a touchscreen control interface, a computational Blade Center and software. The instrument s high performance optics monitor the thousands of ZMWs in real time. The automated liquid handling system performs reagent mixing and prepares SMRT Cells. The instrument s touchscreen control interface, the *RS* Touch, is the user s primary control center to design and monitor experiments as they occur in real time. The Blade Center is the computational brain of the PacBio *RS,* responsible for processing the sequencing data being produced on the SMRT Cells. The PacBio *RS* has been designed to allow for performance improvements without replacement of the instrument hardware.

Consumables

To run our PacBio *RS*, our customers must purchase our proprietary consumable products. Our consumable products include our proprietary SMRT Cells and reagent kits. One SMRT Cell is consumed per sequencing reaction on the PacBio *RS*. Eight SMRT Cells are individually hermetically sealed and packaged together into a streamlined 8Pac format. This enables a researcher to use one or more SMRT Cells per run.

We offer several reagent kits, each designed to address a specific step in the workflow. The Template Preparation Kit is used to convert DNA into our SMRTbell double-stranded DNA library format and therefore includes typical molecular biology reagents, such as ligase, buffers and exonucleases. The Binding Kit, which includes our modified DNA polymerase, is then used to bind this library to the polymerase in preparation for sequencing. The Sequencing Kit contains the reagents required for on-instrument, real-time sequencing, including the phospholinked nucleotides. Each sample can be sequenced in a single SMRT Cell or across many SMRT Cells depending on the needs of the project. As a result, the price per reaction is dependent on the experiment design.

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Product Enhancements

During 2012, we introduced a number of product enhancements that improved the performance and reliability of our products. In the first quarter of 2012, we launched our C2 product release, which doubled readlengths to approximately 3,000 bases on average, with 5 percent of those reads above 8,000 bases, increased throughput, defined as mappable data per SMRT cell, reduced input sample requirements, and significantly improved system reliability. During the second quarter, we launched new software which provided customers with the ability to detect base modifications using the kinetic information captured by the PacBio RS system. During the third quarter, we introduced the Automated MagBead Station, which simplifies sample preparation, and enables customers to generate more consistent, high-quality data from lower quality starting samples. The MagBead Station can also further reduce the amount of input sample required. Since the beginning of the year, we have introduced product and method improvements that have cut the sample input required to sequence with the PacBio RS system by approximately 90%. During the fourth quarter, we introduced a follow-on software release that included automated tools for detecting and characterizing methylated bases in bacteria, which enables the study of bacterial methylomes on a large scale. We also introduced our XL chemistry and software release in the fourth quarter, which further increased the readlength and throughput capabilities of our system. With this most recent chemistry and software, our customers can now generate readlengths of 4,500 bases on average, with 5 percent of those reads above 12,000 bases. Finally, during the fourth quarter, we made available an early version of new secondary analysis software on our DevNet site, which enables customers to assemble genomes with 99.999% accuracy at 20x coverage using only standard, PacBio long reads.

Market for Our Products

Our customers use our products for sequencing the genomes of a wide range of organisms. With its current throughput capability, the PacBio *RS* is well-suited for sequencing smaller genomes, such as bacteria, and for sequencing targeted regions of larger genomes such as humans and plants. Over the past year, we have increased the throughput of the PacBio *RS* through product enhancements, which we believe will expand the targeted applications for our products. We plan on continuing to increase throughput with future product enhancements.

There are a number of emerging markets for sequencing-based tests, including molecular diagnostics, which represent significant potential opportunities for our products. The development of these markets is subject to variability driven by ongoing changes in the competitive landscape, evolving regulatory requirements, government funding of research and development activities, and macroeconomic conditions. Introductions of new technologies and products, while positive to the overall development of these markets, when evaluated relative to uncertainties surrounding government budgets and economic stress in certain regions of the world, result in greater competition for the limited financial resources available. As we continue to expand into these emerging markets, the development of our business will be impacted by the variability of the factors affecting the growth of these markets.

Pacific Biosciences Strategy

We plan to execute the following strategy:

Contribute to the future of biological analysis by offering differentiated products based on our proprietary SMRT technology. Our SMRT technology provides a window into biological processes that has not previously been available. The combination of our products and underlying SMRT technology s ability to deliver long read lengths, complete assemblies, and short time to result afford the scientific community a new tool to conduct research not possible with first and second generation sequencing instruments.

Focus initially on a small number of sequencing applications in which our SMRT technology provides unique capability. While we believe our third generation sequencing technology will address many of the limitations in current sequencing technologies and enable a wide range of experiments and

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applications, we plan to drive adoption of our technology by focusing initially on applications that our customers have identified as high-value applications for SMRT sequencing. Among the early applications identified by our customers are *de novo* Genome Assembly, Targeted Sequencing and Base Modification Analysis. We plan to develop whole product solutions around these applications, making it easier for customers who are not typically early adopters of new technology to take advantage of SMRT sequencing.

Continually enhance product performance to increase market share. The design of the PacBio *RS* allows for significant performance improvements without replacement of the instrument hardware. Our flexible platform is designed to generate a recurring revenue stream through the sale of proprietary SMRT Cells and reagent kits. Our research and development efforts are focused on product enhancements to reduce DNA sequencing cost and time as well as expand capabilities. During 2012, we introduced our C2 and XL chemistry enhancements, our automated MagBead loader, software analysis tools for enhanced assembly, and secondary analysis tools for detecting and characterizing base modifications. Compared with our initial product launch in 2011, these product enhancements have enabled an approximate 4x improvement in readlength, an approximate 5x improvement in mappable data per SMRT Cell, and reduced input sample required by 90%. In addition, we have demonstrated the capability of achieving consensus accuracy of Q50 (99.999%) with 20x fold coverage, and automated the detection and characterization of base modifications in bacteria. We also significantly improved the reliability of our products so that the instrument uptime of the PacBio *RS* is comparable to that of some of the more mature life science tools. We plan to continue introducing enhancements to our products over time.

Leverage platform to develop and launch additional applications. We plan to leverage our SMRT technology platform to develop new applications such as sequencing larger and more complex genomes and expanding the ability to detect and characterize base modifications. In the long term, our SMRT technology may also be adapted for RNA transcription monitoring, direct RNA sequencing, protein translation and ligand binding. We believe these applications can create substantial new markets for our technology.

Create a global community of users to enhance informatics capabilities and drive adoption of our products. We have worked closely with members of the informatics community to develop and define standards for working with single molecule, real-time sequence data. We maintain the PacBio DevNet site, a website on which we make available various software tools and information about our SMRT sequencing technology to support academic informatics developers, life scientists and independent software vendors interested in creating tools to work with our third generation sequencing data. This gives the user flexibility to perform further analysis of the sequencing data through third-party software or share data with collaborators. To maximize the flexibility and functionality for all users, all of our secondary analysis algorithms are made available under an open source license. We have also launched the PacBio SampleNet site, a website on which we make available various tools for simplifying and enhancing sample preparation protocols.

Marketing, Sales, Service and Support

We market our products through a direct sales force in North America and Europe and primarily through distributors in Asia. Our sales strategy involves the use of a combination of sales managers, sales representatives and field application specialists. The role of our sales managers and sales representatives is to educate customers on the advantages of SMRT technology and the applications that our technology makes possible. The role of our field application specialists is to provide on-site training and scientific technical support to prospective and existing customers. Our field application specialists are technical experts, often with advanced degrees, and generally have extensive experience in academic research and core sequencing lab experience.

Service for our instruments is performed by our field service engineers. Our field service engineers are trained by experienced personnel to test, trouble-shoot, and service instruments installed at customer sites.

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In addition, we maintain an applications lab team in Menlo Park, California composed of scientific experts who can transfer knowledge from the research and development team to the field application specialists. The applications lab team also runs foundational scientific collaborations and proof of principle studies, which help demonstrate the value of our product offering to prospective customers.

Customers

Our customers include genome centers, clinical, government and academic institutions, genomics service providers and agricultural companies. In general, our customers will isolate, prepare and analyze genetic samples using the PacBio *RS* in their own research labs to address their specific applications and scientific questions. For example, customers in academic research institutions may have bacteria, animal, or human DNA samples isolated from various sources while agricultural biology, or AgBio, companies may have DNA samples isolated from different strains of rice, corn or other crops. For each of the years ended December 31, 2012, 2011 and 2010, no single end customer accounted for more than 10% of our total revenue.

We believe that the majority of our current customers are early adopters of sequencing technology. By focusing our efforts on high-value applications, we plan to drive the adoption of our products across a broader customer base and into large-scale projects. In general, the broader adoption of new technologies by mainstream customers can take a number of years, and there can be no assurance that we will be successful in gaining broader adoption.

We currently sell our products to a number of customers outside the United States, including customers in other areas of North America, Europe, and Asia. Revenue from customers outside the United States totaled $14.6 million, or 56% of our total revenue, during fiscal 2012, compared to $6.3 million, or 19%, in fiscal 2011, and there were no sales to customers outside the United States in fiscal 2010 (see also Note 12. Segment and Geographic Information in the Notes to Consolidated Financial Statements of this Form 10-K). The Company s assets are primarily located in the United States of America. Please see the risk factor titled Doing business internationally creates operational and financial risks for our business in Part I, Item 1A in this Form 10-K for a discussion of the risks we face with respect to our foreign operations.

Our business is subject to seasonal fluctuations. Although we have a limited history of selling our products, similar to other companies in our industry, we have experienced a reduction in sales during our fiscal third quarter, which are the three months ending September 30 each year, when many customers, particularly those in Europe, take extended vacations.

Backlog

As of December 31, 2012, our system revenue backlog was approximately $2.9 million, compared to $11.0 million at December 31, 2011. We define backlog as purchase orders or signed contracts from our customers which we believe are firm and for which we have not yet recognized revenue. We expect to convert this backlog to revenue during the first half of 2013 subject to customers who may otherwise seek to cancel or delay their orders even if we are prepared to fulfill them.

Manufacturing

Our principal manufacturing facilities are located at our headquarters in Menlo Park, California. We currently perform most of the manufacture of our instruments in-house, while outsourcing certain sub-assemblies to third-party manufacturers. With respect to the manufacture of SMRT Cells, we subcontract wafer fabrication and processing to semiconductor processing facilities, but conduct critical surface treatment processes internally. In addition, we currently manufacture critical reagents in-house, including our phospholinked nucleotides and our DNA polymerase.

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We purchase both custom and off-the-shelf components from a large number of suppliers and subject them to significant quality specifications. We periodically conduct quality audits of suppliers and have established a supplier certification program. We purchase components through purchase orders. Some of the components required in our products are currently either sole sourced or single sourced.

Research and Development

Our SMRT technology requires the blending of a number of unique disciplines, namely nanofabrication, physics, photonics, optics, molecular biology, engineering, signal processing, high performance computing, and bioinformatics. Our research and development team is a blend of these disciplines creating a single, cross-functional operational unit. We have also established productive working relationships with technology industry leaders, as well as leading academic centers, to augment and complement our internal research and development efforts. Research and development expense incurred was $47.6 million, $76.1 million and $111.8 million during 2012, 2011 and 2010, respectively.

We plan to continue investment in research and development to enhance the performance and expand the application of our current products, and introduce additional products based on our SMRT technology. Our goals include further improvements in sequencing readlength and mappable data per SMRT Cell, chemistry and software enhancements for expanding base modification analysis, and enhancements in sample preparation and bioinformatics tools that take advantage of the capabilities of our products. In addition, our engineering teams will continue their focus on increasing instrument component and system reliability, reducing costs, and implementing additional system flexibility and versatility through the enhancement of existing products and development of new products.

Intellectual Property

Developing and maintaining a strong intellectual property position is an important element of our business. We have sought patent protection for our SMRT technology, and may seek patent protection for improvements and ancillary technology conceived in developing our SMRT technology if we believe such protection will give us an advantage over competitors or potential competitors.

Our current patent portfolio, including patents exclusively licensed to us, is directed to various technologies, including SMRT nucleic acid sequencing and other methods for analyzing biological samples, ZMW arrays, surface treatments for such ZMW arrays, phospholinked nucleotides and other reagents for use in nucleic acid sequencing, optical components and systems, processes for identifying nucleotides within nucleic acid sequences and processes for analysis and comparison of nucleic acid sequence data. Some of the patents and applications that we own, as well as some of the patents and applications that we have licensed from other parties, are subject to U.S. government march-in rights, whereby the U.S. government may disregard our exclusive patent rights on its own behalf or on behalf of third parties by imposing licenses in certain circumstances, such as if we fail to achieve practical application of the U.S. government funded technology, because action is necessary to alleviate health or safety needs, to meet requirements of federal regulations, or to give preference to U.S. industry. In addition, U.S. government funded inventions must be reported to the government and U.S. government funding must be disclosed in any resulting patent applications.

As of December 31, 2012, we own or hold exclusive licenses to 103 issued U.S. patents, 108 pending U.S. patent applications, 58 granted foreign patents and 112 pending foreign patent applications, including foreign counterparts of U.S. patent and patent applications. The full term of the issued U.S. patents will expire between 2016 and 2031. We also have exclusive and non-exclusive patent licenses with various third parties to supplement our own large and robust patent portfolio.

Of these patents and patent applications, 22 issued U.S. patents, three pending U.S. patent applications, 19 granted foreign patent and four pending foreign patent applications are licensed to us by the Cornell Research

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Foundation, which manages technology transfers on behalf of Cornell University, collectively referred to as Cornell. These patents and patent applications are directed to the core SMRT sequencing methods and systems and other analysis methods, and to ZMW arrays used in our current and planned products. The license agreement provides us with the exclusive right to make, use, sell, offer for sale, lease, import, export or otherwise dispose of products covered by the licensed patents in all fields of use. In exchange, we are obligated to make certain royalty payments to Cornell, including a minimum annual royalty payment, and meet certain reporting and other requirements to Cornell. We are also obligated to reimburse Cornell for the costs of prosecuting the patents and patent applications that are subject to the license. The research leading to the licensed technology was funded by the U.S. government and therefore our license from Cornell is subject to U.S. government march-in rights. Cornell may terminate its agreement with us if we are in default of our payment or reporting obligations, are in material breach of the agreement, or fail to fulfill our diligence obligations with respect to commercializing products using the licensed technology.

We have also entered into a license agreement with Indiana University Research and Technology Corporation, or IURTC, for U.S. Patent No. 6,399,335, which relates to nucleoside triphosphates that include a labeling group attached through the terminal phosphate group in the triphosphate chain. Under the terms of this license agreement, we have exclusive rights to make, have made, sell, offer to sell, have sold, use, import and have imported, products that practice the invention claimed in the patent in certain sequencing-related fields. In exchange, we are obligated to make certain royalty and milestone payments to IURTC, and to meet certain reporting requirements to IURTC. We are also obligated to reimburse IURTC for the costs of prosecuting the patents and patent applications that are subject to the license. The research leading to the licensed technology was funded by the U.S. government and therefore our license from IURTC is subject to U.S. government march-in rights. IURTC may terminate its agreement with us if we are in default of our payment or record keeping obligations, are in material breach of the agreement, or fail to fulfill our diligence obligations with respect to commercializing products using the licensed technology.

In addition, we have entered into a license agreement with Stanford University, or Stanford, for U.S. Patent No. 7,297,532, referred to as the 532 patent, which relates to immobilized ribosomes for use in analysis of ribosomal activity. Under the terms of this license agreement, we have exclusive rights to make, have made, use, import, offer to sell and sell products that would practice the invention claimed in the patent in certain fields of use until June 8, 2018, after which the license will become non-exclusive until the 532 patent expires. In exchange, we are obligated to make certain royalty and license maintenance payments to Stanford, and to meet certain reporting and other obligations to Stanford. We are also obligated to reimburse Stanford for all patenting expenses associated with the 532 patent, including maintenance fees and costs associated with any interference or reexamination matters. The research leading to the 532 patent was funded by the U.S. government and therefore our license from Stanford is subject to U.S. government march-in rights. Stanford may terminate its agreement with us if we are in default of our payment or reporting obligations, are in breach of any provision of the agreement, or fail to fulfill our diligence obligations with respect to commercializing products relating to the 532 patent.

We have also entered into a license agreement with GE Healthcare Bio-Sciences Corp, or GE Healthcare, for several U.S. and foreign patents and pending patent applications related to labeled nucleoside polyphosphate compounds. Under the terms of the license, we have the non-exclusive right to make, have made, import, use, distribute, offer to sell and sell products that practice the inventions claimed in the patents. In exchange, we are obligated to make certain royalty and other payments to GE Healthcare. GE Healthcare may terminate its agreement with us if, among other things, we are in breach of the agreement.

In June 2010, we entered into a collaboration agreement with Gen-Probe Incorporated, or Gen-Probe, regarding the research and development of instruments integrating our SMRT technologies and Gen-Probe s sample preparation technologies for use in clinical diagnostics. The agreement expired by its own terms on December 15, 2012. Certain provisions of the agreement survive its expiration, including those relating to the disposition of any intellectual property developed or created in the course of the collaboration and those providing each party with

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preferred access to certain products of the other party when commercially available. However, we do not anticipate that these surviving provisions will have a material impact on our business or intellectual property position.

Where patent protection is difficult to obtain or difficult to enforce for a particular technological development or the technological development derives greater value from being maintained as confidential information, we seek to protect such information as a trade secret.

Competition

Given the market opportunity, there are a significant number of competing companies offering DNA sequencing equipment or consumables. These include Illumina Inc., Life Technologies Corporation and Roche Applied Science. These companies currently have greater financial, technical, research and/or other resources than we do. They also have larger and more established manufacturing capabilities and marketing, sales and support functions. We expect the competition to intensify within this market as there are also several companies in the process of developing new technologies, products and services, such as Oxford Nanopore Technologies Ltd.

In order for us to successfully compete against these companies, we will need to demonstrate that our products deliver superior performance and value as a result of our key differentiators, including single molecule, real-time resolution, long readlength, fast time to result and flexibility, as well as the breadth and depth of current and future applications.

Employees

As of December 31, 2012, we had 342 full-time employees. Of these employees, 125 were in research and development, 67 were in operations, 104 were in marketing, sales, service and support, and 46 were in general and administration. With the exception of our field-based sales and service teams, substantially all of our employees are located at our headquarters in Menlo Park, California. None of our employees are represented by labor unions or are covered by a collective bargaining agreement with respect to their employment. We have not experienced any work stoppages, and we consider our relationship with our employees to be good.

Available Information

Our web site is located at www.pacificbiosciences.com. The information posted on our web site is not incorporated into this Annual Report on Form 10-K. Our Annual Report on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K and amendments to reports filed or furnished pursuant to Sections 13(a) and 15(d) of the Securities Exchange Act of 1934, as amended, are available free of charge through the Investors section of our web site as soon as reasonably practicable after we electronically file such material with, or furnish it to, the SEC.

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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 this Annual Report on Form 10-K, 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 are an early stage commercial company.

During 2011 we launched our first commercial product and as such, we have limited historical financial data upon which to base our projected revenue, planned operating expense or upon which to evaluate us and our commercial prospects. Based on our limited experience in developing and marketing new products, we may not be able to effectively:

drive adoption of our products;

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;

focus our research and development efforts in areas that generate returns on these efforts;

comply with evolving regulatory requirements applicable to our products;

anticipate and adapt to changes in our market;

maintain and develop strategic relationships with vendors and manufacturers to acquire necessary materials for the production of our products;

scale our manufacturing activities to meet potential demand at a reasonable cost;

avoid infringement and misappropriation of third-party intellectual property;

obtain licenses on commercially reasonable terms to third-party intellectual property;

obtain valid and enforceable patents that give us a competitive advantage;

protect our proprietary technology;

protect our products from any equipment or software-related system failures; and

attract, retain and motivate qualified personnel.

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. Even if profitability is achieved, we may not be able to sustain profitability. We expect to incur substantial losses and negative cash flow 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.

Although we have now commercialized the PacBio *RS* and started recognizing revenue from our products, we cannot be sure that they will gain acceptance in the marketplace at levels sufficient to support our costs. Our

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success depends, in part, on our ability to expand the market for genetic analysis to include new applications that are not practical with other current technologies. To accomplish this, we must successfully commercialize, and continue development of, our SMRT technology for use in a variety of life science applications. There can be no assurance that we will be successful in securing additional customers for our products, in particular, our first product which is focused on DNA sequencing. Furthermore, we cannot guarantee that the design of our products, including the initial and subsequent specifications and any enhancements or improvements to those specifications, will be satisfactory to potential customers in the markets we seek to reach. These markets are dynamic, and there can be no assurance that they will develop as quickly as we expect or that they will reach their full potential. 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 may fail to achieve or sustain market acceptance of our products by academic and government research laboratories and pharmaceutical, biotechnology and agriculture companies, among others, across the full range of our intended life science applications. If the market for our products grows more slowly than anticipated, if competitors develop better or more cost-effective products or if we are unable to develop a significant customer base, our future sales and revenue would be materially harmed and our business may not succeed. For example, in September 2011, we implemented a reduction in our workforce due in part to our infrastructure being staffed to support a faster adoption rate for our products. If the adoption rate for our products continues to be slow or does not grow, our business may be adversely affected.

Our products are highly complex, with significant support requirements.

In light of the highly complex technology involved in our products, there can be no assurance that we will be able to successfully provide adequate support for our products. Our customers have experienced reliability issues with our PacBio *RS* instruments that we believe are consistent with the introduction of similar new, highly complex products. While we believe that our customers, particularly those who were early adopters of other new DNA sequencing technologies in the past, understand that such issues can be common with novel, highly complex products like the PacBio *RS*, if our products continue to have reliability or other quality issues or require unexpected levels of support, 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 deliver our PacBio *RS* instruments with one year of service included in the purchase price with an option to purchase one or more additional years of service. Since launching our PacBio *RS* instrument during 2011, we have incurred significant service and support costs. If service and support costs increase, our business and operations may be adversely affected.

We may not be able to produce instruments that consistently achieve the specifications and quality that our customers expect.

We have established performance standards for our commercial products that we may not consistently achieve using our current design and manufacturing processes. If we do not consistently achieve the specifications and quality that our customers expect, customer demand may be negatively affected. Customers may refuse to accept our products in a timely manner or at all, which would adversely affect our revenue. Any inability to meet performance standards may materially impact the commercial viability of our products and harm our business.

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

In order to successfully derive revenue from our products, we need to supply our customers with consumable kits to be used with our instruments. We have limited experience manufacturing these consumable kits. For example, the manufacture of our SMRT Cells involves complex manufacturing processes. Since we are in an early phase of producing SMRT Cells, our current manufacturing yields are low and therefore the cost of manufacturing these products is high. Our customers have experienced variability in the performance of our

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SMRT Cells. There is no assurance that we will be able to manufacture our consumable kits or SMRT Cells so that they consistently achieve the product specifications and quality that our customers expect. There is also no assurance that we will be able to increase manufacturing yields and decrease costs. Furthermore, we may not be able to increase manufacturing capacity for our consumable kits or SMRT Cells to meet anticipated demand. An inability to manufacture consumable kits and SMRT Cells that consistently meet specifications, in necessary quantities and at commercially acceptable costs, will have a negative material impact on our business.

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, those customers may seek to cancel their orders with us. In addition, 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.

Rapidly changing technology in life sciences could make the products we are developing obsolete unless we continue to develop and manufacture 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 which have unproven market demand, and new products and services developed by us may not gain market acceptance. Our inability to gain market acceptance of new products could harm our future operating results. Our future success also depends on our ability to manufacture new and improved products to meet customer demand in a timely and cost-effective manner, including our ability to resolve manufacturing issues that may arise as we commence production of these complex products. Unanticipated difficulties or delays in replacing existing products with new products or in manufacturing improved or new products in sufficient quantities to meet customer demand could diminish future demand for our products and harm our future operating results.

We may be unable to develop our future commercial applications.

Our future business depends on our ability to execute on our plans to develop, manufacture and market additional commercial applications of our SMRT technology. Future commercial applications will require significant investments of cash and resources and we may experience unexpected delays or difficulties that could postpone our ability to commercially launch these future applications, which could have a material adverse effect on our business, prospects, operating results and financial condition.

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

We have based our business model on our belief that the market for sequencing products is large and expected to grow significantly. The market is still developing and we cannot quantify the size of the market with certainty. Growth in the market is dependent on increases in the demand for sequencing products from both research institutions and commercial companies. A substantial portion of our potential product sales represent significant capital purchases by customers. Our potential customers include academic and government institutions, genome centers, medical research institutions, pharmaceutical, agricultural, biotechnology and

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chemical companies. Their capital spending budgets can have a significant effect on the demand for our products. These 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, particularly in light of concerns regarding the impending federal government budget sequestration, the spending priorities among various types of research equipment and policies regarding capital expenditures during recessionary periods. Any decrease in capital spending or change in spending priorities of our potential customers could significantly reduce the demand for our products. Moreover, we have no control over the timing and amount of purchases by these potential customers, and as a result, revenue from these sources may vary significantly due to factors that can be difficult to forecast. We may also have to write off excess or obsolete inventory if sales of our products are not consistent with our expectations or the market requirements for our products change due to technical innovations in the marketplace. Any delay or reduction in purchases by potential customers or our inability to forecast fluctuations in demand could harm our future operating results. In addition, if the market for our products is not as large as we expected and if the market does not grow as rapidly as we expected, demand for our products could be adversely affected.

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

We have limited experience in sales and marketing of our products. Our ability to achieve profitability depends on our ability to attract customers for our products. We may be unable to effectively market our products. To perform sales, marketing, distribution and customer support successfully, we will 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 technology;
- 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 initiate and execute successful commercial activities.

We enlist third parties to assist with sales, distribution and customer support globally or in certain regions of the world. There is no guarantee, if we enter into such arrangements, that we will be successful in attracting desirable sales and distribution partners or that we will be able to enter into such arrangements on favorable terms. If our sales and marketing efforts, or those of any 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.

If we are unable to manufacture sufficient quantities of our products with sufficient quality by ourselves or with partners in a timely manner, our ability to sell our products may be harmed.

In order to manufacture our products in volume, we need to maintain sufficient internal manufacturing capacity or contract with manufacturing partners, or both. Our technology and the manufacturing process for our products are highly complex, involving a large number of unique parts, and we may encounter difficulties in manufacturing our products. There is no assurance that we will be able to consistently meet the volume and quality requirements necessary to be successful in the market. Manufacturing and product quality issues may arise as we adjust the scale of our production. If our products do not consistently meet our customers performance expectations, our reputation may be harmed, and we may be unable to generate sufficient revenue to become profitable. Any delay or inability in maintaining or expanding our manufacturing capacity to meet customer demand could diminish our ability to sell our products, which could result in lost revenue and seriously harm our business, financial condition and results of operations.

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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, in which event our business would be materially harmed.

Our products are complex and involve a large number of unique components, many of which require precision manufacturing. The nature of the products requires customized components that are currently available 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. If we were required to purchase these components from an alternative source, 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, we will be unable to manufacture and sell our products in a timely fashion or in sufficient quantities or under acceptable terms. Additionally, for some of those components that are currently purchased from a sole or single source supplier, we have not yet arranged for alternative suppliers.

The operations of our third-party manufacturing partners and suppliers could be disrupted by conditions unrelated to our business or operations, including the bankruptcy of the manufacturer or supplier. Certain of our suppliers and logistics centers are located in regions that have been or may be affected by earthquake and tsunami activity, which could disrupt the flow of components and sub-assemblies. A significant natural disaster, such as an earthquake, a hurricane, volcano, or a flood, could have a material adverse impact on our business, operating results, and financial condition. If our manufacturing partners or suppliers are unable or fail to fulfill their obligations to us, we might not be able to manufacture our products and satisfy customer demand 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 ordering and delivery of our products. We will need to take steps to scale the manufacturing process; including lowering the manufacturing costs of our products as well as improvements to our manufacturing yields and cycle times, manufacturing documentation, and quality assurance and quality control procedures. If we are unable to reduce our manufacturing costs and establish and maintain reliable high volume manufacturing as we scale our operations, our business could be materially harmed.

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, including worker strikes, inclement weather and increased fuel costs. Any failure to deliver products to our customers in a timely and accurate 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 third parties is 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. In addition, some of our consumable products need to be kept at a constant temperature. If our third-party carriers are not able to maintain those temperatures during shipment, our products may be rendered unusable by our customers. The failure to deliver our products in a timely manner may harm our relationship with our customers, increase our costs and otherwise disrupt our operations.

We may encounter difficulties in managing future growth, and these difficulties could impair our profitability.

We expect to experience growth in the future, which may place a strain on our human and capital resources. If we are unable to manage future growth effectively, our business and operating results could suffer. Our ability to manage our operations and costs, including research and development, costs of components, manufacturing, sales and marketing, requires us to continue to enhance our operational, financial and management controls, reporting systems and procedures and to attract and retain sufficient numbers of talented employees. If we are unable to scale up and implement improvements to our manufacturing process, develop reliable third-party manufacturers of sub-assemblies and control systems in an efficient or timely manner, or if we encounter deficiencies in existing systems and controls, we will not be able to make available the products required to meet

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future customer demand for our products. Failure to attract and retain sufficient numbers of talented employees will further strain our human resources and could impede our growth.

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, engineering and other personnel, our ability to 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. These employees could leave our company with little or no prior notice and would be free to work for a competitor. 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 our ability to attract or retain qualified personnel, including scientists, engineers and others, could prevent us from pursuing collaborations and adversely affect our product development and introductions, business growth prospects, results of operations and financial condition.

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

The global economy and credit and capital markets have experienced recent volatility and disruption. Volatility and disruption of financial markets could limit our customers ability to obtain adequate financing or credit to purchase and pay for our products in a timely manner or to maintain operations, which could result in a decrease in sales volume that could harm our results of operations. General concerns about the fundamental soundness of domestic and international economies may also cause our customers to reduce their purchases. Changes in governmental banking, monetary and fiscal policies to address liquidity and increase credit availability may not be effective. We may experience changes in other income as a result of volatility in the global economy, including interest rates and expenses. Significant government investment and allocation of resources to assist the economic recovery of sectors which do not include our customers may reduce the resources available for government grants and related funding for life sciences research and development. Continuation or further deterioration of these financial and macroeconomic conditions could significantly harm our sales, profitability and results of operations.

We have and will raise additional financing to fund our existing operations. Securities we issue to fund our operations will dilute your ownership.

We have and will 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 recent market conditions. We have incurred and may further incur additional debt. The debtholders have rights senior to common stockholders to make claims on our assets and the terms of debt restrict our operations, including our ability to pay dividends on our common stock. Equity securities issued in such financings, have and will dilute stockholders ownership in the Company and new equity securities may have priority rights over current investors. Equity instruments issued in conjunction with recent debt and sales of equity securities pursuant to our at-the-market offering, that commenced during the first quarter of 2013, have resulted in dilution to our stockholders. We will raise additional funds beyond the transactions completed to date, that will result in additional dilution to our stockholders.

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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, as well as many of our potential competitors, have greater name recognition, more substantial intellectual property portfolios, longer operating histories, significantly greater resources to invest in new technologies, more substantial experience in new product development and manufacturing capabilities and 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 or potential customers might accept competitive products and services in lieu of purchasing our technology. Increased competition may result in pricing pressures, which could harm our sales, profitability or market share. Our failure to compete effectively could materially and adversely affect our business, financial condition or results of operations.

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

Our PacBio *RS* has a lengthy sales and purchase order cycle because it is a major capital item and generally requires the approval of our customers senior management. This may contribute to substantial fluctuations in our quarterly operating results, particularly during the periods in which our sales volume is low. 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 operating results have resulted in decreases in our stock price. Such fluctuations also mean that investors may not be able to rely upon our operating results in any particular period as an indication of future performance.

Our products could have unknown defects or errors, which may give rise to claims against us or divert application of our resources from other purposes.

Any product using our SMRT technology will be complex and may develop or contain undetected defects or errors. We cannot provide assurance that material performance problems will not arise. Despite testing, defects or errors may arise in our products, which could result in a failure to achieve increased market acceptance, diversion of development resources, injury to our reputation and increased warranty, service and maintenance costs. We ship our PacBio *RS* instruments with one year of service included in the purchase price with an option to purchase one or more additional years of service. We provide a twelve-month warranty period for the PacBio *RS*. The warranty is limited to replacing, repairing or giving credit for, at our option, any instrument for which a warranty claim is provided to us within the warranty period. We also provide a warranty for our consumables, but claims must be made within 30 days from the shelf life date or use by date. The warranty is limited to replacing, or at our option, giving credit for, any consumable with defects in material or workmanship. Defects or errors in our products might also discourage customers from purchasing our products. The costs incurred in correcting any defects or errors may be substantial and could adversely affect our operating margins. In addition, such defects or errors could lead to the filing of product liability claims against us, 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 assets 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.

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

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tools that will be useful with our products or be viewed as useful by our customers or potential customers. A lack of additional available complementary sample preparation and informatics tools may impede the adoption of our products and may adversely impact our business.

Ethical, legal and social concerns 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 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.

Our products could in the future be subject to regulation by the U.S. Food and Drug Administration or other domestic and international regulatory agencies, which could increase our costs and 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, or 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 could be subject to FDA regulation, or the FDA s regulatory jurisdiction could 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 can market and sell our products. Such regulation and restrictions may materially and adversely affect our business, financial condition and results of operations.

Many countries have laws and regulations that could affect our products. 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 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.

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

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on an ongoing basis, or more stringent enforcement of existing laws and regulations. Although we cannot predict the ultimate impact of any such new laws and regulations, or such more stringent enforcement, they will likely 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 known 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 known 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.

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

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 adversely affected. International sales entail a variety of risks, including longer payment cycles and difficulties in collecting accounts receivable outside of the United States, currency exchange fluctuations, challenges in staffing and managing foreign operations, tariffs and other trade barriers, unexpected changes in legislative or regulatory requirements of foreign countries into which we sell our products, difficulties in obtaining export licenses or in overcoming other trade barriers and restrictions resulting in delivery delays and significant taxes or other burdens of complying with a variety of foreign laws. In conducting our international operations, we will be subject to U.S. laws relating to our international activities, as well as foreign laws relating to our activities in other countries. Failure to comply with these laws may subject us to financial and other penalties in the U.S. and foreign countries that could impact our operations or financial condition.

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 customers local currency could make our products more expensive, impacting our ability to compete. Our costs of materials from international suppliers may increase if in order to continue doing business with us they raise their prices 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. The recent global financial downturn has led to a high level of volatility in foreign currency exchange rates and that level of volatility may continue, which could adversely affect our business, financial condition or results of operations.

We are subject to existing and potential additional governmental regulation 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 existing and potential future 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. The failure to satisfy export control criteria or to obtain necessary clearances could delay or prevent shipment of products, which could adversely affect our revenue and profitability. Moreover, the life sciences industry, which is expected to be one of the primary markets for our

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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 regulation that adversely affects 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. See also our risk factor above titled Ethical, legal and social concerns surrounding the use of genetic information could reduce demand for our technology. 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. See also our risk factors above titled Our products could in the future be subject to regulation by the U.S. Food and Drug Administration or other domestic and international regulatory agencies, which could increase our cost and delay our commercialization efforts, thereby materially and adversely affecting our business and results of operations and 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. Failure to comply with these 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 could increase the cost of operating our business.

If we fail to maintain proper and effective internal control, 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 re-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 U.S. generally accepted accounting principles. 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 were required to perform an evaluation of our internal control over financial reporting. While we performed this evaluation and concluded that our internal control over financial reporting was operating effectively as of December 31, 2011 and December 31, 2012, 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, or 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, including pursuant to any sales of equity securities we may make under our Form S-3 Registration Statement, 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.

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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 competitors 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;
- our patents or the patents of our licensors may not be of sufficient scope 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, 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 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 among countries. 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 patents that may be granted to us, 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.

We license from third parties some of the intellectual property that is important to our business, including patent licenses from Cornell Research Foundation, Indiana University Research and Technology Corporation, Stanford University and GE Healthcare Bio-Sciences Corp. 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

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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, consultants and certain academic collaborators to enter into confidentiality and assignment of inventions agreements, and by requiring our third-party manufacturing partners to enter into confidentiality agreements. There can be no assurance, however, that such 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, 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 can be costly and distract management s attention and resources. For example, we incurred significant legal expenses in the first half of 2012 to litigate and settle a complaint filed by Life Technologies Corporation seeking review of a patent interference decision of the U.S. Patent and Trademark Office (see Part II, Item 8. Financial Statements Note 7. *Litigation Settlements*). Additionally, as a result of these challenges, our patents or pending patent applications may be determined to be unpatentable to us, invalid or unenforceable, in whole or in part. Accordingly, adverse rulings from the relevant patent offices in these proceedings may negatively impact the scope of our intellectual property protection for our products and technology and may adversely affect our business.

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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 action is necessary because we fail to achieve practical application of the U.S. government-funded technology, because action is necessary to alleviate health or safety needs, to meet requirements of federal regulations, or to give preference to U.S. industry. In addition, U.S. government-funded inventions must be reported to the government and U.S. government funding must be disclosed in any resulting patent applications. In addition, our rights in such inventions are subject to government license rights and foreign manufacturing restrictions.

We may become 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. Legal actions to enforce these patent rights can be expensive and may involve the diversion of significant management time and resources. 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 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 belonging 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 may claim that we infringe their patent rights and may file lawsuits or engage in other proceedings against us to enforce their patent rights. For example, we incurred significant legal expenses in the first half of 2012 to litigate and settle a complaint filed by Helicos Biosciences Corporation alleging that our products infringe patents owned and in-licensed by Helicos (see Part II, Item 8. Financial Statements Note 7. *Litigation Settlements*). 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. In fact, several companies in our industry, such as Life Technologies Corporation, Illumina, Inc. and Complete Genomics, Inc., are involved in patent litigation with each other. Additionally, we have certain obligations to many of our customers 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 could incur substantial costs, and the attention of our management and technical personnel could be diverted. Even if we have an agreement to indemnify 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 that we 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.

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Others could bring claims against us asserting that we improperly used their confidential or proprietary information, or 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 our having to pay substantial damage awards or be prevented from selling some or all of our products, which could 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.

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 and otherwise adversely affect our business.

Risks Relating to Owning Our Common Stock

Our share price is volatile, and you may be unable to sell your shares at or above the price you paid to acquire it.

The market price of our common stock is subject to wide fluctuations in response to many risk factors listed in this section, and others beyond our control, including:

- actual or anticipated fluctuations in our bookings, financial condition and operating results;
- announcements of technological innovations by us or our competitors;
- 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 or capital commitments;

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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 and 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;

share price and volume fluctuations attributable to inconsistent trading volume levels of our shares; and

general economic and market conditions.

Furthermore, in the past and recently, stock markets 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 are currently a party to this type of litigation (see Part I, Item 3 Legal Proceedings) and may be the target of this type of litigation 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.

If securities or industry analysts publish negative reports about our business, our share price and trading volume could decline.

The trading market for our common stock will be influenced by the research and reports that securities or industry analysts publish about us or our business. If one or more of the analysts who cover us downgrade our shares or change their opinion of our shares, our share price would likely decline. If one or more of these analysts cease coverage of our company or fail to regularly publish reports on us, we could lose visibility in the financial markets, which could cause our share price or trading volume to decline.

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

In April 2012, we filed a shelf registration statement on Form S-3 with the SEC pursuant to which we may, from time to time, sell up to an aggregate of $150 million of our common stock, warrants or debt securities. On May 1, 2012, the registration statement was declared effective by the SEC, which will allow us to access the capital markets for the three year period following this effective date. On October 5, 2012, we entered into a Controlled Equity Offering Sales Agreement (the Sales Agreement with Cantor Fitzgerald & Co. (Cantor) pursuant to which we may offer and sell, from time to time, through Cantor shares of our common stock having an aggregate offering price of up to $30.0 million through an at-the-market offering. We are not obligated to make or continue to make any sales of shares of our common stock under the Sales Agreement. The sale of securities under the Form S-3 registration statement, including pursuant to the Sales Agreement, will result in dilution of our stockholders and could cause our share price to fall. In addition, the holders of a significant number of shares of our common stock are entitled to rights with respect to registration of such shares under the Securities Act pursuant to an investor rights agreement between such holders and us. If such holders, by exercising their registration rights, sell a large number of shares, they could adversely affect the market price

for our common stock. If we file a registration statement for the purpose of selling additional shares to raise capital and are required to include shares held by these holders pursuant to the exercise of their registration rights, our

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ability to raise capital may be impaired. Such holders have waived their registration rights with respect to the sale of shares of our common stock pursuant to the Sales Agreement through December 2013. We have also filed a registration statement on Form S-8 under the Securities Act to register shares for issuance under our 2004 Equity Incentive Plan, 2005 Stock Plan, 2010 Equity Incentive Plan, 2010 Employee Stock Purchase Plan and 2010 Outside Director Equity Incentive Plan. Each of our 2010 Equity Incentive Plan, 2010 Employee Stock Purchase Plan and 2010 Outside Director Equity Incentive Plan provides for automatic increases in the shares reserved for issuance under the plan which could result in additional dilution to our stockholders. Additionally, on February 5, 2013 we entered into a facility agreement with entities affiliated with Deerfield Management Company, L.P. (collectively Deerfield). In conjunction with the agreement, we issued to Deerfield warrants to purchase 5,500,000 shares of our common stock which could result in additional dilution to our stockholders. Refer to Part II, Item 7. Financing Activities for additional details regarding these financing transactions.

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,

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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 your 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 cash dividends on our common stock and do not intend to pay any cash dividends in the foreseeable future. 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 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 1B. UNRESOLVED STAFF COMMENTS

None.

ITEM 2. PROPERTIES

As of December 31, 2012, we leased approximately 189,000 square feet in Menlo Park, California, where we house our headquarters, research and development, service and support functions, and our in-house manufacturing operations. Our leases run through 2015 with various options for renewal. We also lease a sales office facility in Singapore and an engineering support facility in San Francisco. We believe that our existing facilities are in good operating condition and suitable for the conduct of our business.

ITEM 3. LEGAL PROCEEDINGS

From time to time, we may be involved in a variety of claims, lawsuits, investigations and proceedings relating to securities laws, product liability, patent infringement, contract disputes and other matters relating to various claims that arise in the normal course of our business. Certain of these lawsuits are described in further detail below. We do not know whether we will prevail in these matters nor can we assure that any remedy could be reached on commercially reasonable terms, if at all. Regardless of the outcome, litigation can have an adverse impact on us because of defense and settlement costs, diversion of management resources and other factors. Based on currently available information, we believe that we have meritorious defenses to these actions and that the resolution of these cases is not likely to have a material adverse effect on our business, financial position or future results of operations.

Three putative class action lawsuits were filed against us and certain of our officers and directors in the Superior Court of the State of California, County of San Mateo. These actions were brought on behalf of all persons or entities who purchased or otherwise acquired our common stock pursuant or traceable to our initial public offering (IPO) of common stock in October 2010. The claims were initiated between October 2011 and April 2012 and have since been consolidated as *In re Pacific Biosciences of California Inc. S holder Litig.*, Case No. CIV509210 (the State Court Action). The plaintiffs in the State Court Action allege violations of several provisions of the federal securities laws in connection with our August 16, 2010, registration statement (effective, as amended, on October 26, 2010) and seek, among other things, compensatory damages, rescission, and attorneys fees and costs on behalf of the putative class. The defendants in the State Court Action filed a motion to stay that lawsuit in deference to the *Primo* action pending in federal district court. On May 25, 2012, the Superior Court denied the defendants motion to stay. The defendants in the State Court Action also filed a demurrer to certain of the plaintiffs claims, which was sustained in part and overruled in part on October 16, 2012. On October 26, 2012, the plaintiffs in the State Court Action filed a First Amended Consolidated Class Action Complaint, which the defendants answered on November 13, 2012.

On or around December 12, 2012, the parties to the State Court Action reached an agreement on certain terms of a tentative settlement on behalf of the entire class of persons or entities that purchased our common stock between October 27, 2010, and September 20, 2011 (inclusive). On January 18, 2013, the parties in the State Court Action entered into a memorandum of understanding regarding the tentative settlement, which will not become effective until final approval is granted by the Superior Court. As of December 31, 2012, we have accrued for our best estimate to resolve this matter.

On December 21, 2011, we and certain of our officers and directors were named in a putative class action lawsuit filed in United States District Court for the Northern District of California (*Primo v. Pacific Biosciences of California, Inc., et al.*, Case No. 4:11-CV-06599). On April 11, 2012, an amended complaint was filed in the *Primo* action, which added another plaintiff, Evan Powell. As amended, the complaint alleges violations of several provisions of the federal securities laws arising out of alleged misstatements or omissions in our August 16, 2010 registration statement (effective, as amended, on October 26, 2010), and by us and/or our employees during the class period. The complaint seeks, among other things, compensatory damages, rescission,

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and attorneys fees and costs on behalf of the putative class. On April 6, 2012, Mr. Primo was appointed lead plaintiff in the action. On July 31, 2012, the defendants moved to dismiss the *Primo* action in its entirety. A hearing on the defendants motion to dismiss was held on October 11, 2012. A decision on the motion to dismiss has not yet been issued.

On December 29, 2011, we were named as a nominal defendant, along with certain of our directors as individual defendants, in a purported shareholder derivative lawsuit filed in United States District Court for the Northern District of California (*Burlingame v. Martin et al.,* Case No. 4:11-CV-06703). The complaint alleges that the director defendants breached various fiduciary duties owed to us, engaged in waste of corporate assets, and were, as a result, unjustly enriched. The complaint seeks, among other things, restitution of director profits allegedly obtained as a result of the aforesaid conduct, improvement of our corporate governance procedures, and attorneys fees and costs. On February 28, 2012, the *Burlingame* action was related to the *Primo* action and transferred to the same judge hearing the *Primo* action. The parties in the *Burlingame* action have stipulated that no response to the complaint will be due until resolution of the motion to dismiss the *Primo* action.

Pursuant to Delaware law, we may have obligations, under certain circumstances, to hold harmless and indemnify each of our directors and certain officers, including those named in the actions, against judgments, fines, settlements and expenses related to claims arising against such directors and officers to the fullest extent permitted under Delaware law, our bylaws and certificate of incorporation. 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. Such obligations for indemnification may apply to these lawsuits. In addition, we may have obligations to hold harmless and indemnify each of the underwriters from our initial public offering and their respective affiliates, directors and officers against any and all losses, claims, damages and liabilities related to claims arising against such parties pursuant to the terms of the underwriting agreement between the underwriters and the Company. We believe that the allegations in each of these pending actions are without merit and intend to vigorously contest the actions. However, there can be no assurance that we will be successful in our defense.

In addition, from time to time, we are a party to litigation and subject to claims incident to the ordinary course of business.

We cannot determine the ultimate outcome of these lawsuits. Except as noted above regarding the tentative settlement of the State Court Action, we cannot provide an estimate of the possible loss or possible range of loss associated with the resolution of these contingencies with certainty or confidence; therefore, except as noted above, we have not provided an estimate and we have not recorded a liability.

ITEM 4. MINE SAFETY DISCLOSURES

Not applicable.

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PART II

ITEM 5. MARKET FOR REGISTRANT S COMMON EQUITY, RELATED STOCKHOLDER MATTERS AND ISSUER PURCHASES OF EQUITY SECURITIES

Our common stock is being traded in The Nasdaq Global Select Market under the symbol PACB. The following table sets forth the high and low closing sales prices per share for our common stock for the indicated fiscal periods:

	2012		2011	
	High	Low	High	Low
4th Quarter	$ 1.85	$ 1.10	$ 4.07	$ 2.28
3rd Quarter	2.32	1.70	12.24	3.21
2nd Quarter	3.63	1.82	13.53	10.44
1st Quarter	5.04	2.94	16.30	12.94

Holders of Record

As of March 7, 2013, there were approximately 62 stockholders of record of our common stock, although we believe that there are a significantly larger number of beneficial owners of our common stock.

Dividend Policy

We have never declared or paid any cash dividend on our common stock and have no present plans to do so. We intend to retain earnings for use in the operation and expansion of our business. In addition, our ability to pay dividends is limited pursuant to covenants in our debt agreements.

Securities Authorized for Issuance Under Equity Compensation Plans

The following table contains information as of December 31, 2012 for our equity compensation plans.

Plan category	Number of securities to be issued upon exercise of outstanding options, warrants and rights (a)	Weighted-average exercise price of outstanding options, warrants and rights	Number of securities remaining available for future issuance under equity compensation plans (excluding securities reflected in column (a))
Equity compensation plans approved by security holders	12,015,743	$ 5.37	3,338,954
Equity compensation plans not approved by security holders			

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Performance Graph

The performance graph included in this Form 10-K shall not be deemed filed for purposes of Section 18 of the Securities Exchange Act of 1934, as amended (the Exchange Act), or incorporated by reference into any filing of Pacific Biosciences under the Securities Act of 1933, as amended, or the Exchange Act, except as shall be expressly set forth by specific reference in such filing.

The following graph shows a comparison from October 27, 2010 (the date our common stock commenced trading on the Nasdaq Global Select Market) through December 31, 2012 of the cumulative total return for our common stock, the Nasdaq Composite Index and the Nasdaq Biotechnology Index. Such returns are based on historical results and are not intended to suggest future performance. Data for The Nasdaq Composite Index and the Nasdaq Biotechnology Index assume reinvestment of dividends.

	October 27, 2010	December 31, 2010	December 31, 2011	December 31, 2012
Pacific Biosciences of California Inc.	$ 100.00	$ 96.78	$ 17.03	$ 10.34
NASDAQ Composite Index	100.00	102.84	104.22	117.07
NASDAQ Biotechnology Index	100.00	102.03	115.67	146.32

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Recent Sales of Unregistered Securities

None.

Use of Proceeds

On October 5, 2012, we entered into a Controlled Equity Offering Sales Agreement (Sales Agreement) with Cantor Fitzgerald & Co. (Cantor) pursuant to which we may offer and sell, from time to time, through Cantor shares of our common stock having an aggregate offering price of up to $30.0 million through an at-the-market offering. We will pay Cantor a commission equal to 3% of the gross proceeds from the sale of shares of our common stock under the Sales Agreement and reimburse up to $50,000 of legal expenses incurred by Cantor. We intend to use the net proceeds from this offering for general corporate purposes, including capital expenditures and working capital. We may also use a portion of the net proceeds from this offering to acquire or invest in complementary businesses, technologies, product candidates or other intellectual property. We are not obligated to make any sales of shares of our common stock under the Sales Agreement. As of December 31, 2012, no shares of our common stock were sold under this Sales Agreement.

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ITEM 6. SELECTED FINANCIAL DATA

Our historical results are not necessarily indicative of the results to be expected for any future period. The following selected financial data should be read in conjunction with Management s Discussion and Analysis of Financial Condition and Results of Operations and our consolidated financial statements and related notes included elsewhere in this Form 10-K.

	Years Ended December 31,				
	2012	2011	2010	2009	2008
	(in thousands, except per share amounts)				
Total revenue (1)	$ 25,983	$ 33,863	$ 1,674	$ 135	$ 901
Total cost of revenue (1)	25,043	20,829			
Gross profit (1)	940	13,034	1,674	135	901
Total operating expense	95,278	122,790	141,908	88,205	45,710
Operating loss	(94,338)	(109,756)	(140,234)	(88,070)	(44,809)
Other income (expense), net	(127)	368	68	367	1,055
Net loss	$ (94,465)	$ (109,388)	$ (140,166)	$ (87,703)	$ (43,754)
Basic and diluted net loss per share	$ (1.69)	$ (2.03)	$ (14.10)	$ (173.03)	$ (133.82)
Weighted average shares outstanding used to calculate basic and diluted net loss per share (2)	55,733	53,874	9,938	507	327

	As of December 31,				
	2012	2011	2010	2009	2008
	(in thousands)				
Cash, cash equivalents and investments	$ 100,580	$ 177,434	$ 283,674	$ 92,735	$ 106,051
Working capital	100,257	180,225	272,274	85,326	102,224
Total assets	129,683	218,316	305,747	101,098	113,107
Convertible preferred stock warrant liability				226	142
Convertible preferred stock (3)				269,101	201,085
Total stockholders equity (deficit) (4)	109,382	191,463	279,866	(177,123)	(93,389)

(1) We began recording product and service revenue and the related cost of revenue in 2011 from sales of our PacBio *RS* instruments and consumables. Prior to 2011, our revenue and gross profit consisted solely of grant revenue. Prior to 2012, cost of revenue and gross profit do not reflect certain costs, as instrument components acquired prior to September 30, 2010 were expensed as period costs.

(2) For further information, see Note 11. Net Loss Per Share in the Notes to Consolidated Financial Statements of this Form 10-K for an explanation of the method used to calculate basic and diluted net loss per share of common stock and the weighted-average number of shares used in computation of the per share amounts.

(3) In connection with our IPO declared effective October 26, 2010, all outstanding convertible preferred stock converted into common stock.

(4) On February 5, 2013 we entered into a facility agreement with Deerfield. In conjunction with the agreement, we issued to Deerfield promissory notes in the aggregate principal amount of $20.5 million and warrants to purchase 5,500,000 shares of our common stock. On October 5, 2012, we entered into an agreement Cantor pursuant to which we may offer and sell, from time to time, through Cantor shares of our common stock having an aggregate offering price of up to $30.0 million through an at-the-market offering. Refer to Part II, Item 7. Financing Activities for additional details regarding these financing transactions.

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ITEM 7. 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 consolidated financial statements and the related notes included in this Form 10-K. Some of the information contained in this discussion and analysis or set forth elsewhere in this Form 10-K, including information with respect to our plans and strategy for our business and related financing, includes forward-looking statements that involve risks and uncertainties. You should read the Risk Factors section of this Form 10-K 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.

Overview

We develop, manufacture and market an integrated platform for high resolution genetic analysis. Combining advances in nanofabrication, biochemistry, molecular biology, surface chemistry and optics, we created a technology platform called single molecule, real-time, or SMRT, technology. Our initial focus is to offer our SMRT technology to the DNA sequencing market where we have developed and commercialized our first product, the PacBio *RS*, a third generation sequencing platform. The PacBio *RS* leverages our proprietary consumables, including SMRT Cells and reagent kits, to provide a complete solution to the customer.

From our incorporation in 2000 through the first quarter of 2011 we primarily focused on developing our technology, undertaking engineering activities to develop our products, conducting initial marketing of our products, and pre-production activities associated with the commercial launch of the PacBio *RS* during April 2011. We have financed our operations primarily through the issuance of common stock and convertible preferred stock resulting in $587.1 million in net proceeds. Since our inception, we have incurred significant net losses and we expect to continue to experience significant losses as we invest in developing and taking advantage of market opportunities for our products, servicing and supporting initial customers, development of enhancements and updates to existing products, development of future products, and sales and administrative infrastructure. As of December 31, 2012, we had an accumulated deficit of $536.0 million. We incurred net losses of $94.5 million, $109.4 million and $140.2 million in 2012, 2011 and 2010, respectively.

2012 Business Events and Trends

Economic Environment. During most of 2012, the reduction and anticipated reduction in U.S. government funding for research through the National Institute of Health, or NIH, curtailed demand for sequencing products in the U.S. In addition, government funding for research in Europe declined significantly. This contributed to an overall decline in sales of capital equipment such as our PacBio *RS* system. During 2012, we recorded bookings for 12 new PacBio *RS* systems compared to bookings for 26 new PacBio *RS* systems in 2011.

Backlog Reduction. Before we launched our initial products during the second quarter of 2011, we took orders starting in early 2010, and had built a backlog of instrument orders totaling 44 units. During the second quarter of 2011 through the second quarter of 2012, we installed 66 units while booking 23 new units, which brought our backlog down to one unit by the end of the second quarter of 2012. Revenue recorded for the third quarter of 2012 was $2.8 million and included no instrument revenue, compared with an average revenue of $10 million in the prior five quarters which included revenues from the 66 installed instruments. Starting from the fourth quarter of 2012 and going forward, we expect quarterly revenues to reflect the installation of instruments booked from recent quarters. We generally expect installation of new units to occur one to two quarters after they are booked.

Cash Use. For the year ended December 31, 2012, our balance of cash and investments declined $76.8 million. We plan on reducing our rate of cash usage further by growing revenues and controlling expenses. With $100.6 million in cash and investments at December 31, 2012, we have cash to fund our operations beyond 2013.

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However, we have additionally entered into various financing arrangements and plan to raise additional funds during 2013 as discussed in Liquidity and Capital Resources below.

Product Enhancements. During 2012, we introduced a number of product enhancements that improved the performance and reliability of our products. In the first quarter of 2012, we launched our C2 product release, which doubled readlengths to approximately 3,000 bases on average, with 5 percent of those reads above 8,000 bases, increased throughput, defined as mappable data per SMRT cell, reduced input sample requirements, and significantly improved system reliability. During the second quarter, we launched new software which provided customers with the ability to detect base modifications using the kinetic information captured by the PacBio *RS* system. During the third quarter, we introduced the Automated MagBead Station, which simplifies sample preparation, and enables customers to generate more consistent, high-quality data from lower quality starting samples. The MagBead Station can also further reduce the amount of input sample required. Since the beginning of the year, we have introduced product and method improvements that have cut the sample input required to sequence with the PacBio *RS* system by approximately 90%. During the fourth quarter, we introduced a follow-on software release that included automated tools for detecting and characterizing methylated bases in bacteria, which enables the study of bacterial methylomes on a large scale. We also introduced our XL chemistry and software release in the fourth quarter, which further increased the readlength and throughput capabilities of our system. With this most recent chemistry and software, our customers can now generate readlengths of 4,500 bases on average, with 5 percent of those reads above 12,000 bases. Finally, during the fourth quarter, we made available an early version of new secondary analysis software on our DevNet site, which enables customers to assemble genomes with 99.999% accuracy at 20x coverage using only standard, PacBio long reads.

While such trends are important to understanding and evaluating our financial results, the other transactions, events and trends discussed in Risk Factors in Item 1A of this report may also materially impact our business operations and financial results.

Critical Accounting Policies and Estimates

Management s Discussion and Analysis of Financial Condition and Results of Operations is based upon our Consolidated Financial Statements, which we have prepared in accordance with U.S. generally accepted accounting principles (GAAP). The preparation of these financial statements requires management to make estimates and assumptions that affect the reported amounts of assets, liabilities, revenue, cost of revenue, and operating expenses, and related disclosure of contingent assets and liabilities. Management bases its estimates on historical experience and on various other assumptions that it believes 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.

An accounting policy is deemed to be critical if it requires an accounting estimate to be made based on assumptions about matters that are highly uncertain at the time the estimate is made, if different estimates reasonably could have been used, or if changes in the estimate that are reasonably likely to occur could materially impact the financial statements.

Revenue Recognition

Our revenue is generated primarily from the sale of products and services. Product revenue consists of sales of our PacBio *RS* instrument and related consumables, and service and other revenue primarily consists of revenue earned from product maintenance agreements. Grant revenue reflects revenue from government grants that generally provide cost reimbursement for certain types of expenditures in return for research and development activities over a contractually defined period. Revenue from grants is recognized in the period during which the related costs are incurred, provided that the conditions under which the grants were provided have been met.

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We recognize product and service revenue when persuasive evidence of an arrangement exists, delivery has occurred or services have been rendered, the price is fixed or determinable, and collectability is reasonably assured. In instances where final acceptance of the product or system is required, revenue is deferred until all acceptance criteria have been met. Revenue for product sales is generally recognized upon customer acceptance. Revenue for product maintenance agreements is recognized when earned, which is generally ratably over the service period.

In order to assess whether the price is fixed or determinable, we evaluate whether refund rights exist. If refund rights exist or payment terms are based on future performance, we defer revenue recognition until the price becomes fixed or determinable. We assess collectability based on a number of factors, including customer creditworthiness. If we determine that collection of amounts due is not reasonably assured, revenue recognition is deferred until receipt of payment.

We regularly enter into contracts from which revenue is derived from multiple deliverables including a mix of products and or services. Revenue recognition for contracts with multiple deliverables is based on the individual units of accounting determined to exist in the contract. A delivered item is considered a separate unit of accounting when 1) the delivered item has value to the customer on a stand-alone basis; and 2) when a general right of return exists, the delivery or performance of an undelivered item is considered probable and under our control. Items are considered to have stand-alone value when they are sold separately by any vendor or when the customer could resell the item on a stand-alone basis. Our revenue arrangements generally do not have a general right of return. When a deliverable does not meet the criteria to be considered a separate unit of accounting, we group it with other deliverables that, when combined, meet the criteria, and the appropriate allocation of arrangement consideration and revenue recognition is determined. Consideration is allocated at the inception of the contract to all deliverables based on their relative selling price. In order to determine the relative selling price of a deliverable, we apply, in order, the following hierarchy: 1) vendor-specific objective evidence (VSOE); 2) third-party evidence if VSOE is not available; and 3) our best estimate of selling price for the deliverable if neither VSOE nor third-party evidence is available.

In order to establish VSOE, we must regularly sell the product or service on a standalone basis with a substantial majority of sales priced within a relatively narrow range. If an insufficient number of standalone sales exist and VSOE cannot be determined, we then consider whether third party evidence can be used to establish selling price. Due to the lack of similar products and services sold by other companies within our industry, we have not established selling price using third-party evidence. If neither VSOE nor third party evidence of selling price exists, we determine our best estimate of selling price using a combination of prices set by our pricing committee adjusted for applicable discounts and customer orders received to date.

Deferred revenue primarily represents product maintenance agreement revenue that is expected to be recognized over the related service period, generally one to three years.

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.

Manufacturing overhead, comprised mainly of labor costs, is determined and capitalized into inventory based on management s estimate of normal manufacturing capacity. Normal capacity is the production level expected to be achieved over a number of periods under normal circumstances with available resources. Our current manufacturing volumes are below expected normal capacities, therefore manufacturing overhead incurred during the period exceeds the amounts absorbed into inventory and included in cost of revenue. As excess manufacturing resources are engaged in next generation product research and development, production of product used internally for R&D, and other R&D support activities, manufacturing costs in excess of amounts reflected in inventory and cost of revenue are expensed as a component of research and development expense during the period in which the expenses are incurred.

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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 and support infrastructure necessary to support the installed customer base. As we remain in the early stages of the commercial launch of our products, the capacity of our existing service infrastructure exceeds the number of installed customer instruments. Therefore, management has estimated the capacity of the existing service infrastructure and recognizes service related cost of revenue based on the installed base. As a result, total service infrastructure costs exceed the costs associated with the support of customer instruments and such excess costs are included as a component of sales, general and administrative expense.

Stock-Based Compensation

Stock-based compensation expense for all stock-based compensation awards is based on the grant date fair value estimated using the Black-Scholes option pricing model. We have limited historical information available to support the underlying estimates of certain assumptions required to value stock options. The expected term of options is estimated based on the simplified method. We do not have sufficient trading history to solely rely on the volatility of our own common stock for establishing expected volatility. Therefore, we based our expected volatility on the historical stock volatilities of our common stock as well as several comparable publicly listed companies over a period equal to the expected term of the options. The risk-free interest rate is based on the U.S. Treasury yield curve in effect at the time of grant for the expected term of the stock option. We estimate our forfeiture rate based on an analysis of our actual forfeitures and will continue to evaluate the adequacy of the forfeiture rate based on actual forfeiture experience, analysis of employee turnover behavior and other factors. The impact from a forfeiture rate adjustment will be recognized in full in the period of adjustment, and if the actual number of future forfeitures differs from that estimated, we may be required to record adjustments to stock-based compensation expense in future periods. We recognize compensation expense on a straight-line basis over the requisite service period. We have elected to use the simplified method to calculate the beginning pool of excess tax benefits.

The assumptions used in calculating the fair value of share-based payment awards represent management s best estimates, but these estimates involve inherent uncertainties and the application of management judgment. As a result, if factors change and we use different assumptions, our stock-based compensation expense could be materially different in the future. In addition, if our actual forfeiture rate is materially different from our estimate, the stock-based compensation expense could be significantly different from what we have recorded in the current period. As of December 31, 2012, $19.4 million of total unrecognized compensation expense related to stock options was expected to be recognized over a weighted-average period of 2.9 years. See Note 10 of the Notes to our Consolidated Financial Statements for a further discussion on stock-based compensation.

Impairment of Long-lived Assets

We assess impairment of long-lived assets, which include property and equipment, on at least an annual basis and when events or changes in circumstances indicate that their carrying amount may not be recoverable. Circumstances which could trigger a review include, but are not limited to, significant decreases in the market price of the asset, significant adverse changes in the business climate or legal factors, accumulation of costs significantly in excess of the amount originally expected for the acquisition or construction of the asset, current period cash flow or operating losses combined with a history of losses or a forecast of continuing losses associated with the use of the asset, or expectations that the asset will more likely than not be sold or disposed of significantly before the end of its estimated useful life. To date we have not recorded any impairment charges.

Inventories

Inventory is valued at the lower of the standard cost, which approximates actual cost, or market. Cost is determined using the FIFO (first-in, first-out) method. Adjustments to reduce the cost of inventory to its net realizable value, if required, are made for estimated excess or obsolete balances.

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We enter into inventory purchases and commitments so that we can meet future shipment schedules based on forecasted demand for our products. The business environment in which we operate is subject to rapid changes in technology and customer demand. We perform a detailed assessment of inventory each period, which includes a review of, among other factors, demand requirements, product life cycle and development plans, component cost trends, product pricing, product expiration and quality issues. Based on this analysis, we record adjustments to inventory for potentially excess, obsolete or impaired goods, when appropriate, in order to report inventory at net realizable value. These inventory adjustments may be required if actual demand, component costs, supplier arrangements, or product life cycles differ from our estimates. Any such adjustments would result in a charge to our results of operations.

Leases

We categorize leases at their inception as either operating or capital leases. On certain of our lease agreements, we received tenant improvement allowances, rent holidays and other incentives. Rent expense is recorded on a straight-line basis over the term of the lease. The difference between rent expense accrued and amounts paid under the lease agreement is recorded as lease incentives in the accompanying balance sheets. Leasehold improvements are capitalized at cost and depreciated over the lesser of their expected useful life or the life of the lease. To the extent leasehold improvement allowances are afforded to us by the landlord, we record the tenant improvements as leasehold improvement assets with a corresponding lease incentive liability. We establish assets and liabilities for the construction costs incurred under build-to-suit lease arrangements to the extent we are involved in the construction of structural improvements or take some level of financial or construction risk prior to commencement of a lease. For further information, see Note 5. Facility Financing and Debt Obligations in the Notes to Consolidated Financial Statements of this Form 10-K.

For build-to-suit lease arrangements, we evaluate the extent of our financial and operational involvement in the tenant improvements to determine whether we are considered the owner of the construction project under GAAP. When we are considered the owner of a project, we record the shell of the facility at its fair value at the date construction commences with a corresponding facility financing obligation. Improvements to the facility during the construction project are capitalized and, to the extent funded by lessor afforded incentives, with corresponding increases to the facility financing obligation. Payments we make under leases in which we are considered the owner of the facility are allocated to land rental expense, based on the relative values of the land and building at the commencement of construction, reductions of the facility financing obligation and interest expense recognized on the outstanding obligation. To the extent gross future payments do not equal the recorded liability, the liability is settled upon return of the facility to the lessor. Any difference between the book value of the assets and remaining facility obligation are recorded in other income (expense), net. For existing arrangements, the differences are expected to be immaterial.

Income Taxes

We are subject to income taxes in the U.S. and certain states in which we operate, and we use estimates in determining our provisions for income taxes. Significant management judgment is required in determining our provision for income taxes, deferred tax assets and liabilities and any valuation allowance recorded against net deferred tax assets in accordance with U.S. GAAP. These estimates and judgments occur in the calculation of tax credits, benefits, and deductions, and in the calculation of certain tax assets and liabilities, which arise from differences in the timing of recognition of revenue and expense for tax and financial statement purposes, as well as the interest and penalties related to uncertain tax positions. Significant changes to these estimates may result in an increase or decrease to our tax provision in the current or subsequent period.

We recognize a valuation allowance against our net deferred tax assets if it is more likely than not that some portion of the deferred tax assets will not be fully realizable. This assessment requires judgment as to the likelihood and amounts of future taxable income by tax jurisdiction. At December 31, 2012, we maintained a full valuation allowance against all of our deferred tax assets which totaled $214.3 million, including net operating loss carryforwards and research and development tax credits of $186.9 million and $18.9 million, respectively.

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As of December 31, 2012, we had federal and state net operating loss carryforwards of approximately $476.4 million and $434.9 million, respectively, available to reduce future taxable income, if any. The federal net operating loss carryforward begins expiring in 2024, and the state net operating loss carryforward begins expiring in 2014.

We also had federal and California state research and development credit carryforwards of approximately $15.3 million and $18.0 million, respectively, as of December 31, 2012. The federal research and development credits begin expiring in 2024 if not utilized. The California tax research and development credits can be carried forward indefinitely.

We assess all material positions taken in any income tax return, including all significant uncertain positions, in all tax years that are still subject to assessment or challenge by relevant taxing authorities. Assessing an uncertain tax position begins with the initial determination of the position s sustainability and is measured at the largest amount of benefit that is greater than 50% likely of being realized upon ultimate settlement. As of each balance sheet date, unresolved uncertain tax positions must be reassessed, and we will determine whether the factors underlying the sustainability assertion have changed and the amount of the recognized tax benefit is still appropriate. As of December 31, 2012, 2011, and 2010, our total unrecognized tax benefits were $10.0 million, $9.3 million and $6.4 million, respectively, of which none of the tax benefits, if recognized, would affect the effective income tax rate due to the valuation allowance that currently offsets deferred tax assets. We do not anticipate the total amount of unrecognized income tax benefits to significantly increase or decrease in the next 12 months.

Recent Accounting Pronouncements

See Note 2. Summary of Significant Accounting Policies of the Notes to Consolidated Financial Statements in Part II, Item 8. Financial Statements and Supplementary Data for a full description of recent accounting pronouncements including the respective expected dates of adoption and effects on our results of operations and financial condition.

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Results of Operations

Comparison of the Years Ended December 31, 2012 and 2011

(in thousands, except percentages)	Years Ended December 31, 2012	2011	Increase/ (Decrease)	% Increase/ (Decrease)
	(in thousands)			
Revenue:				
Product revenue	$ 20,089	$ 31,486	$ (11,397)	(36%)
Service and other revenue	4,959	1,487	3,472	233%
Grant revenue	935	890	45	5%
Total revenue	25,983	33,863	(7,880)	(23%)
Cost of Revenue:				
Cost of product revenue	18,796	18,725	71	0%
Cost of service and other revenue	6,247	2,104	4,143	197%
Total cost of revenue	25,043	20,829	4,214	20%
Gross profit	940	13,034	(12,094)	(93%)
Operating Expense:				
Research and development	47,623	76,080	(28,457)	(37%)
Sales, general and administrative	47,655	46,710	945	2%
Total operating expense	95,278	122,790	(27,512)	(22%)
Operating loss	(94,338)	(109,756)	15,418	14%
Other income (expense), net	(127)	368	(495)	(135%)
Net loss	$ (94,465)	$ (109,388)	$ 14,923	14%

Revenue

Revenue for the year ended December 31, 2012 totaled $26.0 million compared to $33.9 million for the year ended December 31, 2011. We began commercial shipments of our PacBio *RS* during the second quarter of 2011. Product revenue for the year ended December 31, 2012 consisted of $15.5 million from sales of our PacBio *RS* instruments and $4.6 million from sales of consumables compared to $30.2 million from sales of our PacBio *RS* instruments and $1.3 million from sales of consumables for the year ended December 31, 2011. The decrease in instrument revenue was primarily due to a 52% decrease in the number of instrument deliveries from 48 during 2011 to 23 during 2012.

Service and other revenue primarily consists of revenue derived from product maintenance agreements, while grant revenue represents amounts earned under research agreements with government entities which are recognized in the period during which the related costs are incurred.

Service and other revenue totaling $5.0 million and $1.5 million, for the years ended December 31, 2012 and 2011, respectively, was primarily derived from product maintenance agreements sold in conjunction with PacBio *RS* instruments. The increase in service and other revenue was primarily attributable to a larger installed base of PacBio *RS* instruments in 2012.

Grant revenue earned is dependent on the grant received, the amount of the grant and subsequent work performed pursuant to the grant. Grant revenue remained relatively consistent at $0.9 million for the years ended December 31, 2011 and 2012. We do not expect grant revenue to be a

significant source of total revenue in the future.

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Gross Profit

Gross profit of $0.9 million and $13.0 million for the years ended December 31, 2012 and 2011 corresponds to the recognition of revenue on 23 and 48 PacBio *RS* instruments, respectively, as well as consumable shipments and services provided to our installed base of instruments. Cost of product revenue of $18.8 million for the year ended December 31, 2012 reflects the costs relating to components and manufacturing overhead incurred on the 23 instruments that were installed and consumables that were shipped during the period. Cost of product revenue of $18.7 million for the year ended December 31, 2011 reflects a portion of the costs relating to components and manufacturing overhead incurred on the 48 instruments that were delivered and installed during the year. The gross margin for 2011 reflects the positive margin impact of instrument components as a significant portion of the costs associated with the instrument revenue recognized during 2011 were incurred prior to September 30, 2010 and were expensed as research and development costs as we had not yet finalized our commercial designs, specifications and configurations for our product. All of the previously expensed inventory was utilized by December 31, 2011. As a result, there was a significant increase in product related cost as a percentage of product sales during 2012, which decreased our gross margin. Cost of service and other revenue of $6.2 million and $2.1 million for the years ended December 31, 2012 and 2011, respectively, reflect the costs of personnel and support infrastructure necessary to support the installed base of PacBio *RS* instruments.

Research and Development Expense

Research and development expense consists primarily of expenses for personnel engaged in the development of our SMRT technology, the design and development of our products, including the PacBio *RS* , SMRT Cells and reagent kits and the scientific research necessary to produce commercially viable applications of our technology. These expenses also include prototype-related expenditures, development equipment and supplies, facilities costs and other related overhead.

For the year ended December 31, 2012, research and development expenses decreased $28.5 million, or 37%, compared to the year ended December 31, 2011. The decrease was driven primarily by a $17.5 million decrease in personnel related expense, including stock-based compensation, due to lower average headcount in 2012 compared to 2011. The decrease in expenses also includes a $4.1 million decrease related to expensed instrument development components accounted for as development expense in 2011, a $3.5 million decrease in supplies, development materials and prototype-related expenses, a $1.2 million decrease in consulting and professional services, a $0.9 million decrease in facility and technology expenses, and a net decrease of $1.3 million in other research and development expenses. Research and development expense includes stock-based compensation of $4.6 million and $5.9 million during the years ended December 31, 2012 and 2011, respectively, and $3.5 million of restructuring charges during the year ended December 31, 2011. Research and development expenses can fluctuate due to the timing of when certain activities such as prototype expenses occur.

Sales, General and Administrative Expense

Selling, 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.

For the year ended December 31, 2012, selling, general and administrative expenses increased $0.9 million, or 2%, compared to the year ended December 31, 2011. The increase was driven primarily by a $3.2 million increase in legal and other professional and consulting expenses primarily related to litigation, including settlement charges of $1.8 million. The increase in expenses also includes a $1.2 million increase in depreciation expense, partially offset by a $3.0 million increase in service cost allocations to cost of service. Allocation of service related costs from sales, general and administrative expense to cost of service began in conjunction with the commercial launch during the second quarter of 2011. Sales, general and administrative expense includes

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stock-based compensation expense of $4.6 million and $6.0 million during the years ended December 31, 2012 and 2011, respectively, and $1.4 million of restructuring costs during the year ended December 31, 2011.

Other Income (Expense), Net

Other income (expense), net changed from $0.4 million of net income for the year ended December 31, 2011 to a net expense of $0.1 million for the year ended December 31, 2012. The change was primarily attributed to fixed assets disposed of during the first and third quarters of 2012 and lower interest income in the year ended December 31, 2012 compared to the year ended December 31, 2011. The decrease in interest income was primarily a result of lower average investment balances during 2012 as compared to 2011.

Comparison of the Years Ended December 31, 2011 and 2010

(in thousands, except percentages)	Years Ended December 31, 2011	2010	Increase/ (Decrease)	% Increase/ (Decrease)
	(in thousands)			
Revenue:				
Product revenue	$ 31,486	$	$ 31,486	
Service and other revenue	1,487		1,487	
Grant revenue	890	1,674	(784)	(47%)
Total revenue	33,863	1,674	32,189	1923%
Cost of Revenue:				
Cost of product revenue	18,725		18,725	
Cost of service and other revenue	2,104		2,104	
Total cost of revenue	20,829		20,829	
Gross profit	13,034	1,674	11,360	679%
Operating Expense:				
Research and development	76,080	111,821	(35,741)	(32%)
Sales, general and administrative	46,710	30,087	16,623	55%
Total operating expense	122,790	141,908	(19,118)	(13%)
Operating loss	(109,756)	(140,234)	30,478	22%
Other income, net	368	68	300	441%
Net loss	$ (109,388)	$ (140,166)	$ 30,778	22%

Revenue

Revenue for the year ended December 31, 2011 totaled $33.9 million compared to $1.7 million for the year ended December 31, 2010. We began commercial shipments of our PacBio *RS* during the second quarter of 2011. Product revenue for the year ended December 31, 2011 consisted of $30.2 million from sales of our PacBio *RS* instruments and $1.3 million from sales of consumables. The instrument revenue stemmed from the delivery, installation and acceptance of 48 instrument installations during 2011. Service and other revenue totaling $1.5 million for the year ended December 31, 2011 was primarily derived from product maintenance agreements sold in conjunction with PacBio *RS* instruments.

Grant revenue earned is dependent on the grant received, the amount of the grant and subsequent work performed pursuant to the grant. For the year ended December 31, 2011, grant revenue decreased $0.8 million to $0.9 million compared to $1.7 million in the year ended December 31, 2010. The decrease was driven primarily by a decrease in the amount of work performed pursuant to the available grants.

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Gross Profit

Gross profit of $13.0 million for the year ended December 31, 2011 reflects the sale of 48 PacBio *RS* instruments. Cost of product revenue of $18.7 million for the year ended December 31, 2011 reflects part of the costs relating to components and manufacturing overhead incurred on the 48 instruments that were delivered and installed during the year. A significant portion of the costs associated with the instrument revenue recognized during 2011 were incurred prior to September 30, 2010 and were expensed as research and development costs as we had not yet finalized our commercial designs, specifications and configurations for our product. Cost of service and other revenue of $2.1 million for the year ended December 31, 2011 reflect the costs of personnel and support infrastructure necessary to support the installed base of PacBio *RS* instruments. The negative margin on service revenue was due to service costs classified within cost of revenue exceeding the associated service revenue. We did not realize product costs during the year ended December 31, 2010 as revenue was derived solely from government grants.

Research and Development Expense

For the year ended December 31, 2011, research and development expenses decreased $35.7 million, or 32%, compared to the year ended December 31, 2010. The decrease consists of a reduction of $28 million of development expenses comprised of $8.7 million of pre-production inventory, $16.6 million of prototypes and prototype materials, and $2.7 million of consulting. These decreases reflect the development stage of our PacBio *RS* during 2010. The decline in prototypes, prototype materials and consulting expenses during 2011 can be attributed to the finalization of the commercial design of the PacBio *RS* during 2010. Pre-production inventory consists of commercially viable inventory that we expensed prior to September 30, 2010 as we had not yet finalized our commercial designs, specifications and configurations. The expensing of the pre-production inventory during 2010 contributed to the favorable margins of our commercial products during 2011. Additionally, the results for the year ended December 31, 2011 reflect the absorption of $8.6 million of manufacturing overhead into inventory and cost of revenue. Research and development expense includes stock-based compensation of $5.9 million and $6.6 million during the years ended December 31, 2011 and 2010, respectively, and $3.5 million of restructuring charges during the year ended December 31, 2011.

Sales, General and Administrative Expense

For the year ended December 31, 2011, selling, general and administrative expenses increased $16.6 million, or 55%, compared to the year ended December 31, 2010. The increase was driven primarily by an $11.8 million increase in personnel related expense, including a $2.9 million increase in stock-based compensation, as we built out our field sales and service functions. Additionally, professional services increased $3.3 million, primarily attributable to public company compliance and legal matters. Sales, general and administrative expense includes stock-based compensation expense of $6.0 million and $3.1 million during the years ended December 31, 2011 and 2010, respectively, and $1.4 million of restructuring costs during the year ended December 31, 2011.

Other Income, Net

The change in other income, net primarily reflects an increase in interest income compared to the year ended December 31, 2010. The increase was primarily a result of higher average investment balances during 2011 as compared to 2010 as a result of the proceeds from our IPO in October 2010.

Liquidity and Capital Resources

Since our inception we have financed our operations primarily through the issuance of common stock and convertible preferred stock resulting in $587.1 million in net proceeds. Cash and investments at December 31, 2012 totaled $100.6 million compared to $177.4 million at December 31, 2011, reflecting cash usage of $76.8

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million. Cash usage in 2013, excluding the impact of any debt or equity financing, is expected to decrease as compared to 2012. Additionally, during the first quarter of 2013 we received approximately $20 million in net proceeds as a result of the facility agreement with Deerfield and commenced selling shares under the agreement with Cantor. Refer to Financing Activities below for additional details.

We believe that existing cash, cash equivalents and investments will be sufficient to fund our projected operating requirements for at least 12 months; however, it is likely that we will need additional financing in the future including, but not limited to, the financing arrangements as detailed under Financing Activities below. These expectations are based on our current operating and financing plans, which are subject to change. 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 maintain new collaboration and customer arrangements; the progress of our research and development programs; initiation or expansion of research programs and collaborations; 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 agreements on unattractive terms. Our inability to raise capital could have a material adverse effect on our business, financial condition and results of operations.

The following table summarizes our cash flows activities for the periods indicated.

	Years Ended December 31,		
	2012	2011	2010
		(in thousands)	
Net cash provided by (used in):			
Operating activities	$ (76,822)	$ (102,974)	$ (121,996)
Investing activities	61,792	6,446	(138,250)
Financing activities	2,705	7,743	318,664

Operating Activities

Our primary uses of cash from operating activities are for the manufacturing and sale of PacBio *RS* instruments and consumables, development of ongoing product enhancements and future product releases, and support functions related to our selling, general and administrative activities. The net cash used for the years ended December 31, 2012, 2011 and 2010 primarily reflects the net loss for those periods, partially offset by non-cash operating expenses including depreciation, stock-based compensation, and changes in operating assets and liabilities.

Cash used in operating activities of $76.8 million in 2012 reflected a net loss of $94.5 million, non-cash transactions of $16.6 million consisting primarily of depreciation and stock-based compensation, and $1.0 million cash provided from working capital. Changes in working capital comprised primarily of (i) inventory decreasing as a result of a decrease in the amount of instruments awaiting customer acceptance as compared to the prior year (ii) accounts receivable and deferred revenue decreasing due to the timing of instrument sales (iii) prepaid expenses and other assets, accounts payable, accrued expenses and other current liabilities fluctuated primarily due to the timing of vendor, litigation related, and employee compensation payments during 2012.

Cash used in operating activities of $103.0 million in 2011 reflected a net loss of $109.4 million, an $11.4 million increase in inventories and other net changes of $0.4 million, partially offset by depreciation and stock-based compensation of $5.8 million and $12.4 million, respectively. In addition, cash used in operating activities

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decreased for the year ended December 31, 2011 as compared to the year ended December 31, 2010 as a result of the decreased net loss in 2011.

Cash used in operating activities of $122.0 million in 2010 reflected a net loss of $140.2 million, partially offset by aggregate non-cash charges of $15.3 million and a net change of $2.9 million in our net operating assets and liabilities. Non-cash charges primarily included $9.7 million in stock-based compensation and $5.2 million of depreciation. Net operating assets and liabilities included an increase of $7.9 million in accounts payable, accrued expenses and other current liabilities primarily driven by payroll-related expense, and an increase of $3.2 million in deferred revenue related to shipments of PacBio *RS* limited production release instruments, partially offset by an inventory increase of $6.9 million.

Investing Activities

Our investing activities consist primarily of investment purchases, maturities and sales and capital expenditures.

In 2012, net cash provided by investing activities was $61.8 million, comprised of net sales and maturities of investments of $63.5 million, partially offset by $1.7 million of purchases of property and equipment.

In 2011, net cash provided by investing activities was $6.4 million, comprised of net sales and maturities of investments of $15.7 million, partially offset by $9.3 million of purchases of property and equipment.

In 2010, the majority of our investing activities were driven by the purchase and maturities of investments achieved as a result of receiving $210.8 million in IPO proceeds. We used approximately $181.0 million in cash to purchase short-term investments and $5.3 million of capital expenditures, partially offset by approximately $48.0 million in maturities.

Financing Activities

In 2012, cash provided by financing activities was $2.7 million, comprised entirely of proceeds from the exercise of common stock options.

In 2011, cash provided by financing activities was $7.7 million, comprised entirely of proceeds from the exercise of common stock options.

In 2010, cash provided by financing activities was $318.7 million, comprised of $210.8 million in IPO net proceeds received in November 2010 and $106.1 million raised from issuance of Series F convertible preferred stock, prior to our IPO.

In April 2012, we filed a shelf registration statement on Form S-3 with the SEC pursuant to which we may, from time to time, sell up to an aggregate of $150 million of our common stock, warrants or debt securities. On May 1, 2012, the registration statement was declared effective by the SEC, which will allow us to access the capital markets for the three year period following the effective date.

Common stock at-the-market offering

On October 5, 2012, we entered into a Controlled Equity Offering Sales Agreement (Sales Agreement) with Cantor Fitzgerald & Co. (Cantor) pursuant to which we may offer and sell, from time to time, through Cantor shares of our common stock having an aggregate offering price of up to $30.0 million through an at-the-market offering. We will pay Cantor a commission equal to 3% of the gross proceeds from the sale of shares of our common stock under the Sales Agreement and reimburse up to $50,000 of legal expenses incurred by Cantor. We intend to use the net proceeds from this offering for general corporate purposes, including capital expenditures and working capital. We may also use a portion of the net proceeds from this offering to acquire or

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invest in complementary businesses, technologies, product candidates or other intellectual property. We are not obligated to make any sales of shares under the Sales Agreement. As of December 31, 2012, no shares of the Company s common stock had been sold under this Sales Agreement. We commenced selling shares on February 7, 2013 and as of March 12, 2013, we have sold in aggregate approximately 3.9 million shares resulting in net proceeds of approximately $8.6 million.

Debt facility and warrant agreement

On February 5, 2013, we entered into a Facility Agreement (the Facility Agreement) with entities affiliated with Deerfield Management Company, L.P. (collectively, Deerfield), pursuant to which Deerfield agreed to provide $20.5 million in funding to us (the Facility). Under the terms of the Facility Agreement, we issued to Deerfield 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. 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 has a maximum term of seven years from the date of the Facility Agreement. The Facility Agreement provides for an early repayment of principal in the event we have Net Sales (as defined in the Facility Agreement) of less than $41 million for the twelve-month period from the beginning of the second calendar quarter of 2014 through the first calendar quarter of 2015 (the Milestone). If the Milestone is not achieved, at Deerfield s option, one-third of the original principal balance of the Facility will become due on each of the third, fourth and fifth anniversaries of the date of the Facility Agreement.

From and after 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, we shall apply 25% of the net proceeds from any financing that includes an equity component, including without limitation, the sale or issuance of our common stock (the Common Stock), options, warrants or other securities convertible or exchangeable for shares of Common Stock, to the payment of the Notes. This right is subject to certain exceptions set forth in the Facility Agreement, including that the right will not apply until we have issued 15,000,000 shares (as adjusted for any stock split or reverse stock split) of our Common Stock or rights to acquire our capital stock following the date of the Facility Agreement.

Deerfield has 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 may become immediately due and payable upon an Event of Default, as defined in the Facility Agreement, in which case Deerfield 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 Facility at our option.

The Facility Agreement also contains various representations and warranties, and affirmative and negative covenants, customary for financings of this type, including restrictions on the ability of the Company and its subsidiaries to incur additional indebtedness or liens on its assets, except as permitted under the Facility Agreement. In addition, we are required 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 and interests in property.

In connection with the execution of the Facility Agreement, on February 5, 2013, we issued to Deerfield warrants to purchase an aggregate of 5,500,000 shares of Common Stock immediately exercisable at an exercise price initially equal to $2.63 (the Warrants). The number of shares of Common Stock into which the Warrants are exercisable and the exercise price will be adjusted to reflect any stock splits, payment of stock dividends, recapitalizations, reclassifications or other similar adjustments in the number of outstanding shares of Common Stock. The exercise price may also be adjusted to reflect certain dividends or other distributions, including

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distributions of stock or other securities, property or options by way of a dividend, spin off, reclassification, corporate rearrangement, scheme of arrangement or similar transaction.

Contractual Obligations, Commitments and Contingencies

The following table provides summary information concerning our future contractual obligations as of December 31, 2012.

		Payments due by period		
	Total	Less than 1 year	1-3 years	More than 3 years
		(in thousands)		
Purchase commitments and obligations	$ 7,929	$ 7,929		
Operating lease obligations (1)	11,499	3,789	7,710	
Facility financing obligation	1,944	629	1,315	
Total contractual obligations (2)	$ 21,372	12,347	9,025	

(1) Maintenance, insurance, taxes and contingent rent obligations are excluded. See Note 6. Commitments and Contingencies in Part II, Item 8 of this Form 10-K for additional information.

(2) Amounts do not reflect payments required by the $20.5 million promissory note due under the Facility Agreement entered into with Deerfied on February 5, 2013. The Facility has a maximum term of seven years from the date of the Facility Agreement at which time the $20.5 million principal would become due.

Purchase commitments and obligations.

These amounts include an estimate of all open purchase orders and contractual obligations in the ordinary course of business, including commitments with contract manufacturers and suppliers, for which we have not received the goods or services. A majority of these purchase obligations are due within a year. Although open purchase orders are considered enforceable and legally binding, the terms generally allow us the option to cancel, reschedule, and adjust our requirements based on our business needs prior to the delivery of goods or performance of services.

Facility Financing Obligation

In December 2009 we entered into a build-to-suit lease agreement for a manufacturing and office facility where we are considered the owner of the project under GAAP. When we are considered the owner of a project, we record the shell of the facility at its fair value at the date construction commences with a corresponding facility financing obligation. Accordingly, we recorded $3.0 million of building and leasehold improvement assets and a corresponding liability to facility financing obligation. See Note 5. Facility Financing and Debt Obligations in Part II, Item 8 of this Form 10-K for a discussion of this obligation.

License Agreements

The table above reflects only payment obligations that are fixed and determinable. Milestone payments and royalty payments under our license agreements are not included in the table above because we cannot, at this time, determine when or if the events triggering the commencement of payment obligations will occur.

Payments related to licensing and other arrangements not included in the contractual obligations table include amounts related to cancelable license agreements with third parties for certain patent rights and technology. Under the terms of these agreements, we may be obligated to pay royalties based on revenue from the sales of licensed products, or minimum royalties, whichever is greater, and license maintenance fees. The future license maintenance fees and minimum royalty payments under the license agreements are not deemed to be material.

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Off-Balance Sheet Arrangements

As of December 31, 2012 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 negligent 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 fund raising 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 such third parties and the Company in connection with such fund raising efforts. To the extent that such indemnification obligations apply to the lawsuits described in Part II, Item 8. Financial Statements Note 6. *Commitments and Contingencies* , any associated expenses incurred are included within the related accrued litigation expense amounts. No additional liability associated with such indemnification agreements has been recorded at December 31, 2012.

ITEM 7A. 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 our investments, of which less than $1.0 million have maturities greater than one year. The goals of our investment policy are preservation of capital, fulfillment of liquidity needs and fiduciary control of cash 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 an increase in market rates would have any material negative impact on the value of our investment portfolio.

Foreign Exchange Risk

The majority of our revenue, expense, and capital purchasing activities are transacted in U.S. dollars. However, a portion of our operations consists of developments and 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. A 10% strengthening of the U.S. dollar exchange rate against all currencies with which we have exposure, after taking into account offsetting positions at December 31, 2012 would have resulted in a $0.1 million decrease in the carrying amounts of those net assets. Actual gains and losses in the future may differ materially from the hypothetical gains and losses discussed above based on changes in the timing and amount of foreign currency exchange rate movements and our actual exposure.

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.

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ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTAL DATA

PACIFIC BIOSCIENCES OF CALIFORNIA, INC.

Index to Consolidated Financial Statements

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Report of Independent Registered Public Accounting Firm

The Board of Directors and Stockholders of Pacific Biosciences of California, Inc.

We have audited the accompanying consolidated balance sheets of Pacific Biosciences of California, Inc. as of December 31, 2012 and 2011, and the related consolidated statements of operations and comprehensive loss, stockholders equity (deficit) and cash flows for each of the two years in the period ended December 31, 2012. These financial statements are the responsibility of Pacific Biosciences of California, Inc. s management. Our responsibility is to express an opinion on these financial statements based on our audits.

We conducted our audits in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the financial statements referred to above present fairly, in all material respects, the consolidated financial position of Pacific Biosciences of California, Inc. at December 31, 2012 and 2011, and the consolidated results of its operations and its cash flows for each of the two years in the period ended December 31, 2012, in conformity with U.S. generally accepted accounting principles.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), the effectiveness of Pacific Biosciences of California, Inc. s internal control over financial reporting as of December 31, 2012, based on criteria established in *Internal Control Integrated Framework* issued by the Committee of Sponsoring Organizations of the Treadway Commission and our report dated March 15, 2013 expressed an unqualified opinion thereon.

/s/ Ernst & Young LLP

Redwood City, California
March 15, 2013

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Report of Independent Registered Public Accounting Firm

To the Board of Directors and Stockholders of

Pacific Biosciences of California, Inc.:

In our opinion, the consolidated statement of operations and comprehensive loss, consolidated statement of stockholders equity (deficit), and the consolidated statement of cash flows for the year ended December 31, 2010 present fairly, in all material respects, the results of operations and cash flows of Pacific Biosciences of California Inc. and its subsidiaries for the year ended December 31, 2010 in conformity with accounting principles generally accepted in the United States of America. These financial statements are the responsibility of the Company s management. Our responsibility is to express an opinion on these financial statements based on our audit. We conducted our audit of these statements in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements, assessing the accounting principles used and significant estimates made by management, and evaluating the overall financial statement presentation. We believe that our audit provides a reasonable basis for our opinion.

/s/ PricewaterhouseCoopers LLP
San Jose, California
March 23, 2011

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PACIFIC BIOSCIENCES OF CALIFORNIA, INC.

Consolidated Balance Sheets

(in thousands except per share amounts)	December 31, 2012	2011
Assets		
Current assets		
Cash and cash equivalents	$ 46,540	$ 58,865
Investments	54,040	118,569
Accounts receivable	2,822	4,557
Inventory, net	9,592	15,517
Prepaid expenses and other current assets	2,006	2,093
Total current assets	115,000	199,601
Property and equipment, net	14,329	18,398
Long-term assets	354	317
Total assets	$ 129,683	$ 218,316
Liabilities, Convertible Preferred Stock and Stockholders Equity (Deficit)		
Current liabilities		
Accounts payable	$ 2,988	$ 4,742
Accrued expenses and other current liabilities	8,204	10,258
Deferred revenue, current	3,378	4,236
Facility financing obligation, current	173	140
Total current liabilities	14,743	19,376
Deferred revenue, non-current	800	1,616
Lease incentives and other long-term liabilities	2,145	3,075
Facility financing obligation, non-current	2,613	2,786
Total liabilities	20,301	26,853
Commitments and contingencies (Note 6)		
Stockholders equity		
Convertible Preferred Stock, $0.001 par value:		
Authorized 50,000 shares; No shares issued or outstanding at December 31, 2012 and 2011		
Common Stock and additional paid-in-capital, $0.001 par value:		
Authorized 1,000,000 shares; Issued and outstanding 56,170 and 54,964 shares at December 31, 2012 and 2011, respectively	645,372	632,961
Accumulated other comprehensive income	30	57
Accumulated deficit	(536,020)	(441,555)
Total stockholders equity	109,382	191,463
Total liabilities and stockholders equity	$ 129,683	$ 218,316

See accompanying notes to the consolidated financial statements.

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PACIFIC BIOSCIENCES OF CALIFORNIA, INC.

Consolidated Statements of Operations and Comprehensive Loss

(in thousands, except per share amounts)	Years Ended December 31, 2012	2011	2010
Revenue:			
Product revenue	$ 20,089	$ 31,486	$
Service and other revenue	4,959	1,487	
Grant revenue	935	890	1,674
Total revenue	25,983	33,863	1,674
Cost of Revenue:			
Cost of product revenue	18,796	18,725	
Cost of service and other revenue	6,247	2,104	
Total cost of revenue	25,043	20,829	
Gross profit	940	13,034	1,674
Operating Expense:			
Research and development	47,623	76,080	111,821
Sales, general and administrative	47,655	46,710	30,087
Total operating expense	95,278	122,790	141,908
Operating loss	(94,338)	(109,756)	(140,234)
Other income (expense), net	(127)	368	68
Net loss	$ (94,465)	$ (109,388)	$ (140,166)
Other comprehensive income (loss):			
Unrealized gain/(loss) on investments	(27)	78	(22)
Comprehensive loss	$ (94,492)	$ (109,310)	$ (140,188)
Net loss per share:			
Basic and diluted net loss per share	$ (1.69)	$ (2.03)	$ (14.10)
Shares used in computing basic and diluted net loss per share	55,733	53,874	9,938

See accompanying notes to the consolidated financial statements.

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PACIFIC BIOSCIENCES OF CALIFORNIA, INC.

Consolidated Statements of Stockholders Equity (Deficit)

(in thousands)	Common Stock Shares	Common Stock Amount	Additional Paid-in Capital	Accumulated Other Comprehensive Income (Loss)	Accumulated Deficit	Total Stockholders Equity (Deficit)
Balances at December 31, 2009	656	$	$ 14,877	$ 1	$ (192,001)	$ (177,123)
Conversion of redeemable convertible preferred stock to common stock at initial public offering	37,184	37	374,927			374,964
Conversion of warrants from warrants for preferred stock to warrants for common stock			326			326
Elimination of fractional shares resulting from reverse stock split	(1)		(1)			(1)
Issuance of common stock from Initial public offering, net of issuance costs	14,375	15	210,766			210,781
Issuance of Common Stock upon exercise of stock options	607	1	707			708
Issuance of Common Stock to consultant	21		281			281
Issuance of Common Stock in connection with exercise of warrants	13					
Vesting of Common Stock options early exercised			428			428
Employee stock-based compensation expense recorded under the intrinsic value method			845			845
Employee stock-based compensation expense recorded under the fair value method			7,880			7,880
Nonemployee stock-based compensation expense			965			965
Components of Comprehensive loss:						
Other comprehensive loss				(22)		(22)
Net loss					(140,166)	(140,166)
Total comprehensive loss						(140,188)
Balances at December 31, 2010	52,855	$ 53	$ 612,001	$ (21)	$ (332,167)	$ 279,866

See accompanying notes to the consolidated financial statements.

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PACIFIC BIOSCIENCES OF CALIFORNIA, INC.

Consolidated Statements of Stockholders Equity (Deficit) (Continued)

(in thousands)	Common Stock Shares	Common Stock Amount	Additional Paid-in Capital	Accumulated Other Comprehensive Income (Loss)	Accumulated Deficit	Total Stockholders Equity (Deficit)
Balances at December 31, 2010	52,855	$ 53	$ 612,001	$ (21)	$ (332,167)	$ 279,866
Components of Comprehensive loss:						
Net loss					(109,388)	(109,388)
Other comprehensive loss				78		78
Total comprehensive loss						(109,310)
Issuance of Common Stock	2,109	2	7,741			7,743
Vesting of Common Stock options early exercised			780			780
Employee stock-based compensation expense recorded under the fair value method			12,146			12,146
Nonemployee stock-based compensation expense			238			238
Balances at December 31, 2011	54,964	$ 55	$ 632,906	$ 57	$ (441,555)	$ 191,463
Components of Comprehensive loss:						
Net loss					(94,465)	(94,465)
Other comprehensive loss				(27)		(27)
Total comprehensive loss						(94,492)
Issuance of Common Stock	1,206	1	2,704			2,705
Employee stock-based compensation expense recorded under the fair value method			9,627			9,627
Nonemployee stock-based compensation expense			79			79
Balances at December 31, 2012	56,170	$ 56	$ 645,316	$ 30	$ (536,020)	$ 109,382

See accompanying notes to the consolidated financial statements.

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PACIFIC BIOSCIENCES OF CALIFORNIA, INC.

Consolidated Statements of Cash Flows

(in thousands)	Years Ended December 31, 2012	2011	2010
Cash flows from operating activities			
Net loss	$ (94,465)	$ (109,388)	$ (140,166)
Adjustments to reconcile net loss to net cash used in operating activities			
Depreciation and amortization	6,649	5,803	5,160
Stock-based compensation	9,705	12,384	9,690
Other items	287	226	459
Changes in assets and liabilities			
Accounts receivable	1,735	(4,216)	(341)
Inventory	4,761	(11,409)	(6,864)
Prepaid expenses and other assets	1,058	1,874	(1,336)
Accounts payable	(1,754)	(4,773)	3,637
Accrued expenses and other current liabilities	(2,054)	3,044	4,245
Deferred revenue	(1,674)	2,631	3,221
Lease incentives and other long-term liabilities	(1,070)	850	299
Net cash used in operating activities	(76,822)	(102,974)	(121,996)
Cash flows from investing activities			
Purchase of property and equipment	(1,703)	(9,284)	(5,259)
Purchase of investments	(87,889)	(264,071)	(180,964)
Sales of investments	7,896	36,520	
Maturities of investments	143,488	243,281	47,973
Net cash provided by (used in) investing activities	61,792	6,446	(138,250)
Cash flows from financing activities			
Proceeds from issuance of Convertible Preferred Stock, net			106,145
Proceeds from issuance of Common Stock	2,705	7,743	212,519
Net cash provided by financing activities	2,705	7,743	318,664
Net (decrease) increase in cash and cash equivalents	(12,325)	(88,785)	58,418
Cash and cash equivalents at beginning of period	58,865	147,650	89,232
Cash and cash equivalents at end of period	$ 46,540	$ 58,865	$ 147,650
Supplemental disclosure of non-cash investing and financing activities			
Assets acquired under facility lease	$	$	$ 2,971
Additions to property and equipment under tenant improvement allowances			1,910
Inventory transferred to property and equipment for internal use	1,164	2,756	
Conversion of convertible preferred stock to common stock upon IPO			374,965
Reclassification of preferred warrants to common stock warrants			326
Issuance of common stock related to convertible preferred stock offering			281
Vesting of stock options related to early exercises		780	428

See accompanying notes to the consolidated financial statements.

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PACIFIC BIOSCIENCES OF CALIFORNIA, INC.

Notes to Consolidated Financial Statements

1. Overview

Pacific Biosciences of California, Inc., (Pacific Biosciences , PacBio , the Company , we , us) has commercialized a platform for single molecu real-time detection of biological events. Our initial focus is on the DNA sequencing market where we have developed and introduced a third generation sequencing platform.

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

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 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 GAAP requires us to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenue and expense during the reporting periods. Our estimates include, but are not limited to, useful lives assigned to long-lived assets, assumptions used in computing stock-based compensation expense, provisions for income taxes, inventory and contingencies. Actual results could differ from our estimates, and such differences could be material to our financial position and results of operations.

Fair Value of Financial Instruments

The carrying amount of our financial assets and liabilities, including accounts receivable, prepaid expenses, other current assets, accounts payable, accrued expenses and other current liabilities, approximate fair value due to their short maturities. The carrying value of our facility financing obligation approximates fair value based on currently available borrowing rates and after consideration of non-performance risk and credit risk.

The fair value hierarchy established under 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

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market as one in which there are few transactions 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.

All of our cash deposits and money market funds are classified within Level 1 of the fair value hierarchy because they are valued using bank balances or quoted market prices. Our investments are classified as Level 2 instruments based on market pricing and other observable inputs. None of our investments are classified 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.

The following table sets forth the fair value of our financial assets that were measured on a recurring basis as of December 31, 2012 and 2011, respectively (in thousands):

	December 31, 2012			December 31, 2011		
	Level 1	Level 2	Total	Level 1	Level 2	Total
Assets						
Cash and cash equivalents:						
Cash and money market funds	$ 11,847	$	$ 11,847	$ 49,267	$	$ 49,267
Commercial paper		34,693	34,693		9,598	9,598
Investments:						
Commercial paper		28,866	28,866		29,772	29,772
Corporate debt securities		13,203	13,203		37,387	37,387
Asset backed securities		955	955		9,909	9,909
Certificates of deposit		2,008	2,008		4,034	4,034
U.S. government and agency securities		9,008	9,008		37,467	37,467
Total assets measured at fair value	$ 11,847	$ 88,733	$ 100,580	$ 49,267	$ 128,167	$ 177,434

The estimated fair value of marketable debt securities (commercial paper, corporate debt securities, asset backed securities, certificates of deposit, and U.S. government and agency securities) as of December 31, 2012, by contractual maturity, are as follows:

	Fair Value
Due in one year or less	$ 87,778
Due after one year through 3 years	955
Total investments in debt securities	$ 88,733

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

Cash and cash equivalents

We consider all highly liquid investments purchased with an original maturity of three months or less to be cash equivalents.

Investments

We have designated all investments as available-for-sale and therefore, such investments are reported at fair value, with unrealized gains and losses recorded in accumulated other comprehensive income (loss) (OCI) in stockholders equity. The cost of marketable securities is adjusted for

the amortization of premiums and

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discounts to expected maturity. Premium and discount amortization is included in other income (expense), net. Realized gains and losses, as well as interest income, on available-for-sale securities are also included in other income (expense), net. The cost of securities sold is based on the specific identification method. We include all of our available-for-sale securities in current assets.

All of our investments are subject to a periodic impairment review. We recognize an impairment charge when a decline in the fair value of our investments below the cost basis is judged to be other-than-temporary. Factors considered in determining whether a loss is temporary included the length of time and extent to which the investments fair value has been less than the cost basis, the financial condition and near-term prospects of the investee, extent of the loss related to credit of the issuer, the expected cash flows from the security, our intent to sell the security and whether or not we will be required to sell the security before the recovery of its amortized cost. During the years ended December 31, 2012, 2011 and 2010, we did not record any impairment charges on our investments as it is more likely than not that we will recover their amortized cost basis upon sale or maturity.

Concentration of Credit Risk

The counterparties to the agreements relating to our investment securities consist of various major corporations, financial institutions, municipalities and government agencies of high credit standing. Our accounts receivable are derived from net revenue to customers and distributors located in the United States and other countries. We perform credit evaluations of our customers financial condition and, generally, require no collateral from our customers. We regularly review our accounts receivable including consideration of factors such as historical experience, credit quality, the age of the accounts receivable balances and current economic conditions that may affect a customer s ability to pay. We have not experienced any significant losses to date. As of December 31, 2012 and 2011, approximately 95% and 62%, respectively, of our accounts receivable were from domestic customers. As of December 31, 2012, approximately 78% of our net accounts receivable were from 3 individual customers, each representing at least 10% of our net accounts receivable. As of December 31, 2011, approximately 85% of our net accounts receivable were from 5 individual customers, each representing at least 10% of our net accounts receivable.

Inventory

Inventory is valued at the lower of the standard cost, which approximates actual cost, or market. Cost is determined using the FIFO (first-in, first-out) method. Adjustments to reduce the cost of inventory to its net realizable value, if required, are made for estimated excess or obsolete balances.

Property and Equipment, Net

Property and equipment are stated at cost, net of accumulated depreciation and any impairment charges. Depreciation is computed using the straight-line method over the estimated useful life of the asset, generally two to three years for computer equipment, three to five years for software, three to seven years for furniture and fixtures, three years for lab equipment and 30 years for buildings. Leasehold improvements are depreciated over the shorter of the lease term or the estimated useful life of the related asset. Major improvements are capitalized, while maintenance and repairs are expensed as incurred.

In connection with build-to-suit lease arrangements that we account for as if we own the facility, we record the facility at the fair value at the date construction commences, prior to significant renovations, plus the costs of the renovations. We determined the fair value of such facilities prior to renovation based on several factors, including an appraisal conducted by an independent licensed appraiser.

Impairment of Long-Lived Assets

We periodically review property and equipment for impairment whenever events or changes in circumstances indicate that the carrying amount of an asset is impaired or the estimated useful lives are no longer appropriate. Fair value is estimated based on discounted future cash flows. If indicators of impairment exist and

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the undiscounted projected cash flows associated with such assets are less than the carrying amount of the asset, an impairment loss is recorded to write the asset down to its estimated fair values. To date, we have not recorded any impairment charges.

Revenue Recognition

Our revenue is generated primarily from the sale of products and services. Product revenue consists of sales of our PacBio *RS* instrument and related consumables, and service and other revenue primarily consists of revenue earned from product maintenance agreements. Grant revenue reflects revenue from government grants that generally provide cost reimbursement for certain types of expenditures in return for research and development activities over a contractually defined period. Revenue from grants is recognized in the period during which the related costs are incurred, provided that the conditions under which the grants were provided have been met.

We recognize revenue when persuasive evidence of an arrangement exists, delivery has occurred or services have been rendered, the price is fixed or determinable, and collectability is reasonably assured. In instances where final acceptance of the product or system is required, revenue is deferred until all acceptance criteria have been met. Revenue for product sales is generally recognized upon customer acceptance. Revenue for product maintenance agreements is recognized when earned, which is generally ratably over the service period.

In order to assess whether the price is fixed or determinable, we evaluate whether refund rights exist. If refund rights exist or payment terms are based on future performance, we defer revenue recognition until the price becomes fixed or determinable. We assess collectability based on a number of factors, including customer creditworthiness. If we determine that collection of amounts due is not reasonably assured, revenue recognition is deferred until receipt of payment.

We regularly enter into contracts from which revenue is derived from multiple deliverables including a mix of products and or services. Revenue recognition for contracts with multiple deliverables is based on the individual units of accounting determined to exist in the contract. A delivered item is considered a separate unit of accounting when 1) the delivered item has value to the customer on a stand-alone basis; and 2) when a general right of return exists, the delivery or performance of an undelivered item is considered probable and under our control. Items are considered to have stand-alone value when they are sold separately by any vendor or when the customer could resell the item on a stand-alone basis. Our revenue arrangements generally do not have a general right of return. When a deliverable does not meet the criteria to be considered a separate unit of accounting, we group it with other deliverables that, when combined, meet the criteria, and the appropriate allocation of arrangement consideration and revenue recognition is determined. Consideration is allocated at the inception of the contract to all deliverables based on their relative selling price. In order to determine the relative selling price of a deliverable, we apply, in order, the following hierarchy: 1) vendor-specific objective evidence (VSOE); 2) third-party evidence if VSOE is not available; and 3) our best estimate of selling price for the deliverable if neither VSOE nor third-party evidence is available.

In order to establish VSOE, we must regularly sell the product or service on a standalone basis with a substantial majority of sales priced within a relatively narrow range. If an insufficient number of standalone sales exist and VSOE cannot be determined, we then consider whether third party evidence can be used to establish selling price. Due to the lack of similar products and services sold by other companies within our industry, we have not established selling price using third-party evidence. If neither VSOE nor third party evidence of selling price exists, we determine our best estimate of selling price using a combination of prices set by our pricing committee adjusted for applicable discounts and customer orders received to date.

Deferred revenue primarily represents product maintenance agreement revenue that is expected to be recognized over the related service period, generally one to three years.

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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.

Manufacturing overhead, comprised mainly of labor costs, is determined and capitalized into inventory based on management s estimate of normal manufacturing capacity. Normal capacity is the production level expected to be achieved over a number of periods under normal circumstances with available resources. Our current manufacturing volumes are below expected normal capacities, therefore manufacturing overhead incurred during the period exceeds the amounts absorbed into inventory and included in cost of revenue. As excess manufacturing resources are engaged in next generation product research and development, production of product used internally for R&D, and other R&D support activities, manufacturing costs in excess of amounts reflected in inventory and cost of revenue are expensed as a component of research and development expense during the period in which the expenses are incurred.

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 and support infrastructure necessary to support the installed customer base. As we are in the early stages of the commercial launch of our products, the capacity of our existing service infrastructure exceeds the number of installed customer instruments. Therefore, management has estimated the capacity of the existing service infrastructure and recognizes service related cost of revenue based on the installed base. As a result, total service infrastructure costs exceed the costs associated with the support of customer instruments and such excess costs are included as a component of sales, general and administrative expense.

Research and Development

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.

Leases

We categorize leases at their inception as either operating or capital leases. On certain of our lease agreements, we may receive tenant improvement allowances, rent holidays and other incentives. Rent expense is recorded on a straight-line basis over the term of the lease. The difference between rent expense recognized and amounts paid under the lease agreement is recorded as lease incentives in the balance sheets. Leasehold improvements are capitalized at cost and depreciated over the lesser of their expected useful life or the life of the lease. Tenant improvements afforded to us by landlord incentives are recorded as leasehold improvement assets with corresponding lease incentives liabilities.

For build-to-suit lease arrangements, we evaluate the extent of our financial and operational involvement in the tenant improvements to determine whether we are considered the owner of the construction project under GAAP. When we are considered the owner of a project, we record the shell of the facility at its fair value at the date construction commences with a corresponding facility financing obligation. Improvements to the facility during the construction project are capitalized and, to the extent funded by lessor afforded incentives, with corresponding increases to the facility financing obligation. Payments we make under leases in which we are considered the owner of the facility are allocated to land rental expense, based on the relative values of the land and building at the commencement of construction, reductions of the facility financing obligation and interest expense recognized on the outstanding obligation. As the build-out was completed in 2010, the activity in 2012 consisted solely of lease payments. To the extent gross future payments do not equal the recorded liability, the liability is settled upon return of the facility to the lessor. Any difference between the book value of the assets and remaining facility obligation are recorded in other expense, net. For existing arrangements, the differences are expected to be immaterial.

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Income Taxes

We account for income taxes under the asset and liability method, which requires, among other things, that deferred income taxes be provided for temporary differences between the tax basis of our assets and liabilities and the amounts reported in the financial statements. In addition, deferred tax assets are recorded for the future benefit of utilizing net operating losses and research and development credit carryforwards. A full valuation allowance is provided against our net deferred tax assets as it is more likely than not that the deferred tax assets will not be fully realized.

We review our positions taken relative to income taxes. To the extent our tax positions are more likely than not to result in the payout of additional taxes, we accrue the estimated amount of tax for such uncertain positions.

Stock-based Compensation

Stock-based compensation expense for all stock-based compensation awards is based on the grant date fair value estimated using the Black-Scholes option pricing model. We have limited historical information available to support the underlying estimates of certain assumptions required to value stock options. The expected term of options is estimated based on the simplified method. We do not have sufficient trading history to solely rely on the volatility of our own common stock for establishing expected volatility. Therefore, we based our expected volatility on the historical stock volatilities of our common stock as well as several comparable publicly listed companies over a period equal to the expected term of the options. The risk-free interest rate is based on the U.S. Treasury yield curve in effect at the time of grant for the expected term of the stock option. We estimate our forfeiture rate based on an analysis of our actual forfeitures and will continue to evaluate the adequacy of the forfeiture rate based on actual forfeiture experience, analysis of employee turnover behavior and other factors. The impact from a forfeiture rate adjustment will be recognized in full in the period of adjustment, and if the actual number of future forfeitures differs from that estimated, we may be required to record adjustments to stock-based compensation expense in future periods. We recognize compensation expense on a straight-line basis over the requisite service period. We have elected to use the simplified method to calculate the beginning pool of excess tax benefits.

We have employee and director stock option plans that are more fully described in Note 10.

Other Comprehensive Income (loss)

Other comprehensive income (loss) is comprised of unrealized gains (losses) on our investment securities.

Recent Accounting Pronouncements

In 2011 the FASB issued Accounting Standards Update No. 2011-04, to modify the definition of and requirements for measurement of and disclosure concerning fair value. We adopted this guidance beginning January 1, 2012. The adoption of this amendment had no impact on our financial position or results of operations.

In 2011 the FASB issued Accounting Standards Update No. 2011-05, requiring companies to present the components of OCI either in a single continuous statement of comprehensive income or in two separate but consecutive statements of net income and other comprehensive income. We adopted this guidance during the first quarter of 2012 and elected to disclose the OCI in a single continuous statement.

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3. Investments

The following table summarizes our investments as of December 31, 2012 and December 31, 2011 (in thousands):

	As of December 31, 2012			
	Amortized Cost	Gross unrealized gains	Gross unrealized losses	Fair Value
Cash and cash equivalents:				
Cash and money market funds	$ 11,847	$	$	$ 11,847
Commercial paper	34,690	3		34,693
Total cash and cash equivalents	46,537	3		46,540
Investments:				
Commercial paper	28,859	7		28,866
Corporate debt securities	13,190	13		13,203
Asset backed securities	954	1		955
Certificates of deposit	2,005	3		2,008
U.S. government and agency securities	9,005	3		9,008
Total investments	54,013	27		54,040
Total cash, cash equivalents and investments	$ 100,550	$ 30	$	$ 100,580

	As of December 31, 2011			
	Amortized Cost	Gross unrealized gains	Gross unrealized losses	Fair Value
Cash and cash equivalents:				
Cash and money market funds	$ 49,267	$	$	$ 49,267
Commercial paper	9,599		(1)	9,598
Total cash and cash equivalents	58,866		(1)	58,865
Investments:				
Commercial paper	29,767	5		29,772
Corporate debt securities	37,379	65	(57)	37,387
Asset backed securities	9,904	7	(2)	9,909
Certificates of deposit	4,026	9	(1)	4,034
U.S. government and agency securities	37,435	35	(3)	37,467
Total investments	118,511	121	(63)	118,569
Total cash, cash equivalents and investments	$ 177,377	$ 121	$ (64)	$ 177,434

4. Balance Sheet Components

Accounts Receivable:

As of December 31, 2012 and 2011, our accounts receivable, net consisted of the following components (in thousands):

	December 31,	
	2012	2011
Trade receivables	$ 2,008	$ 4,540
Related party receivables	814	17
Accounts receivable	$ 2,822	$ 4,557

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Related party receivables primarily relate to instrument and other products and services purchased by Stanford University.

Inventory:

As of December 31, 2012 and 2011, our inventory, net consisted of the following components (in thousands):

	December 31,	
	2012	2011
Purchased materials	$ 3,823	$ 5,273
Work in process	3,494	5,347
Finished goods	2,275	4,897
Inventory, net	$ 9,592	$ 15,517

Property and Equipment:

As of December 31, 2012 and 2011, our property and equipment, net consisted of the following components (in thousands):

	December 31,	
	2012	2011
Building	$ 1,160	$ 1,160
Laboratory equipment and machinery	16,856	15,664
Leasehold improvements	8,035	7,636
Computer equipment	3,681	3,450
Software	4,457	1,577
Furniture and fixtures	854	859
Construction in progress	47	3,222
	35,090	33,568
Less: Accumulated depreciation	(20,761)	(15,170)
Property and equipment, net	$ 14,329	$ 18,398

Depreciation expense during 2012, 2011 and 2010 was $6.6 million, $5.8 million and $5.2 million, respectively.

Software increased from $1.6 million as of December 31, 2011 to $4.5 million as of December 31, 2012, primarily due to enterprise-level business software that we purchased and customized to meet our specific operational needs being placed into service during 2012. The majority of these costs were capitalized as construction in progress as of December 31, 2011. Upon being placed in service, these costs are depreciated over an estimated useful life of 3 to 5 years.

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Accrued liabilities and other current liabilities:

As of December 31, 2012 and 2011, our accrued expenses and other current liabilities consisted of the following (in thousands):

	December 31, 2012	December 31, 2011
Salaries and benefits	$ 4,660	$ 5,284
Professional services	1,093	1,915
Short-term portion of deferred rent	941	844
Customer deposits	685	1,503
Other	825	712
Accrued expenses and other current liabilities	$ 8,204	$ 10,258

5. Facility Financing and Debt Obligations

Facility Financing Obligation

In December 2009 we entered into a lease agreement for a manufacturing and office facility. In order 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.

Based on the allocation of payments, the facility financing obligation bears an implied interest rate of 9.0%. During 2012 and 2011, we recognized $0.3 million and $0.3 million, respectively, of interest expense in our consolidated statement of operations relating to the facility financing obligation.

As of December 31, 2012, the future minimum payments due under the facility financing obligation were as follows (in thousands):

	Financing obligation
2013	$ 629
2014	648
2015	667
Total payments	1,944
Less discounts and interest	(1,309)
Total net payments under facility financing obligation	635
Property reverting to landlord	2,151
Present value of obligation	2,786
Less current portion of obligation	(173)
Long-term portion of obligation	$ 2,613

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6. Commitments and Contingencies

Operating Lease Commitment

As of December 31, 2012 we have noncancelable operating lease agreements for research and development, office, manufacturing and training facilities in Menlo Park, California that expire at various dates, with the latest expiration in December 2015. Our leases generally have an option to renew at rates approximating the prevailing fair market rental rate at the end of the lease term. As of December 31, 2012, the future annual minimum lease payments under all noncancelable operating leases with an initial term in excess of one year are as follows (in thousands):

Years ending December 31:	Amount
2013	$ 3,789
2014	3,860
2015	3,850
Total minimum lease payments	$ 11,499

Rent expense for 2012, 2011 and 2010, was $2.4 million, $2.8 million and $2.1 million, respectively. We are also required to pay our share of operating expenses with respect to the facilities in which we operate.

Other commitments include an estimated amount of approximately $7.9 million of all open cancellable purchase orders and contractual obligations that occur in the ordinary course of business, including commitments with suppliers, for which we have not received the goods or services.

Contingencies

We may become subject to claims and assessments from time to time in the ordinary course of business. We accrue liabilities for such matters when it is probable that future expenditures will be made and such expenditures can be reasonably estimated.

Three putative class action lawsuits were filed against us and certain of our officers and directors in the Superior Court of the State of California, County of San Mateo. These actions were brought on behalf of all persons or entities who purchased or otherwise acquired our common stock pursuant or traceable to our initial public offering (IPO) of common stock in October 2010. The claims were initiated between October 2011 and April 2012 and have since been consolidated as *In re Pacific Biosciences of California Inc. S holder Litig.*, Case No. CIV509210 (the State Court Action). The plaintiffs in the State Court Action allege violations of several provisions of the federal securities laws in connection with our August 16, 2010, registration statement (effective, as amended, on October 26, 2010) and seek, among other things, compensatory damages, rescission, and attorneys fees and costs on behalf of the putative class. The defendants in the State Court Action filed a motion to stay that lawsuit in deference to the *Primo* action pending in federal district court. On May 25, 2012, the Superior Court denied the defendants motion to stay. The defendants in the State Court Action also filed a demurrer to certain of the plaintiffs claims, which was sustained in part and overruled in part on October 16, 2012. On October 26, 2012, the plaintiffs in the State Court Action filed a First Amended Consolidated Class Action Complaint, which the defendants answered on November 13, 2012.

On or around December 12, 2012, the parties to the State Court Action reached an agreement on certain terms of a tentative settlement on behalf of the entire class of persons or entities that purchased our common stock between October 27, 2010, and September 20, 2011 (inclusive). On January 18, 2013, the parties in the State Court Action entered into a memorandum of understanding regarding the tentative settlement, which will not become effective until final approval is granted by the Superior Court. As of December 31, 2012, we have accrued for our best estimate to resolve this matter.

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On December 21, 2011, we and certain of our officers and directors were named in a putative class action lawsuit filed in United States District Court for the Northern District of California (*Primo v. Pacific Biosciences of California, Inc., et al.*, Case No. 4:11-CV-06599). On April 11, 2012, an amended complaint was filed in the *Primo* action, which added another plaintiff, Evan Powell. As amended, the complaint alleges violations of several provisions of the federal securities laws in connection with our August 16, 2010 registration statement (effective, as amended, on October 26, 2010), and by us and/or our employees during the class period. The complaint seeks, among other things, compensatory damages, rescission, and attorneys fees and costs on behalf of the putative class. On April 6, 2012, Mr. Primo was appointed lead plaintiff in the action. On July 31, 2012, the defendants moved to dismiss the *Primo* action in its entirety. A hearing on the defendants motion to dismiss was held on October 11, 2012. A decision on the motion to dismiss has not yet been issued.

On December 29, 2011, we were named as a nominal defendant, along with certain of our directors as individual defendants, in a purported shareholder derivative lawsuit filed in United States District Court for the Northern District of California (*Burlingame v. Martin et al.,* Case No. 4:11-CV-06703). The complaint alleges that the director defendants breached various fiduciary duties owed to us, engaged in waste of corporate assets, and were, as a result, unjustly enriched. The complaint seeks, among other things, restitution of director profits allegedly obtained as a result of the aforesaid conduct, improvement of our corporate governance procedures, and attorneys fees and costs. On February 28, 2012, the *Burlingame* action was related to the *Primo* action and transferred to the same judge hearing the *Primo* action. The parties in the *Burlingame* action have stipulated that no response to the complaint will be due until resolution of the motion to dismiss the *Primo* action.

Pursuant to Delaware law, we may have obligations, under certain circumstances, to hold harmless and indemnify each of our directors and certain officers, including those named in the actions, against judgments, fines, settlements and expenses related to claims arising against such directors and officers to the fullest extent permitted under Delaware law, our bylaws and certificate of incorporation. 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. Such obligations for indemnification may apply to these lawsuits. In addition, we may have obligations to hold harmless and indemnify each of the underwriters from our initial public offering and their respective affiliates, directors and officers against any and all losses, claims, damages and liabilities related to claims arising against such parties pursuant to the terms of the underwriting agreement between the underwriters and the Company.

We believe that the allegations in each of these pending actions are without merit and intend to vigorously contest the actions. However, there can be no assurance that we will be successful in our defense.

In addition, from time to time, we are a party to litigation and subject to claims incident to the ordinary course of business.

We cannot determine the ultimate outcome of these lawsuits. Except as noted above regarding the tentative settlement of the State Court Action, we cannot provide an estimate of the possible loss or possible range of loss associated with the resolution of these contingencies with certainty or confidence; therefore, except as noted above, we have not provided an estimate and we have not recorded a liability.

Indemnification

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 negligent acts or omissions, or willful misconduct, committed by us or any of our employees, agents or representatives. The term

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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.

Pursuant to Delaware law, we may have obligations, under certain circumstances, to hold harmless and indemnify each of our directors and certain officers against judgments, fines, settlements and expenses related to claims arising against such directors and officers to the fullest extent permitted under Delaware law, our bylaws and certificate of incorporation. We also enter and have entered into indemnification agreements with our directors and certain 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 fund raising 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 such third parties and the Company in connection with such fund raising efforts. To the extent that any such indemnification obligations apply to the lawsuits described above, any associated expenses incurred are included within the related accrued litigation expense amounts. No additional liability associated with such indemnification obligations has been recorded at December 31, 2012.

7. Litigation Settlements

During April 2012, we entered into a settlement agreement with Life Technologies Corporation to settle a complaint filed by Life Technologies Corporation seeking review of a patent interference decision of the U.S. Patent and Trademark Office. Additionally, during April 2012, we entered into a settlement and release agreement with Helicos Biosciences Corporation, or Helicos, and Arizona Science and Technology Enterprises LLC d/b/a Arizona Technology Enterprises, or AzTE, to resolve all existing patent litigation between the parties. The settlement terms with Helicos and AzTE also include other features such as worldwide, non-exclusive limited licenses for the Company to all patents owned by Helicos and the two asserted patents in-licensed by Helicos from AzTE in the field relevant to our current products, and a perpetual covenant not to sue. The Company determined the principal benefit of the settlement with Helicos and AzTE was the economic benefit of avoiding litigation expenses and that the value attributable to other settlement features was believed to be de minimis. No value was assigned to the licenses from Helicos and AzTE as we do not believe any of our current or future products would fall under any valid and enforceable claims in the licensed applications and patents.

We recorded a $1.8 million charge to selling, general and administrative expense during the first quarter of fiscal 2012. The payment of the $1.8 million was made during the six-month period ended June 30, 2012.

8. Income Taxes

A reconciliation between the statutory federal income tax and our effective tax rates as a percentage of loss before income taxes are as follows:

	Years Ended December 31,		
	2012	2011	2010
Statutory tax rate	35.0%	35.0%	35.0%
State tax rate, net of federal benefit	3.9	5.0	5.7
Stock-based compensation	(1.7)	(2.0)	(1.6)
Federal R&D credit	0.0	2.8	2.0
CA R&D credit	1.1	2.3	1.1
Other	(2.1)	0.0	(0.2)
Change in valuation allowance	(36.2)	(43.1)	(43.5)
Change of implied statutory tax rate to prior years	0.0	0.0	1.5
Effective income tax rate	0.0%	0.0%	0.0%

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Temporary differences and carryforwards that gave rise to significant portions of deferred taxes are as follows (in thousands):

	December 31,	
	2012	2011
Deferred tax assets:		
Net operating loss carryforwards	$ 186,906	$ 154,118
Research and development credits	18,883	17,814
Depreciation	2,736	2,708
Accruals and reserves	5,678	6,197
Total deferred tax assets	214,203	180,837
Less: Valuation allowance	(213,773)	(180,810)
Deferred tax liabilities:		
Deferred Rent	(430)	(27)
Net deferred tax assets	$	$

Due to uncertainties surrounding the realization of deferred tax assets through future taxable income, we have provided a full valuation allowance and, therefore, have not recognized any benefits from net operating losses and other deferred tax assets.

Recognition of deferred tax assets is appropriate when realization of such assets is more likely than not. Based upon the weight of available evidence, we believe it is more likely than not that the net deferred tax assets will not be fully realizable. Accordingly, we have provided a full valuation allowance against our net deferred tax assets as of December 31, 2012.

For the year ended December 31, 2012, the Company s valuation allowance increased to $213.8 million primarily because of an increase in deferred tax assets related to net operating losses, state research and development tax credits, and changes in accruals and reserves. For the year ended December 31, 2011, the Company s valuation allowance increased to $180.8 million primarily because of an increase in deferred tax assets related to net operating losses, federal and state research and development tax credits, and changes in accruals and reserves.

As of December 31, 2012, we had federal and state net operating loss carryforwards of approximately $476.4 million and $434.9 million, respectively, available to reduce future taxable income, if any. The federal net operating loss carryforward begins expiring in 2024, and the state net operating loss carryforward begins expiring in 2014.

We also had federal and California state research and development credit carryforwards of approximately $15.3 million and $18.0 million, respectively, as of December 31, 2012. The federal research and development credits begin expiring in 2024 if not utilized. The California tax research and development credits can be carried forward indefinitely.

Our 2012 tax provision did not include the benefit of the 2012 federal R&D credit. The federal R&D credit expired as of December 31, 2011. In January 2013, it was retroactively extended through the end of 2013. Under U.S. GAAP, the tax benefit of the 2012 federal R&D credit will be a discrete item in the first quarter of year 2013 when the reenactment occurred. However, due to the full valuation allowance, such additional deferred tax assets are expected to be fully offset.

Tax attributes related to stock option windfall deductions are not recorded until they result in a reduction of cash tax payable. Our federal and state net operating losses from windfall deductions were excluded from our

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deferred tax asset balance as of December 31, 2012. The benefit of the federal and state net operating loss deferred tax assets of $3.3 million and $0.5 million, respectively, will be recorded to additional paid-in capital when they reduce cash tax payable.

The Tax Reform Act of 1986 limits the use of net operating loss and tax credit carryforwards in certain situations where equity transactions result in a change of ownership as defined by Internal Revenue Code Section 382. In the event we experience an ownership change, utilization of our United States net operating loss and tax credit carryforwards could be limited.

As of December 31, 2012, our total unrecognized tax benefit was $10.0 million, of which none of the tax benefit, if recognized, would affect the effective income tax rate due to the valuation allowance that currently offsets deferred tax assets. We do not anticipate the total amount of unrecognized income tax benefits to significantly increase or decrease in the next 12 months.

A reconciliation of the beginning and ending unrecognized tax benefit accounts is as follows (in thousands):

Balance as of December 31, 2009	$ 3,937
Increase in balance related to tax positions taken in prior year	198
Increase in balance related to tax positions taken during current year	2,222
Balance as of December 31, 2010	6,357
Increase in balance related to tax positions taken in prior year	832
Increase in balance related to tax positions taken during current year	2,098
Balance as of December 31, 2011	9,287
Increase in balance related to tax positions taken in prior year	
Increase in balance related to tax positions taken during current year	705
Balance as of December 31, 2012	$ 9,992

Our practice is to recognize interest and/or penalties related to income tax matters in income tax expense. As of December 31, 2012 and 2011, we had no accrued interest or penalties due to our net operating losses available to offset any tax adjustment. We file U.S. federal and various state income tax returns. For U.S. federal and state income tax purposes, the statute of limitation currently remains open for the years ending December 31, 2009 to present and December 31, 2008 to present, respectively. In addition, all of the net operating losses and research and development credit carryforwards that may be utilized in future years may be subject to examination. We are not currently under examination by income tax authorities in any jurisdiction.

9. Stockholders Equity

Our Certificate of Incorporation, as amended and restated in October 2010 in connection with the closing of our IPO, authorizes us to issue 1,000,000,000 shares of $0.001 par value common stock and 50,000,000 shares of $0.001 par value preferred stock. As of December 31, 2012 and 2011, there were no shares of preferred stock issued or outstanding.

Common stockholders are entitled to dividends when and if declared by our board of directors. There have been no dividends declared to date. The holder of each share of common stock is entitled to one vote.

Stock Offering

In April 2012, we filed a shelf registration statement on Form S-3 with the SEC pursuant to which we may, from time to time, sell up to an aggregate of $150 million of our common stock, warrants or debt securities. On May 1, 2012, the registration statement was declared effective by the SEC, which will allow us to access the capital markets for the three year period following this effective date. On October 5, 2012, we entered into a

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Controlled Equity Offering Sales Agreement (the Sales Agreement) with Cantor Fitzgerald & Co. (Cantor) pursuant to which we may offer and sell, from time to time, through Cantor shares of our common stock having an aggregate offering price of up to $30.0 million through an at-the-market offering. We are not obligated to make any sales of shares under the Sales Agreement. We will pay Cantor a commission equal to 3% of the gross proceeds from the sale of shares of our common stock under the Sales Agreement and reimburse up to $50,000 of legal expenses incurred by Cantor. As of December 31, 2012, no shares of the Company s common stock had been sold under this Sales Agreement. We commenced selling shares on February 7, 2013 and as of March 12, 2013, we have sold in aggregate approximately 3.9 million shares resulting in net proceeds of approximately $8.6 million.

10. Stock-Based Compensation

Stock Option Plans

As of December 31, 2012, we had three active equity compensation plans, the 2010 Equity Incentive Plan, or 2010 Plan , the 2010 Outside Director Equity Incentive Plan, or 2010 Director Plan , and the 2010 Employee Stock Purchase Plan or ESPP all of which we adopted upon the effectiveness of our IPO during October 2010. Prior to the adoption of these plans, we granted options pursuant to the 2004 Equity Incentive Plan, through August 2005, and the 2005 Stock Plan, through October 2010. Upon termination of the predecessor plans, the shares available for grant at the time of termination, and shares subsequently returned to the plans upon forfeiture or option termination, were transferred to the successor plan in effect at the time of share return. We issue new shares of common stock upon exercise of stock options.

2010 Equity Incentive Plan

Stock options granted under the 2010 Plan may be either ISOs or NSOs. ISOs may be granted only to employees. NSOs may be granted to employees, consultants and directors. Stock options under the 2010 Plan may be granted with a term of up to ten years and at prices no less than the fair market value of our common stock on the date of grant. To date, stock options granted generally vest over four years and vest at a rate of 25% upon the first anniversary of the vesting commencement date and 1/48th per month thereafter. As of December 31, 2012 we had reserved 6.5 million shares of common stock for issuance under the 2010 Plan.

2010 Outside Director Equity Incentive Plan

Stock options granted under the 2010 Director Plan provide for the grant of NSOs. Stock options under the 2010 Plan may be granted with a term of up to ten years and at prices no less than the fair market value of our common stock on the date of grant. To date, stock options granted generally vest over one year on a monthly basis or three years at a rate of one-third upon the first anniversary of the vesting commencement date and 1/36th per month thereafter. As of December 31, 2012 we had reserved 1.0 million shares of common stock for issuance under the 2010 Director Plan.

2010 Employee Stock Purchase Plan

We adopted the ESPP in October 2010 under which 0.4 million shares of our common stock have been reserved for issuance as of December 31, 2012. Our ESPP permits eligible employees to purchase common stock at a discount through payroll deductions during defined offering periods. Each offering period will generally consist of four purchase periods, each purchase period being approximately six months. The price at which the stock is purchased is equal to the lower of 85% of the fair market value of the common stock at the beginning of an offering period or at the end of a purchase period. Each offering period will generally end and the shares will be purchased twice yearly on March 1 and September 1.

We issue new shares of common stock upon the purchase of shares under the plan.

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Stock Options

The following table summarizes stock option activity for all stock option plans for the year ended December 31, 2012 (in thousands, except per share amounts):

		Common Stock Options Outstanding		
	Shares available for grant	Number of shares	Exercise price	Weighted average exercise price
Balances, December 31, 2011	1,441	10,522	$ 0.20 16.00	$ 6.69
Additional shares reserved	3,298			
Options granted	(4,720)	4,720	$ 1.16 4.79	$ 3.13
Options exercised		(373)	$ 0.20 3.86	$ 1.52
Options canceled	2,853	(2,853)	$ 0.26 16.00	$ 7.03
Balances, December 31, 2012	2,872	12,016	$ 0.20 16.00	$ 5.37

On January 1, 2013, an additional 2.8 million shares were reserved under the 2010 Equity Incentive Plan and 0.6 million shares were reserved under the 2010 Outside Director Equity Incentive Plan.

The following table summarizes information with respect to stock options outstanding and exercisable under the plans at December 31, 2012 (dollars in thousands, except per share values):

	Options Outstanding			Options Exercisable	
Exercise price	Number outstanding	Weighted average remaining contractual life (Years)	Weighted average exercise price	Number vested	Weighted average exercise price
$0.00 1.00	287,591	2.61	$ 0.60	287,591	$ 0.60
$1.01 1.70	1,171,115	9.87	$ 1.18		$
$1.71 2.50	1,110,736	7.21	$ 1.96	595,330	$ 1.94
$2.51 3.00	331,458	5.43	$ 2.53	316,299	$ 2.52
$3.01 4.00	3,184,050	8.85	$ 3.23	532,983	$ 3.39
$4.01 6.00	2,099,204	8.71	$ 4.93	295,177	$ 5.64
$6.01 10.00	1,936,780	6.63	$ 7.97	1,515,966	$ 7.91
$10.01 16.00	1,894,809	7.91	$ 12.59	983,230	$ 12.54
	12,015,743		$ 5.37	4,526,576	$ 6.61

The aggregate intrinsic value of the outstanding and exercisable options presented in the table above totaled $0.9 million and $0.3 million, respectively. The aggregate intrinsic value represents the total pretax intrinsic value (i.e., the difference between $1.70, our closing stock price on the last trading day of our fourth quarter of 2012 and the exercise price, multiplied by the number of in-the-money options) that would have been received by the option holders had all option holders exercised their options on December 31, 2012. The amount changes based on the fair market value of the Company s common stock. The weighted average remaining contractual life for exercisable options is 6.5 years.

The total intrinsic value of options exercised during the years ended December 31, 2012, 2011 and 2010 was $0.7 million, $11.0 million and $6.0 million, respectively.

Options Granted to Non-employees

During the years ended December 31, 2011 and 2010 we granted options to purchase 60,000 and 12,750 shares of common stock, respectively, to non-employees at exercise prices ranging from $3.30 to $13.50 per share.

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Stock-based compensation expense will fluctuate as the estimated fair value of the common stock fluctuates over the vesting period. In connection with the grant of stock options to non-employees, we recognized stock-based compensation expense of $0.1 million, $0.2 million and $1.0 million, for the years ended December 31, 2012, 2011 and 2010, respectively.

Stock-based compensation expense related to stock options granted to non-employees is recognized as the stock options are earned. We believe that the estimated fair value of the stock options is more readily measurable than the fair value of the services rendered. The fair value of the stock options granted to non-employees is calculated at each reporting date using the Black-Scholes option pricing model.

Stock-based Compensation

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

	Years Ended December 31,		
	2012	2011	2010
Cost of revenue	$ 506	$ 490	$
Research and development	4,562	5,882	5,733
Sales, general and administrative	4,637	6,012	3,112
Total stock-based compensation expense	$ 9,705	$ 12,384	$ 8,845

The tax benefit of stock-based compensation expense was immaterial for the fiscal years ended December 31, 2012, 2011 and 2010. The Black-Scholes option pricing model is used to estimate the fair value of stock options granted under the Company s stock-based compensation plans and rights to acquire stock granted under the Company s ESPP. The weighted average estimated fair values of the stock options and rights to acquire stock granted under the Company s ESPP as well as the weighted average assumptions used in calculating these values during the years ended December 31, 2012, 2011 and 2010, were based on estimates at the date of grant as follows:

	Years ended December 31,		
	2012	2011	2010
Stock Option Plans			
Expected term (years)	6.1 years	6.1 years	6.0 years
Expected volatility	63.4%	62.3%	50.6%
Risk-free interest rate	1.0%	1.5%	2.3%
Dividend yield	0%	0%	0%
Weighted average fair value at grant date	$ 1.84	$ 3.33	$ 5.49
Total stock-based compensation expense (in thousands)	$ 6,865	$ 9,424	$ 8,266
ESPP			
Expected term range (years)	0.5 -2.0	0.5 -2.0	1.3
Expected volatility	90%	73%	55%
Risk-free interest rate	0.2%	0.2%	0.3%
Dividend yield	0%	0%	0%
Weighted average fair value at grant date	$ 1.38	$ 3.54	$ 6.34
Total stock-based compensation expense (in thousands)	$ 2,840	$ 2,960	$ 579

Stock Option Plans As of December 31, 2012 there was unrecognized compensation costs of $19.4 million related to these stock options. We expect to recognize those costs over a weighted-average period of 2.9 years as of December 31, 2012. Future option grants will increase the amount of compensation expense to be recorded in those future periods. Cash received from option exercises for the years ended December 31, 2012, 2011 and 2010 was $0.6 million, $4.3 million and $1.7 million, respectively.

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Employee Stock Purchase Plan For the years ended December 31, 2012 and 2011, 832,878 and 620,424 shares of common stock were purchased under the Plan, respectively. Cash received from ESPP for the years ended December 31, 2012 and 2011 was $2.1 million, and $3.4 million, respectively. No shares of common stock were purchased under the Plan in 2010.

Fair value of common stock granted prior to September 2010 The fair values of the common stock underlying stock options granted through September 2010 were estimated by our board of directors, which intended all options granted to be exercisable at a price per share not less than the per share fair value of our common stock underlying those options on the date of grant. The fair value of the shares of common stock underlying the stock options has historically been the responsibility of and determined by our board of directors. Because there has been no public market for our common stock, our board of directors has determined fair value of the common stock at the time of grant of the option by considering a number of objective and subjective factors including independent third-party valuations of our common stock, sales of convertible preferred stock to unrelated third parties, operating and financial performance, the lack of liquidity of capital stock and general and industry specific economic outlook, amongst other factors. The fair value of the underlying common stock shall be determined by our board of directors until such time as our common stock is listed on an established stock exchange or national market system.

Our common stock became publicly listed upon our IPO at which time options granted are issued at a price equal to the closing price on the date of grant.

11. Net Loss Per Share

The following table presents the computation of basic and diluted net loss per share (in thousands, except per share values):

	Years Ended December 31,		
	2012	**2011**	**2010**
Net loss per share:			
Numerator			
Net loss	$ (94,465)	$ (109,388)	$ (140,166)
Denominator:			
Weighted average shares of common stock outstanding	55,733	53,874	10,024
Less: Shares of common stock subject to repurchase			(86)
Weighted average shares used in computation of basic and diluted net loss per share	55,733	53,874	9,938
Basic and diluted net loss per share	$ (1.69)	$ (2.03)	$ (14.10)

The following options outstanding, common stock subject to repurchase, and warrants to purchase common stock were excluded from the computation of diluted net loss per share for the periods presented because the effect of including such shares would have been antidilutive in the periods presented:

	Years Ended December 31, (in thousands)		
	2012	**2011**	**2010**
Options outstanding	12,016	10,522	9,813
Common Stock subject to repurchase			169
Warrants to purchase Common Stock	10	10	10

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12. Segment and Geographic Information

The Company is organized as, and operates in, one reportable segment: the development, manufacturing and marketing of an integrated platform for genetic analysis. The Company s chief operating decision-maker is its Chief Executive Officer. The Chief Executive Officer reviews financial information presented on a consolidated basis for purposes of evaluating financial performance and allocating resources, accompanied by information about revenue by geographic regions. The Company s assets are primarily located in the United States of America and not allocated to any specific region and it does not measure the performance of its geographic regions based upon asset-based metrics. Therefore, geographic information is presented only for revenue. Revenue by geographic region is based on the ship to address on the customer order.

Revenue in 2012 from the United States of America, Europe and Asia (predominantly Japan) was $11.4 million, $6.6 million and $8.0 million, respectively, for a total of $26.0 million. Revenue in 2011 from the United States of America, Europe and Asia was $27.6 million, $5.1 million and $1.2 million, respectively, for a total of $33.9 million. Revenue for 2010 of $1.7 million was based in the United States of America.

13. Restructuring

During September 2011, we implemented a workforce reduction of approximately 130 employees, or 28% of our workforce. The actions taken were in consideration of uncertainties associated with the economic environment and to position the Company for long-term success. The costs associated with this restructuring consisted of termination benefits of approximately $4.9 million, of which $3.5 million is included in research and development expense and $1.4 million is included in sales, general and administrative expense for the year ended December 31, 2011.

A summary of the Company s restructuring expense and accrued restructuring liability as of December 31, 2011 and December 31, 2012 is as follows (in thousands):

	Expense for Year Ended December 31, 2011	Balance January 1, 2011	Accrued	Paid	Balance December 31, 2011
Salaries and benefits	$ 4,592	$	$ 4,592	$ (4,426)	$ 166
Administrative	347		347	(347)	
Total Restructuring	$ 4,939	$	$ 4,939	$ (4,773)	$ 166

No additional restructuring expenses were recorded or accrued during the year ended December 31, 2012 and the accrued restructuring balance as of December 31, 2012 is zero, as all related amounts were settled or paid. With respect to our workforce reduction, we do not expect to incur further restructuring charges.

14. Subsequent Event

On February 5, 2013, we entered into a Facility Agreement (the Facility Agreement) with entities affiliated with Deerfield Management Company, L.P. (collectively, Deerfield), pursuant to which Deerfield agreed to provide $20.5 million in funding to us (the Facility). Under the terms of the Facility Agreement, we issued to Deerfield 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. 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 has a maximum term of seven years from the date of the Facility Agreement. The Facility Agreement provides for an early repayment of principal in the event we have Net Sales (as defined in the Facility Agreement) of less than $41 million for the twelve-month period from the beginning of the second calendar

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quarter of 2014 through the first calendar quarter of 2015 (the Milestone). If the Milestone is not achieved, at Deerfield s option, one-third of the original principal balance of the Facility will become due, on each of the third, fourth and fifth anniversaries of the date of the Facility Agreement.

From and after 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, we shall apply 25% of the net proceeds from any financing that includes an equity component, including without limitation, the sale or issuance of our common stock (the Common Stock), options, warrants or other securities convertible or exchangeable for shares of Common Stock, to the payment of the Notes. This right is subject to certain exceptions set forth in the Facility Agreement, including that the right will not apply until we have issued 15,000,000 shares (as adjusted for any stock split or reverse stock split) of our Common Stock or rights to acquire our capital stock following the date of the Facility Agreement.

Deerfield has 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 may become immediately due and payable upon an Event of Default, as defined in the Facility Agreement, in which case Deerfield 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 Facility at our option.

The Facility Agreement also contains various representations and warranties, and affirmative and negative covenants, customary for financings of this type, including restrictions on the ability of the Company and its subsidiaries to incur additional indebtedness or liens on its assets, except as permitted under the Facility Agreement. In addition, we are required 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 and interests in property.

In connection with the execution of the Facility Agreement, on February 5, 2013, we issued to Deerfield warrants to purchase an aggregate of 5,500,000 shares of Common Stock immediately exercisable at an exercise price initially equal to $2.63 (the Warrants). The number of shares of Common Stock into which the Warrants are exercisable and the exercise price will be adjusted to reflect any stock splits, payment of stock dividends, recapitalizations, reclassifications or other similar adjustments in the number of outstanding shares of Common Stock. The exercise price may also be adjusted to reflect certain dividends or other distributions, including distributions of stock or other securities, property or options by way of a dividend, spin off, reclassification, corporate rearrangement, scheme of arrangement or similar transaction.

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Selected Quarterly Financial Data

(unaudited)

	Fiscal 2012 Quarter Ended			
(In thousands, except per share data)	**March 31,**	**June 30,**	**September 30,**	**December 31,**
Total revenue	$ 10,038	$ 7,291	$ 2,776	$ 5,878
Total gross profit (loss)	(152)	275	190	627
Total operating expenses	27,358	22,830	22,769	22,321
Loss from operations	(27,510)	(22,555)	(22,579)	(21,694)
Net loss	(27,580)	(22,487)	(22,729)	(21,669)
Basic and diluted net loss per share of Common Stock	$ (0.50)	$ (0.40)	$ (0.41)	$ (0.39)

	Fiscal 2011 Quarter Ended			
	March 31,	**June 30,**	**September 30,**	**December 31,**
Total revenue	$ 270	$ 10,630	$ 10,519	$ 12,444
Total gross profit	270	7,899	3,328	1,537
Total operating expenses	35,237	30,562	32,765	24,226
Loss from operations	(34,967)	(22,663)	(29,437)	(22,689)
Net loss	(34,809)	(22,475)	(29,281)	(22,823)
Basic and diluted net loss per share of Common Stock	$ (0.66)	$ (0.42)	$ (0.54)	$ (0.42)

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ITEM 9. CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE.

On June 16, 2011, our Audit Committee approved the selection of Ernst & Young LLP (E&Y) to serve as our independent registered public accounting firm. There have been no disagreements with our former accountants on accounting and financial disclosure. For further information, please refer to our form 8-K filed with the SEC on June 21, 2011.

ITEM 9A. CONTROLS AND PROCEDURES.

Evaluation of Disclosure Controls and Procedures

Our management, with the participation of our chief executive officer, our chief financial officer and our principal accounting 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 Annual Report on Form 10 K. Based on this evaluation, our chief executive officer, chief financial officer and our principal accounting officer concluded that our disclosure controls and procedures were effective as of the end of the period covered by this report.

Management s Report on Internal Control Over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting, as such term is defined in Exchange Act Rules 13a 15(f) and 15d 15(f). Under the supervision of our Chief Executive Officer, Chief Financial Officer and Principal Accounting Officer and with the participation of our management, we conducted an evaluation of the effectiveness of our internal control over financial reporting as of December 31, 2012 based on the framework in Internal Control Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). Based on that evaluation, our management concluded that our internal control over financial reporting was effective as of December 31, 2012.

Changes in Internal Control Over Financial Reporting

There were no changes in our internal control over financial reporting identified in connection with the valuation required by paragraph (d) of Exchange Act Rules 13a 15 or 15d 15 that occurred during our fourth fiscal quarter that have materially affected or are reasonably likely to materially affect, our internal control over financial reporting.

The effectiveness of our internal control over financial reporting as of December 31, 2012, has been audited by Ernst &Young LLP, our independent registered public accounting firm, as stated in their report which is included as follows.

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REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Board of Directors and Stockholders of Pacific Biosciences of California, Inc.

We have audited Pacific Biosciences of California, Inc. s internal control over financial reporting as of December 31, 2012, based on criteria established in Internal Control Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (the COSO criteria). Pacific Biosciences of California, Inc. s management is responsible for maintaining effective internal control over financial reporting, and for its assessment of the effectiveness of internal control over financial reporting included in the accompanying Management s Report on Internal Control Over Financial Reporting. Our responsibility is to express an opinion on the company s internal control over financial reporting based on our audit.

We conducted our audit in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects. Our audit included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, testing and evaluating the design and operating effectiveness of internal control based on the assessed risk, and performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

A company s internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company s internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company s assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

In our opinion, Pacific Biosciences of California, Inc. maintained, in all material respects, effective internal control over financial reporting as of December 31, 2012, based on the COSO criteria.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), the consolidated balance sheets of Pacific Biosciences of California, Inc. as of December 31, 2012 and 2011, and the related consolidated statements of operations and comprehensive loss, stockholders equity (deficit), and cash flows for each of the two years in the period ended December 31, 2012 of Pacific Biosciences of California, Inc. and our report dated March 15, 2013 expressed an unqualified opinion thereon.

/s/ Ernst & Young LLP

Redwood City, California

March 15, 2013

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ITEM 9B. OTHER INFORMATION

None.

PART III

ITEM 10. DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE.

Information responsive to this item is incorporated herein by reference to our definitive proxy statement with respect to our 2013 Annual Meeting of Stockholders to be filed with the SEC within 120 days after the end of the fiscal year covered by this Annual Report on Form 10-K.

ITEM 11. EXECUTIVE COMPENSATION.

Information responsive to this item is incorporated herein by reference to our definitive proxy statement with respect to our 2013 Annual Meeting of Stockholder Shareholders to be filed with the SEC within 120 days after the end of the fiscal year covered by this Annual Report on Form 10-K.

ITEM 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDER MATTERS.

Information responsive to this item is incorporated herein by reference to our definitive proxy statement with respect to our 2013 Annual Meeting of Stockholders to be filed with the SEC within 120 days after the end of the fiscal year covered by this Annual Report on Form 10-K.

ITEM 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS, AND DIRECTOR INDEPENDENCE.

Information responsive to this item is incorporated herein by reference to our definitive proxy statement with respect to our 2013 Annual Meeting of Stockholders to be filed with the SEC within 120 days after the end of the fiscal year covered by this Annual Report on Form 10-K.

ITEM 14. PRINCIPAL ACCOUNTING FEES AND SERVICES.

Information responsive to this item is incorporated herein by reference to our definitive proxy statement with respect to our 2013 Annual Meeting of Stockholders to be filed with the SEC within 120 days after the end of the fiscal year covered by this Annual Report on Form 10-K.

PART IV

ITEM 15. EXHIBITS, FINANCIAL STATEMENT SCHEDULES.

(a) The following documents are filed as part of, or incorporated by reference into, this Annual Report on Form 10-K:

1. *Financial Statements*: See Index to Consolidated Financial Statements under Item 8 of this Annual Report on Form 10-K.

2. *Financial Statement Schedules*: All schedules are omitted because they are not required, are not applicable or the information is included in the consolidated financial statements or notes thereto.

3. *Exhibits*: We have filed, or incorporated by reference into this Annual Report on Form 10-K, the exhibits listed on the accompanying Exhibit Index immediately following the signature page of this Annual Report on Form 10-K.

(b) Exhibits: See Item 15(a)(3), above.

(c) Financial Statement Schedules: See Item 15(a)(2), above.

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Signatures

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the registrant has duly caused this Annual Report on Form 10-K to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of Menlo Park, State of California, on March 15, 2013.

PACIFIC BIOSCIENCES OF CALIFORNIA, INC.

By: /s/ SUSAN K. BARNES
Susan K. Barnes

Executive Vice President and Chief Financial Officer

POWER OF ATTORNEY

KNOW ALL PERSONS BY THESE PRESENTS, that each person whose signature appears below hereby constitutes and appoints Michael Hunkapiller, Susan K. Barnes and Brian B. Dow, and each of them, his or her true and lawful attorney-in-fact and agent, with full power of substitution, each with power to act alone, to sign and execute on behalf of the undersigned any and all amendments to this Annual Report on Form 10-K, and to perform any acts necessary in order to file the same, with all exhibits thereto and other documents in connection therewith with the Securities and Exchange Commission, granting unto said attorney-in-fact and agent full power and authority to do and perform each and every act and thing requested and necessary to be done in connection therewith, as fully to all intents and purposes as he might or could do in person, hereby ratifying and confirming all that said attorney-in-fact and agent, or their or his or her substitutes, shall do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Act of 1933, this report has been signed by the following persons in the capacities indicated below:

Signature	Title	Date
/s/ Michael Hunkapiller Michael Hunkapiller	Executive Chairman, Chief Executive Officer and President	March 15, 2013
/s/ Susan K. Barnes Susan K. Barnes	Executive Vice President and Chief Financial Officer	March 15, 2013
/s/ Brian B. Dow Brian B. Dow	Vice President, Finance and Principal Accounting Officer	March 15, 2013
/s/ David Botstein David Botstein	Director	March 15, 2013
/s/ Brook Byers Brook Byers	Director	March 15, 2013
/s/ William W. Ericson	Director	March 15, 2013

William W. Ericson

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Signature	Title	Date
/s/ Randall S. Livingston Randall S. Livingston	Director	March 15, 2013
/s/ Marshall L. Mohr Marshall L. Mohr	Director	March 15, 2013
/s/ Lucy Shapiro Lucy Shapiro	Director	March 15, 2013
/s/ Susan Siegel Susan Siegel	Director	March 15, 2013
/s/ David B. Singer David B. Singer	Director	March 15, 2013

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Exhibit Index

Exhibit Number	Description	Incorporated by reference herein		
		Form	Exhibit No.	Filing Date
3.1	Amended and Restated Certificate of Incorporation	10-K	3.1	March 23, 2011
3.1	Amended and Restated Bylaws	10-K	3.2	March 23, 2011
4.1	Specimen Common Stock Certificate	S-1/A	4.1	October 1, 2010
4.2	Fifth Amended and Restated Investor Rights Agreement, dated June 16, 2010	S-1	4.2	August 16, 2010
4.3	Form of Warrant to purchase shares of common stock of Pacific Biosciences of California, Inc.	8-K	4.1	February 5, 2013
10.1+	Form of Director and Executive Officer Indemnification Agreement	S-1	10.1	August 16, 2010
10.2+	2004 Equity Incentive Plan and forms of agreement thereunder	S-1	10.2	August 16, 2010
10.3+	2005 Stock Plan and forms of option agreements thereunder	S-1	10.3	August 16, 2010
10.4+	2010 Equity Incentive Plan and forms of option agreements thereunder	S-1	10.4	August 16, 2010
10.5+	2010 Employee Stock Purchase Plan and forms of agreement thereunder	S-1	10.5	August 16, 2010
10.6+	2010 Outside Director Equity Incentive Plan and forms of agreement thereunder	S-1	10.6	August 16, 2010
10.7	Collaboration Agreement by and between the Registrant and Gen-Probe Incorporated, dated as of June 15, 2010	S-1/A	10.7	October 22, 2010
10.8	Exclusive License Agreement by and between the Registrant and Cornell Research Foundation, Inc., dated as of February 1, 2004	S-1/A	10.8	October 22, 2010
10.9	License Agreement by and between the Registrant and GE Healthcare Bio-Sciences Corp., dated as of September 11, 2006	S-1/A	10.9	October 22, 2010
10.10	Exclusive License Agreement by and between the Registrant and Indiana University Research and Technology Corporation, dated May 15, 2005	S-1/A	10.10	October 19, 2010
10.11	Amended and Restated Lease Agreement by and between the Registrant and Menlo Business Park, LLC, dated as of December 17, 2007	S-1	10.11	August 16, 2010
10.12	Lease Agreement by and between the Registrant and Menlo Business Park LLC, dated August 14, 2009	S-1	10.12	August 16, 2010
10.13	Industrial Lease Agreement by and between the Registrant and AMB Property, L.P., dated December 10, 2009	S-1	10.13	August 16, 2010

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Exhibit Number	Description	Incorporated by reference herein		
		Form	Exhibit No.	Filing Date
10.14	Third Amendment to the December 10, 2009 Industrial Lease by and between the Registrant and AMB Property, L.P. dated December 29, 2010	10-K	10.14	March 23, 2011
10.15	Industrial Lease Agreement by and between the Registrant and AMB Property, L.P., dated September 24, 2009	S-1	10.14	August 16, 2010
10.16	Third Amendment to the September 24, 2009 Industrial Lease by and between the Registrant and AMB Property, L.P. dated December 29, 2010	10-K	10.16	March 23, 2011
10.17	First Amendment to the September 24, 2009 Industrial Lease Agreement by and between the Registrant and AMB Property, L.P., dated as of May 19, 2010	S-1	10.15	August 16, 2010
10.18	Industrial Lease Agreement by and between the Registrant and AMB Property, L.P., dated February 8, 2010	S-1	10.16	August 16, 2010
10.19	First Amendment to the February 8, 2010 Industrial Lease by and between the Registrant and AMB Property, L.P. dated December 29, 2010	10-K	10.19	March 23, 2011
10.20	Lease by and between the Registrant and Willow Park Holding Company I, L.P. dated December 17, 2010	10-K	10.20	March 23, 2011
10.21	Lease by and between the Registrant and AMB Property, L.P. dated December 17, 2010	10-K	10.21	March 23, 2011
10.22	Lease by and between the Registrant and Willow Park Holding Company II, L.P. dated December 17, 2010	10-K	10.21	March 23, 2011
10.23+	Employment Agreement by and between the registrant and Hugh Martin effective September 16, 2010	S-1/A	10.17	September 20, 2010
10.24+	Change in Control Severance Agreement by and between the registrant and Hugh Martin effective September 16, 2010	S-1/A	10.18	September 20, 2010
10.25+	Letter Relating to Employment Terms by and between the registrant and Susan K. Barnes effective September 15, 2010	S-1/A	10.19	September 20, 2010
10.26+	Change in Control Severance Agreement by and between the registrant and Susan K. Barnes effective September 9, 2010	S-1/A	10.20	September 20, 2010
10.27+	Letter Relating to Employment Terms by and between the registrant and Stephen Turner effective September 15, 2010	S-1/A	10.21	September 20, 2010
10.28+	Change in Control Severance Agreement by and between the registrant and Stephen Turner effective September 9, 2010	S-1/A	10.22	September 20, 2010

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Exhibit Number	Description	Incorporated by reference herein		
		Form	Exhibit No.	Filing Date
10.29+	Letter Relating to Employment Terms by and between the registrant and James Michael Phillips effective September 15, 2010	S-1/A	10.23	September 20, 2010
10.30+	Change in Control Severance Agreement by and between the registrant and James Michael Phillips effective September 9, 2010	S-1/A	10.24	September 20, 2010
10.31+	Separation Agreement and Release by and between the registrant and Hugh Martin dated January 10, 2012	10-K	10.31	March 1, 2012
10.32+	Employment Agreement by and between the registrant and Michael Hunkapiller dated January 5, 2012	10-K	10.32	March 1, 2012
10.33+	Change in Control Severance Agreement by and between the registrant and Michael Hunkapiller dated January 5, 2012	10-K	10.33	March 1, 2012
10.34+	Change in Control Severance Agreement by and between the registrant and Michael Glynn effective August 31, 2011	10-K	10.34	March 1, 2012
10.35	Controlled Equity Offering Sales Agreement, dated October 5, 2012, by and between the registrant and Cantor Fitzgerald & Co.	8-K	10.1	October 5, 2012
10.36+	Letter Agreement between the registrant and Michael Hunkapiller, dated December 14, 2012	8-K	10.1	December 14, 2012
10.37+	Letter Agreement between the registrant and Susan K. Barnes, dated December 14, 2012	8-K	10.2	December 14, 2012
10.38	Facility Agreement, dated February 5, 2013 by and among Pacific Biosciences of California, Inc. and the entities listed on the signature pages thereof.	8-K	10.1	February 5, 2013
10.40	Security Agreement, dated February 5, 2013 by and among Pacific Biosciences of California, Inc. and the entities listed on the signature pages thereof.	8-K	10.3	February 5, 2013
12.1	Computation of Ratio of Earnings to Fixed Charges			
16.1	Letter from PricewaterhouseCoopers LLP, dated June 16, 2011, regarding the change in independent registered public accounting firm.	8-K	16.1	June 21, 2011
23.1	Consent of Ernst & Young LLP, Independent Registered Public Accounting Firm			
23.2	Consent of PricewaterhouseCoopers LLP, Independent Registered Public Accounting Firm			
31.1	Certification of Chief Executive Officer pursuant to Exchange Act Rules 13a-14(a) and 15d-14(a), as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002			

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Exhibit Number	Description	Incorporated by reference herein		
		Form	Exhibit No.	Filing Date
31.2	Certification of Chief Financial Officer pursuant to Exchange Act Rules 13a-14(a) and 15d-14(a), as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002			
32.1	Certification of Chief Executive Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002			
32.2	Certification of Chief Financial Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002			
101.INS	XBRL Instance Document			
101.SCH	XBRL Taxonomy Extension Schema Document			
101.CAL	XBRL Taxonomy Calculation Linkbase Document			
101.DEF	XBRL Taxonomy Definition Linkbase Document			
101.LAB	XBRL Taxonomy Label Linkbase Document			
101.PRE	XBRL Taxonomy Extension Presentation Linkbase Document			

+ Indicates management contract or compensatory plan
Confidential treatment has been requested for portions of this exhibit. These portions have been omitted from this Registration Statement and have been filed separately with the Securities and Exchange Commission.