UNITED STATES
SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

Form 10-K

(Mark One)

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

For the fiscal year ended December 31, 2011

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 ☒

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 ☒

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes ☒ No ☐

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes ☒ No ☐

Indicate by check mark 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. ☒

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	☒
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 ☒

Aggregate market value of registrant's common stock held by non-affiliates of the registrant, based upon the closing price of a share of the registrant's common stock on June 30, 2011 as reported by the NASDAQ Global Select Market on that date: $431,640,000

Number of shares outstanding of the issuer's common stock as of February 17, 2012: 55,064,117

DOCUMENTS INCORPORATED BY REFERENCE:

Portions of the registrant's definitive Proxy Statement relating to its 2012 Annual Meeting of Stockholders to be held on June 13, 2012 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.

Pacific Biosciences of California, Inc.
Annual Report on Form 10-K

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, our expectation regarding a significant increase in product related cost during 2012, 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 similar expressions and the negatives of those terms. Forward-looking statements involve known and unknown risks, uncertainties and other factors that may cause our actual results, performance or achievements to be materially different from any future results, performance or achievements expressed or implied by the forward-looking statements. 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.

PART I

ITEM 1. BUSINESS

Overview

We develop, manufacture and market an integrated platform for genetic analysis. We have developed a technology to study the synthesis and regulation of DNA. Combining recent 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 using our proprietary SMRT technology, the PacBio *RS*. 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. We began commercial shipments of PacBio *RS* instruments in April 2011.

We were 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 the 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 the RNA polymerase converts the DNA strand base for base into messenger RNA, or mRNA. The mRNA 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.

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 additional 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 RNA, dozens of chemical modifications play important roles in cellular function.

Another source of complexity derives from the processing of RNA molecules after being transcribed from the genome. The majority of all genes have different forms of the 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 new tools 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 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 re-assembly. The first step of sample preparation is to break the target genome into multiple small fragments. Depending on the amount of sample DNA, the resulting fragments may be amplified into multiple copies 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 re-assembly 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 reassemble the genome.

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 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, usually 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 platform SMRT technology 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.

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 replicate 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 DNA polymerase 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. Within each ZMW, a single DNA polymerase molecule is anchored to the bottom of the glass surface of the ZMW 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 are dark. Only when they diffuse through 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 loaded with a different strand of DNA sample. 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.

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.

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 is designed to produce a distribution of readlengths with greater than 2,500 base pairs on average and instances of over 13,000 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.
- ***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 minutes of instrument time, with target polymerase speeds of one 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 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.
- ***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. 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 initial products have demonstrated issues we believe are typical of new, highly complex technology products. Although we are continuously improving reliability of our products, these issues may persist.

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 and restriction enzymes. 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.

Market Opportunity

The market for sequencing products is large and is expected to grow significantly. According to a study performed by Frost & Sullivan, a global market research and consulting firm, the worldwide Next Generation Sequencing market, which encompasses sales of second generation and third generation sequencing products, is expected to grow from $746 million in 2010 to $3 billion in 2017.

Historically, improvements in tools have driven growth in demand. We believe the emergence of third generation sequencing products, including our products, along with improvements in existing second generation products, will contribute to and comprise an important facet of this growth.

There are a number of emerging markets for sequencing-based tests, including molecular diagnostics, which represent significant potential opportunities for our products. For example, the market for sequence-based molecular diagnostics is estimated to be $1.6 billion in 2014 according to Scientia Advisors, a life sciences consulting firm. The development of these markets are subject to the variability driven by ongoing changes in the competitive landscape, 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. We operate and compete within these emerging markets and 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 most of the limitations in current sequencing technologies and enable a wide range of experiments and 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* Whole Genome Assembly and Targeted Sequencing. 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* will allow 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. These efforts are exemplified by the recent release of our C2 chemistry. With modest updates to the PacBio RS instrument software and firmware, our updated chemistry delivers typical results that, when compared to our original chemistry, demonstrate a 2x improvement in readlength, 3-4x improvement in mappable data per SMRT Cell, and 50% decrease in input sample required, while achieving consensus accuracy of Q50 (99.999%) with lower coverage. We also plan to improve the reliability of our existing products as they have demonstrated issues we believe typical of new, highly complex technology products. We plan to introduce additional 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 analyzing base modifications using the kinetic detection capabilities of the PacBio *RS*. 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 have launched the PacBio DevNet, 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.

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 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 in-house, building, testing and troubleshooting instruments on our factory floor before being qualified to service instruments installed at customer sites.

As of December 31, 2011, we had 46 field-based sales and service personnel in our organization.

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 DNA samples isolated from human cancer patients while agricultural biology, or AgBio, companies may have DNA samples isolated from different strains of corn or other crops. For the years ended December 31, 2011, 2010 and 2009, no single customer accounted for more than 10% of our total revenue. During 2011, we sold 48 instruments to 45 customers.

We believe that the majority of our current customers are early adopters of sequencing technology, and they have primarily used our products for small-scale projects, as they are determining where our products can add significant value. 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.

Backlog

As of December 31, 2011, our system revenue backlog was approximately $11.0 million, comprised of 16 systems compared to $24.0 million and 38 systems at December 31, 2010. Revenue realized during 2011 primarily reflects the delivery of systems in backlog at the end of 2010. 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 through the first half of 2012 subject to customers who may otherwise seek to cancel or delay their orders even if we are prepared to fulfill them. Our ability to add systems to the backlog in the future is dependent on our ability to gain broader adoption of our technology and products.

Manufacturing

Our principal manufacturing facilities are located at our headquarters in Menlo Park, California. We currently manufacture our instruments in-house. Over time, we intend to outsource various sub-assemblies to third-party manufacturers, but we expect to continue to conduct the final assembly in-house. 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.

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 and generally do not maintain large volumes of inventory. 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 $76.1 million, $111.8 million and $75.9 million during 2011, 2010, and 2009, respectively.

We plan to continue investment in research and development to support the ongoing development of chemistry components and protocols to enhance overall system performance. Our goals are to further improve sequencing readlength, accuracy and mappable data per SMRT Cell, as well as to develop and introduce into the marketplace new applications that will take full advantage of our single molecule, real-time detection technology. In addition, our engineering teams will continue their focus on increasing instrument component and system reliability, in response to reliability issues experienced by early adopters of our technology, reducing costs, and implementing additional system flexibility and versatility.

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, 2011, we own or hold exclusive licenses to 77 issued U.S. patents, 120 pending U.S. patent applications, 35 granted foreign patents and 120 pending foreign patent applications, including foreign counterparts of U.S. patent and patent applications. The full term of these issued U.S. patents will expire between April 2016 and March 2029.

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 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, under 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. Subject to customary termination rights, the initial term of the collaboration will end on the earlier of (i) December 15, 2012 and (ii) six months after we achieve certain development milestones. During the collaboration period, each party will be free to sell instrument systems that incorporate its own technology but, subject to limited exceptions, neither party may jointly develop integrated sequencing systems for clinical diagnostics with any third party nor license its technology to any third party for such use. In addition, the collaboration agreement provides each party with preferred access to certain products of the other party when commercially available, both during and after the collaboration period.

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. Some of these companies have or will have greater financial, technical, research and other resources than us. They may 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. These emerging potential competitors include Complete Genomics, Inc. and 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.

The Company’s assets are primarily located in the United States of America and not allocated to any specific region. 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 and 2009 of $1.7 million and $0.1 million, respectively, was based 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.”

Employees

As of December 31, 2011, we had 326 full-time employees. Of these employees, 124 were in research and development, 79 were in operations, 79 were in marketing, sales, service and support, and 44 were in general and administration. With the exception of our field-based sales and service teams, 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.

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;
- comply with evolving regulatory requirements applicable to our products;
- anticipate and adapt to changes in our market;
- focus our research and development efforts in areas that generate returns on these efforts;
- maintain and develop strategic relationships with vendors and manufacturers to acquire necessary materials for the production of our products;
- implement an effective marketing strategy to promote awareness 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;
- provide appropriate levels of customer training and support for our products;
- 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 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 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 product.

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 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, 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 have limited experience in sales and marketing of our products and, as a result, 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.

We have limited experience in manufacturing our products. 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 is 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.

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 semiconductor chips, optics, lasers and cameras. 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 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 recent 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 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. 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 may need additional financing to fund our existing operations. Securities we issue to fund our operations could dilute your ownership.

We may decide to raise additional funds through public or private debt or equity financing. Such additional funds may not be available on terms acceptable to us or at all, particularly in light of recent market conditions. If we raise funds by issuing equity securities, the percentage ownership of our stockholders will be reduced, and the new equity securities may have priority rights over current investors. We may delay, limit or eliminate some or all of our proposed operations and research and development if adequate funds are not available.

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 90 days from the date of delivery or by the shelf life date or "use by" date, if earlier. 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 future product liability insurance that we procure 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 do 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 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 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 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 are required to perform an evaluation of our internal control over financial reporting by December 31, 2011. While we have performed this evaluation and have concluded that our internal control over financial reporting was operating effectively as of December 31, 2011, 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, some of which are outside of our control, 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.

We may not realize the anticipated benefits from our restructuring efforts.

On September 20, 2011, we implemented a restructuring that resulted in a reduction of our workforce in order to manage and reduce our operating costs and expenses. If we experience unanticipated inefficiencies or incremental costs in connection with our restructuring activities we may be unable to realize cost reductions and we may incur additional expenses. There can be no assurance that we will realize the benefits that we anticipate from our restructuring activities or that such activities will reduce our operating expenses and improve our cost structure.

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 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. 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.

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

Our products are based on complex, rapidly developing technologies. We may not be aware of issued or previously filed patent applications 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. We are presently involved in a lawsuit filed by Helicos Biosciences Corporation that alleges that our products infringe patents owned and in-licensed by Helicos (see "Legal Proceedings"). In defending this lawsuit, we expect to incur substantial costs, and experience diversion of attention of our management and technical personnel. An unfavorable outcome in this lawsuit could result in our having to pay damages, royalties or both to Helicos, and could prevent us from selling some or all of our products. 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 Affymetrix, Inc., 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. 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;
- 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 II, Item 1 "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.

The holders of a significant number of shares of our common stock will be 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 ability to raise capital may be impaired. We 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. .

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

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

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

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

- authorize our board of directors to issue, without further action by the stockholders, up to 50,000,000 shares of undesignated preferred stock and up to approximately 1,000,000,000 shares of authorized but unissued shares of common stock;
- require that any action to be taken by our stockholders be effected at a duly called annual or special meeting and not by written consent;
- specify that special meetings of our stockholders can be called only by our board of directors, the Chairman of the Board, the Chief Executive Officer or the President;
- establish an advance notice procedure for stockholder approvals to be brought before an annual meeting of our stockholders, including proposed nominations of persons for election to our board of directors;
- establish that our board of directors is divided into three classes, Class I, Class II and Class III, with each class serving staggered terms;
- provide that our directors may be removed only for cause; and
- provide that vacancies on our board of directors may be filled only by a majority of directors then in office, even though less than a quorum.

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

Our large number of authorized but unissued shares of common stock may potentially dilute 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.

ITEM 1B. UNRESOLVED STAFF COMMENTS

None

ITEM 2. PROPERTIES

As of December 31, 2011, 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 Beijing, China. We believe that our existing facilities are in good operating condition and suitable for the conduct of our business.

ITEM 3. LEGAL PROCEEDINGS

On August 27, 2010, we were named as a defendant in a complaint filed by Helicos Biosciences Corporation ("Helicos") in the United States District Court for the District of Delaware (Case No. 1:10-CV-00735 SLR). In the complaint, Helicos alleges that we are infringing, inducing others to infringe, and contributing to the infringement by others of two patents in-licensed by Helicos and two patents owned by Helicos, by making, using, and selling our SMRT technology for single molecule sequencing of DNA and teaching customers how to use the SMRT technology and PacBio *RS* sequencing platform. The four patents asserted by Helicos are U.S. Patent Nos. 7,645,596 and 7,037,687 (each titled "Method of Determining the Nucleotide Sequence of Oligonucleotides and DNA Molecules"), 7,169,560 (titled "Short Cycle Methods for Sequencing Polynucleotides"), and 7,767,400 (titled "Paired-end Reads in Sequencing by Synthesis"). Helicos seeks a permanent injunction enjoining us from further infringement of the asserted patents, and unspecified monetary damages, including enhanced damages under 35 U.S.C. §284, costs, attorneys' fees and other relief as the court deems just and proper. On October 22, 2010, Helicos filed an amended complaint naming additional defendants in the lawsuit. On November 8, 2010, we filed our response to Helicos' complaint denying Helicos' allegations that our products infringe any valid claims of the patents in suit, asserting affirmative defenses of noninfringement, invalidity and unenforceability of the claims of the patents in suit, and asserting counterclaims for declaratory judgment that our products do not infringe the claims of the patents in suit, and that those claims are invalid and unenforceable. On January 27, 2011, we filed requests that the USPTO order re-examination of all of the claims of each of the asserted patents. The USPTO granted our request for re-examination of each of the asserted patents, and rejected all of the claims of the asserted patents as being unpatentable over prior art. On October 20, 2011, the USPTO issued actions closing prosecution in three of the asserted patents, maintaining the rejection of all claims of each of these patents as unpatentable over the prior art. On December 16, 2011, the court granted Helicos' motion to file a second amended complaint adding Arizona Science and Technology Enterprises LLC d/b/a Arizona Technology Enterprises as an additional plaintiff in the lawsuit. On January 5, 2012, the USPTO issued an action closing prosecution in the fourth asserted patent, maintaining the rejection of all claims of the patent as unpatentable over the prior art. Despite our defenses and counterclaims, we cannot guarantee any outcome of this lawsuit.

On October 21, 2011 and October 24, 2011 we and certain of our officers and directors were named in two identical purported class action lawsuits filed in the Superior Court of the State of California, County of San Mateo (Young v. Pacific Biosciences, et al. Case No. CIV509210 and Sandnas v. Pacific Biosciences, et al., Case No. CIV 509259). Plaintiffs have brought claims alleging violation of several provisions of federal securities laws in connection with the Company's August 16, 2010 registration statement (as amended, effective as of October 26, 2010) on behalf of all persons or entities who purchased Pacific Biosciences stock pursuant or traceable to the Company's IPO and were damaged thereby. The complaints allege violations of Sections 11, 12(a)(2), and 15 of the Securities Act of 1933 in connection with the Company's IPO, arising out of alleged omissions and misrepresentations in the Company's August 16, 2010, registration statement (as amended, effective as of October 26, 2010). The complaints seek, among other things, compensatory damages, rescission, and attorney's fees and costs. On December 21, 2011, we and certain of our officers and directors were named in a purported class action lawsuit filed in United States District Court for the Northern District of California

(Primo v. Pacific Biosciences et al., No. 4:11-CV-06599 (CW)), on behalf of all persons or entities who bought Pacific Biosciences stock between October 27, 2010 and September 20, 2011. The complaint alleges violations of Section 10(b) and Rule 10b-5 and Section 20(a) of the Exchange Act of 1934, arising out of alleged misstatements or omissions by the Company and/or its employees during the class period. The complaint seeks, among other things, compensatory damages, rescission, and attorneys' fees and costs. 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., No. 5:11-CV-06703 (LHK)). The complaint alleges that the director defendants breached various fiduciary duties owed to the Company, 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 Company corporate governance procedures, and attorneys' fees and costs. 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. 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 the Company's IPO 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. Although the results of litigation and claims cannot be predicted with certainty, we currently believe that the final outcome of these matters will not have a material adverse effect on our business. 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.

An estimate of the possible loss or possible range of loss associated with the resolution of these contingencies cannot be provided with certainty or confidence, and therefore no estimate is provided and we have not recorded a liability.

ITEM 4. MINE SAFETY DISCLOSURES

Not applicable.

PART II

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

Our common stock has been listed on the Nasdaq Global Select Market under the symbol "PACB" since October 27, 2010. Prior to that time, there was no public market for our stock. The following table sets forth quarterly high and low closing sales prices per share for our common stock for the indicated fiscal periods:

	2011		2010	
	High	Low	High	Low
4th Quarter	$ 4.07	$ 2.28	$17.47	$11.25
3rd Quarter	12.24	3.21	N/A	N/A
2nd Quarter	13.53	10.44	N/A	N/A
1st Quarter	16.30	12.94	N/A	N/A

Holders of Record

As of February 17, 2012, there were approximately 85 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 currently intend to retain any future earnings and do not expect to pay any dividends in the foreseeable future.

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.

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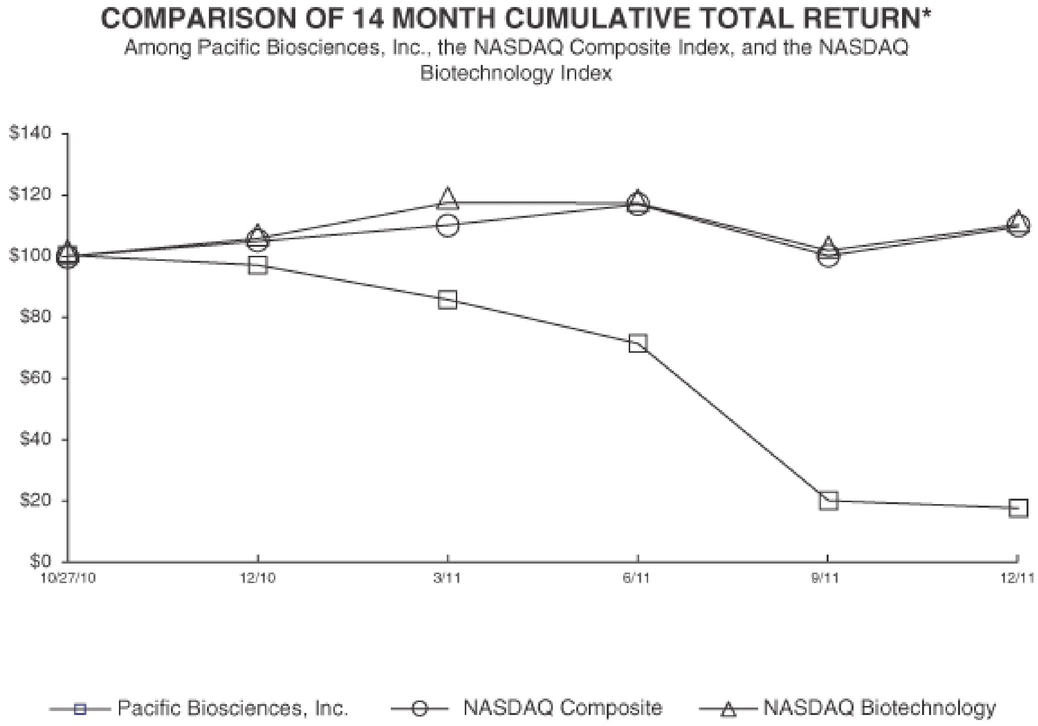
The following graph shows a comparison from October 27, 2010 (the date our common stock commenced trading on the Nasdaq Global Select Market) through December 31, 2011 of the cumulative total return for our common stock, the Nasdaq Composite Index and the Nasdaq Biotechnology Index. Such returns are 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.



*$100 invested on 10/27/10 in stock or 9/30/10 in index, including reinvestment of dividends.
Fiscal year ending December 31.

	October 27, 2010	December 31, 2010	March 31, 2011	June 30, 2011	September 30, 2011	December 31, 2011
Pacific Biosciences of California Inc.	$ 100.00	$ 96.78	$ 85.46	$ 71.17	$ 19.53	$ 17.03
NASDAQ Composite Index.	100.00	105.98	117.68	117.43	102.04	110.40
NASDAQ Biotechnology Index	100.00	104.93	110.35	116.99	100.19	109.66

Recent Sales of Unregistered Securities

There have been no sales of unregistered securities during the year ended December 31, 2011.

Use of Proceeds

Our initial public offering of common stock was effected through a Registration Statement on Form S-1 (File No. 333-168858) that was declared effective by the Securities and Exchange Commission on October 26, 2010, which registered an aggregate of 14,375,000 shares of our common stock. On November 1, 2010, we sold 12,500,000 shares of common stock at an initial public offering price of $16.00 per share, for aggregate gross proceeds of $200 million. The underwriters of the offering were J.P. Morgan Securities Inc., Morgan Stanley & Co. Incorporated, Deutsche Bank Securities Inc. and Piper Jaffray & Co. On November 4, 2010, in connection with the exercise of the underwriters' over-allotment option, 1,875,000 additional shares of common stock were sold on our behalf at the initial public offering price of $16.00 per share, for aggregate gross proceeds of $30 million.

We paid to the underwriters underwriting discounts totaling approximately $16.1 million in connection with the offering. In addition, we incurred expenses of approximately $3.1 million in connection with the offering, which when added to the underwriting discounts paid by us, amount to total expenses of approximately $19.2 million. Thus, the net offering proceeds to us, after deducting underwriting discounts and offering expenses, were approximately $210.8 million. No offering expenses were paid directly or indirectly to any of our directors or officers (or their associates) or persons owning ten percent or more of any class of our equity securities or to any other affiliates.

As of the date of this report, there has been no material change in the use of proceeds from our initial public offering as described in our final prospectus filed with the SEC pursuant to Rule 424(b).

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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,				
	2011	2010	2009	2008	2007
	(in thousands, except share and per share amounts)				
Statement of Operations Data:					
Total revenue (1)	$ 33,863	$ 1,674	$ 135	$ 901	$ 2,163
Total cost of revenue (1)	20,829	—	—	—	—
Gross profit (1)	13,034	1,674	135	901	2,163
Total operating expense	122,790	141,908	88,205	45,710	25,554
Operating loss	(109,756)	(140,234)	(88,070)	(44,809)	(23,391)
Other income, net	368	68	367	1,055	1,873
Net loss	$ (109,388)	$ (140,166)	$ (87,703)	$ (43,754)	$ (21,518)
Basic and diluted—net loss per share	$ (2.03)	$ (14.10)	$ (173.03)	$ (133.82)	$ (272.93)
Weighted average shares outstanding used to calculate basic and diluted net loss per share (2)	53,873,928	9,938,411	506,865	326,955	78,841

	As of December 31,				
	2011	2010	2009	2008	2007
	(in thousands)				
Balance Sheet Data:					
Cash, cash equivalents and investments	$ 177,434	$ 283,674	$ 92,735	$ 106,051	$ 30,090
Working capital	180,225	272,274	85,326	102,224	27,082
Total assets	218,316	305,747	101,098	113,107	34,349
Convertible preferred stock warrant liability	—	—	226	142	151
Convertible preferred stock (3)	—	—	269,101	201,085	81,122
Total stockholders’ equity (deficit)	191,463	279,866	(177,123)	(93,389)	(52,135)

(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 earned. 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. Therefore, future periods will reflect higher cost of sales as a percentage of revenue.

(2) For further information, see “Note 12. 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.

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 genetic analysis. Combining recent 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 $575.0 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, 2011, we had an accumulated deficit of $441.6 million. We incurred net losses of $109.4 million, $140.2 million and $87.7 million in 2011, 2010 and 2009, respectively.

Basis of Presentation

Revenue

During 2011, the majority of our revenue related to the sale of PacBio *RS* instruments and associated consumables and services. Service and other revenue primarily consists of 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.

We anticipate that our future revenue will be generated primarily from sales of our PacBio *RS* instruments and consumables, comprised of SMRT Cells and reagent kits, and system maintenance agreements.

As of December 31, 2011, our system revenue backlog totaled approximately $11 million comprised of 16 systems. We define backlog as purchase orders or signed contracts from our customers for PacBio *RS* instruments which we believe are firm and for which we have not yet recognized revenue. We expect to convert this backlog to revenue through the first half of 2012 subject to customers who may otherwise seek to cancel or delay their orders even if we are prepared to fulfill them.

Cost of Revenue

Cost of revenue reflects the direct cost of product components and third party manufacturing services as well as our internal manufacturing overhead and customer service infrastructure costs incurred to produce, deliver, maintain and support customer 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. 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 included the direct costs of components used in support, repair and maintenance of customer instruments as well as the cost of personnel 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 and is engaged in certain non-customer related process development, customer issue tracking, manufacturing and service delivery improvements. 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.

Cost of revenue recorded in 2011 reflect a portion of the costs associated with 48 system installations. Significant instrument component costs were expensed pursuant to generally accepted accounting principles as research and development expenses during prior periods consisting of commercial designs, configurations and specifications that were being finalized. As a result, a significant portion of the costs associated with the instrument revenue recognized during 2011 were expensed prior to September 30, 2010, the point after which commercial designs and specifications were finalized and we commenced capitalization of inventory related costs. The cost of product revenue recognized during 2011 was limited to the costs relating to components and manufacturing overhead incurred subsequent to September 30, 2010 for the 48 delivered instruments. All of the previously expensed inventory was utilized by December 31, 2011; therefore we expect a significant increase in product related cost during 2012, which will reduce our gross margin.

Operating Expenses

Restructuring Expense. During September 2011, we implemented a workforce reduction of approximately 130 employees, or 28% of our workforce. The action taken was in consideration of uncertainties associated with the economic environment and to position us for long-term success. The cost associated with this restructuring consist 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 in 2011. At December 31, 2011, substantially all amounts relating to the restructuring had been disbursed.

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.

Sales, General and Administrative Expense. Sales, general and administrative expense consists primarily of personnel-related expense related to our executive, legal, finance, sales, marketing, field service, customer support, and human resource functions, as well as fees for professional services and facility costs. Professional services consist principally of external legal, accounting and other consulting services. Selling, general and administrative recurring expenses are expected to increase gradually over time as we continue to add resources to our sales and support infrastructure.

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.

Other Income, Net

Other income, net consists primarily of interest income earned and accretion of discounts and amortization of premiums on investment balances. Our interest income will vary each reporting period depending on our average investment balances during the period and market interest rates. Other income, net also includes interest expense relating to our loan and debt agreements repaid in 2009 and our facility financing obligations resulting from lease agreements entered into in 2010. We expect interest expense to fluctuate in the future with changes in the obligations. Other income, net also includes the change in the fair value of our convertible preferred stock warrants in 2010 and prior years. Prior to converting to common stock warrants upon our initial public offering, outstanding convertible preferred stock warrants were classified as liabilities and were remeasured at each balance sheet date with changes in fair value recognized as other income, net. We continued to adjust the liability for changes in fair value until the conversion to common stock warrants.

Income Taxes

Provision for (Benefit from) Income Taxes. Since inception, we have incurred net losses and have not recorded any U.S. federal or state income tax benefits for such losses as they have been offset by valuation allowances.

Critical Accounting Policies and Estimates

Management’s Discussion and Analysis of Financial Condition and Results of Operations is based upon our Consolidated Financial Statements that 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. Management has discussed the development, selection and disclosure of significant estimates with the Audit Committee of our Board of Directors. Actual results may differ from these estimates under different assumptions or conditions.

An accounting policy is deemed to be critical if it requires management to make 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.

We believe the following critical accounting policies involve significant areas where management applies judgments and estimates in the preparation of our financial statements.

Revenue Recognition

Our revenue is generated primarily from the sale of products and services. Product revenue primarily 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 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 or payment terms based on future performance exist, we defer revenue recognition until the price becomes fixed or determinable. Our revenue arrangements generally do not have a general right of return. 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 where revenue is derived from multiple deliverables including a mix of products 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 the control of the Company. 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. 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 the following hierarchy in the order presented: 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 priced within a relatively narrow range. If there are not a sufficient number of standalone sales and VSOE cannot be determined, then we consider whether third party evidence can be used to establish selling price. 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. 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. Therefore, management has determined its best estimate of selling price in allocating sales proceeds to the individual units of accounting in accordance with generally accepted accounting principles.

Deferred revenue primarily represents product maintenance agreement revenue that is expected to be recognized over the related service period.

Stock-Based Compensation

Our estimate of compensation expense requires us to determine the appropriate fair value model and a number of complex and subjective estimates and assumptions including our stock price volatility, employee exercise patterns, future forfeitures and related tax effects. The most significant assumptions are our estimates of the expected volatility and the expected term of the award. We have limited historical information available to support the underlying estimates of certain assumptions required to value stock options. The value of a stock option is derived from its potential for appreciation. The more volatile the stock, the more valuable the option becomes because of the greater possibility of significant changes in stock price. Because there is a market for options on our common stock, we have considered implied volatilities as well as our historical realized volatilities when developing estimates of expected volatility. The expected option term significantly effects the value of the option. The longer the term, the more time the option holder has to allow the stock price to increase without a cash investment and thus, the more valuable the option. Further, lengthier option terms provide more opportunity to exploit market highs. However, empirical data shows that employees, for a variety of reasons, typically do not wait until the end of the contractual term of a nontransferable option to exercise. Accordingly, we are required under generally accepted accounting principles to estimate the expected term of the option for input to an option-pricing model. As required under the accounting rules, we review our valuation assumptions at each grant date and, as a result, from time to time we will likely change the valuation assumptions we use to value stock based awards granted in future periods. 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, we are required to estimate the expected forfeiture rate and recognize expense only for those shares expected to vest. 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, 2011, $24.9 million of total unrecognized compensation expense related to stock options was expected to be recognized over a weighted-average period of 3.2 years. See Note 10 of the Notes to our Consolidated Financial Statements for a further discussion on stock-based compensation.

Common Stock Valuation

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. Our board of directors is comprised of a majority of non-employee directors with significant experience in the technology industry.

Given the absence of a public trading market prior to our IPO in October 2010, and in accordance with the American Institute of Certified Public Accountants Practice Aid, our board of directors exercised its reasonable judgment and considered numerous objective and subjective factors to determine the best estimate of the fair value of our common stock at each meeting at which stock option grants were approved. These factors included, among other factors, contemporaneous, independent valuations of our common stock, the rights and preferences of our convertible preferred stock relative to our common stock, the lack of marketability of our common stock, developments in our business, recent issuances of our convertible preferred stock and the likelihood of achieving a discrete liquidity event, such as an IPO, given prevailing market conditions.

Non-employee Stock-based Compensation

We account for stock options issued to non-employees based on the estimated fair value of the awards using the Black-Scholes option pricing model. The measurement of stock-based compensation expense is subject to periodic adjustments as the underlying equity instruments vest, and the resulting change in value, if any, is recognized in our statement of operations during the period the related services are rendered. Stock-based compensation expense for options granted to non-employees for 2011, 2010 and 2009 was $0.2 million, $1.0 million and $0.4 million, respectively.

There is inherent uncertainty in these estimates and if different assumptions had been used, the fair value of the equity instruments issued to non-employee consultants could have been significantly different.

Impairment of Long-lived Assets

We assess impairment of long-lived assets, which include property and equipment, on at least an annual basis and test long-lived assets for recoverability 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.

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. We use the asset and liability method of accounting for income taxes, whereby deferred tax asset or liability account balances are calculated at the balance sheet date using current tax laws and rates in effect for the year in which the differences are expected to affect taxable income.

Recognition of deferred tax assets is appropriate when realization of such assets is more likely than not. 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, 2011, we maintained a full valuation allowance against all of our deferred tax assets which totaled $180.8 million, including net operating loss carryforwards and research and development tax credits of $154.1 million and $17.8 million, respectively.

Effective January 1, 2007, we adopted the provisions of the Financial Accounting Standard Board, or FASB, Accounting Standards Codification, or ASC, Topic 740-10, Accounting for Uncertainty in Income Taxes. The cumulative effect of adoption resulted in no adjustment of accumulated deficit as of January 1, 2007. As of December 31, 2011, 2010, and 2009, our total unrecognized tax benefits were $9.3 million, $6.4 million, and $3.9 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.

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. The recognition and measurement of tax benefits require significant judgment. Judgments concerning the recognition and measurement of a tax benefit might change as new information becomes available.

Convertible Preferred Stock Warrants

Prior to our IPO in October 2010, we accounted for freestanding warrants to purchase shares of our convertible preferred stock at fair value on the balance sheet because we may have been obligated to redeem these warrants at some point in the future. The warrants were subject to remeasurement at each balance sheet date with changes in fair value recognized as other income (expense), net in the consolidated statement of operations. We continued to adjust the liability for changes in fair value until our IPO, at which time all unexercised warrants automatically converted into warrants to purchase common stock and the warrant liability was reclassified to additional paid-in capital.

During 2011, 2010 and 2009, we recorded charges of $0, $100,000, and $84,000, respectively, through other income, net to reflect the change in the fair value of the warrants.

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Results of Operations

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.

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. All of the previously expensed inventory was utilized by December 31, 2011; therefore we expect a significant increase in product related cost as a percentage of product sales during 2012, which will decrease our gross margin. 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.

Comparison of the Years Ended December 31, 2010 and 2009

	Years ended December 31, 2010	Years ended December 31, 2009	Increase/ (Decrease)	% Increase/ (Decrease)
	(in thousands, except percentages)			
Revenue	$ 1,674	$ 135	$ 1,539	*
Research and development	111,821	75,879	35,942	47%
Sales, general and administrative	30,087	12,326	17,761	144%
Loss from operations	(140,234)	(88,070)	52,164	59%
Other income, net	68	367	(299)	(81)%
Net loss	$(140,166)	$(87,703)	$ 52,463	60%

* Percentage not meaningful.

Revenue

During 2010 and 2009, revenue was comprised solely of government grant revenue. The amount of revenue realized is dependent on the grant received, the amount of the grant and subsequent work performed pursuant to the grant. The increase in revenue realized was due to an increase in the amount of awarded government grants in 2010 as compared to 2009.

Research and Development Expense

The $35.9 million increase in research and development expense was driven primarily by a $15.7 million increase in purchases of material for the manufacture of prototype instruments and consumable products, and a $15.1 million increase in personnel-related expense. The increase in personnel-related expense included significant expansion of manufacturing operations as we prepared for the commercial launch of the PacBio *RS*. The expansion of our manufacturing facilities resulted in a $1.6 million increase in facility expense. Research and development expense included stock-based compensation expense of $6.6 million and $2.3 million during the years ended December 31, 2010 and 2009, respectively.

Sales, General and Administrative Expense

The $17.8 million increase in sales, general and administrative expense was driven primarily by a $12.4 million increase in personnel related expense resulting from increased headcount reflecting the continued growth of our sales, marketing and customer support organizations, a $2.0 million increase in customer application, demonstration and marketing initiatives and a $1.7 million increase in travel-related expense for sales and support of beta instruments in the field. Sales, general and administrative expense included stock-based compensation expense of $3.1 million and $0.7 million during the years ended December 31, 2010 and 2009, respectively.

Loss from Operations

The $52.2 million increase in loss from operations was driven primarily by a $35.9 million increase in research and development expense and a $17.8 million increase in sales, general and administrative expense, partially offset by a $1.5 million increase in government grant revenue.

Interest Income (Expense), Net

The decrease in interest income (expense), net was primarily due to lower interest rates on money market holdings during the majority of 2010.

Other Income, Net

The change in other income, net primarily reflects the remeasurement of our warrant liability.

Liquidity and Capital Resources

Since our inception we have financed our operations primarily through the issuance of convertible preferred stock resulting in $364.2 million in net proceeds and the issuance of common stock through our initial public offering resulting in $210.8 million in net proceeds. As of December 31, 2011, our cash, cash equivalents and investments totaled $177.4 million, a decrease of $106.2 million compared to December 31, 2010, reflecting approximately $103.0 million of cash used during the year to fund operations. 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. These expectations are based on our current operating and financing plans, which are subject to change. Factors that may effect 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 could 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 would 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,		
	2011	2010	2009
		(in thousands)	
Net cash used in operating activities	$(102,974)	$(121,996)	$(74,838)
Net cash provided by (used in) investing activities	6,446	(138,250)	18,594
Net cash provided by financing activities	7,743	318,664	67,014

Cash Flows From Operating Activities

Our primary uses of cash from operating activities are for personnel-related expenditures and equipment and supplies related to research and development activities and recently for the purchase of inventory. The net cash used for the years ended December 31, 2011, 2010 and 2009 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 $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. In addition, cash used in operating activities 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.

Cash used in operating activities of $74.8 million in 2009 reflected a net loss of $87.7 million, partially offset by aggregate non-cash charges of $7.9 million and a net change of $4.9 million in our net operating assets and liabilities. Non-cash charges primarily included $4.1 million of depreciation and $3.6 million of stock-based compensation. The net change in our operating assets and liabilities was primarily a result of an increase in accounts payable of $3.9 million and the increase in accrued and other liabilities of $1.2 million.

Cash Flows From Investing Activities

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

During the years ended December 31, 2011, 2010 and 2009 cash used to fund capital expenditures totaled $9.3 million, $5.3 million and $5.2 million, respectively. We currently anticipate making capital expenditures in the future primarily for purchases of equipment to be used in our commercial and research operations.

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.

In 2009, cash provided by investing activities was $18.6 million as a result of $23.8 million in net investment maturities, partially offset by $5.2 million of capital expenditures.

Cash Flows From Financing Activities

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.

In 2009, cash provided by financing activities was $67.0 million, primarily as a result of the net receipt of $68.0 million from our sale of Series E convertible preferred stock, partially offset by debt repayment of $1.3 million.

Contractual Obligations, Commitments and Contingencies

The following table provides summary information concerning our future contractual obligations as of December 31, 2011.

	Payments due by period				
	Total	Less than 1 year	1-3 years	3-5 years	More than 5 years
			(in thousands)		
Operating lease obligations (1)	$14,860	3,560	11,300	—	—
Facility financing obligation	1,772	415	1,357	—	—
Total contractual obligations	$16,632	3,975	12,657	—	—

(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.

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 Obligation” 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 five license agreements are not deemed to be material.

Off-Balance Sheet Arrangements

As of December 31, 2011 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 a trade secret, copyright, patent or other intellectual property infringement claim by a third party with respect to its technology, or from claims relating to our performance or non-performance under a contract, or 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 any time 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.

Recent Accounting Pronouncements

In 2011 the FASB issued Accounting Standards Update No. 2011-04, Fair Value Measurement (Topic 820): Amendments to Achieve Common Fair Value Measurement and Disclosure Requirements in U.S. GAAP and IFRS. This update results in common principles and requirements for measuring fair value and for disclosing information about fair value measurements in accordance with U.S. GAAP and IFRS. ASU 2011-04 is required to be applied prospectively in interim and annual periods beginning after December 15, 2011. Early application is not permitted. The adoption of this amendment will not have a material effect on our Consolidated Financial Statements.

In 2011 the FASB issued Accounting Standards Update No. 2011-05, Comprehensive Income (Topic 220): Presentation of Comprehensive Income. This statement requires companies to present the components of other comprehensive income either in a single continuous statement of comprehensive income or in two separate but consecutive statements of net income and other comprehensive income. This statement is effective for interim and annual periods beginning after December 15, 2011. Early adoption of the new guidance is permitted and full retrospective application is required. The adoption of this amendment will not have a material effect on our Consolidated Financial Statements as the amendment impacts presentation only.

In 2011 the FASB amended the provisions of the *Balance Sheet, Disclosure about Offsetting Assets and Liabilities* topic of the FASB Codification. The amended provisions provide new disclosures for recognized financial instruments and derivative instruments that are either offset on the balance sheet or subject to an enforceable master netting arrangement or similar agreement. The amended provisions are effective for fiscal years beginning on or after January 1, 2013. The amended provisions are required to be applied retrospectively for all prior periods presented. The adoption of this amendment will not have a material effect on our Consolidated Financial Statements.

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, all of which have maturities of less 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 very 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 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. During January 2012, we implemented a hedging program designed to mitigate the impact of changes in currency exchange rates on our net cash flow from foreign currency denominated sales. Counterparties to foreign exchange contracts expose us to credit-related losses in the event of their nonperformance. To mitigate that risk, we only contract with counterparties that meet certain minimum requirements under our counterparty risk assessment process. We will periodically monitor and assess our ongoing counterparty risk and will adjust our exposure to various counterparties as appropriate.

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

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 sheet of Pacific Biosciences of California, Inc. as of December 31, 2011, and the related consolidated statements of operations, stockholders' equity and cash flows for the year then ended. 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 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 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 audit provides 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, 2011, and the consolidated results of its operations and its cash flows for the year then ended, 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, 2011, based on criteria established in *Internal Control – Integrated Framework* issued by the Committee of Sponsoring Organizations of the Treadway Commission and our report dated February 29, 2012 expressed an unqualified opinion thereon.

/s/ Ernst & Young LLP

Redwood City, California
February 29, 2012

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 balance sheet as of December 31, 2010 and the related consolidated statements of operations, and consolidated statements of stockholders' equity (deficit), and of the consolidated statements of cash flows for each of the two years in the period ended December 31, 2010 present fairly, in all material respects, the financial position of Pacific Biosciences of California, Inc. and its subsidiaries at December 31, 2010 and the results of their operations and their cash flows for each of the two years in the period 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 audits. We conducted our audits 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 audits provide a reasonable basis for our opinion.

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

PACIFIC BIOSCIENCES OF CALIFORNIA, INC.

Consolidated Balance Sheets

(in thousands except share and per share amounts)	December 31, 2011	December 31, 2010
Assets		
Current assets		
Cash and cash equivalents	$ 58,865	$ 147,650
Investments	118,569	136,024
Accounts receivable	4,557	341
Inventory	15,517	6,864
Prepaid expenses and other current assets	2,093	2,235
Total current assets	199,601	293,114
Property and equipment, net	18,398	12,311
Long-term assets	317	322
Total assets	$ 218,316	$ 305,747
Liabilities, Convertible Preferred Stock and Stockholders' Equity (Deficit)		
Current liabilities		
Accounts payable	$ 4,742	$ 9,515
Accrued expenses and other current liabilities	10,258	7,994
Deferred revenue	4,236	3,221
Facility financing obligation	140	110
Total current liabilities	19,376	20,840
Deferred revenue, non-current	1,616	—
Lease incentives and other long-term liabilities	3,075	2,114
Facility financing obligation, non-current	2,786	2,927
Total liabilities	26,853	25,881
Commitments and contingencies (Note 6)		
Stockholders' equity		
Convertible Preferred Stock, $0.001 par value:		
Authorized 50,000,000 shares; No shares issued or outstanding at December 31, 2011 and 2010	—	—
Common Stock and additional paid-in-capital, $0.001 par value:		
Authorized 1,000,000,000 shares; Issued and outstanding 54,963,770 and 52,855,267 shares at December 31, 2011 and 2010, respectively	632,961	612,054
Accumulated other comprehensive income (loss)	57	(21)
Accumulated deficit	(441,555)	(332,167)
Total stockholders' equity	191,463	279,866
Total liabilities and stockholders' equity	$ 218,316	$ 305,747

See accompanying notes to the consolidated financial statements.

PACIFIC BIOSCIENCES OF CALIFORNIA, INC.

Consolidated Statements of Operations

(in thousands, except share and per share amounts)	Years Ended December 31, 2011	2010	2009
Revenue:			
Product revenue	$ 31,486	$ —	$ —
Service and other revenue	1,487	—	—
Grant revenue	890	1,674	135
Total revenue	33,863	1,674	135
Cost of Revenue:			
Cost of product revenue	18,725	—	—
Cost of service and other revenue	2,104	—	—
Total cost of revenue	20,829	—	—
Gross profit	13,034	1,674	135
Operating Expense:			
Research and development	76,080	111,821	75,879
Sales, general and administrative	46,710	30,087	12,326
Total operating expense	122,790	141,908	88,205
Operating loss	(109,756)	(140,234)	(88,070)
Other income, net	368	68	367
Net loss	$ (109,388)	$ (140,166)	$ (87,703)
Basic and diluted net loss per share	$ (2.03)	$ (14.10)	$ (173.03)
Shares used in computing basic and diluted net loss per share	53,873,928	9,938,411	506,865

See accompanying notes to the consolidated financial statements.

PACIFIC BIOSCIENCES OF CALIFORNIA, INC.

Consolidated Statements of Stockholders' Equity (Deficit)

(in thousands, except share and per share amounts)	Common Stock Shares	Common Stock Amount	Additional Paid-in Capital	Deferred Stock-Based Compensation	Accumulated Other Comprehensive Income (Loss)	Accumulated Deficit	Total Stockholders' Equity (Deficit)
Balance at December 31, 2008	577,021	$ —	$ 10,907	$ (42)	$ 44	$ (104,298)	$ (93,389)
Issuance of Common Stock upon exercise of stock options	84,241	—	303	—	—	—	303
Repurchase of unvested Common Stock	(5,178)	—	—	—	—	—	—
Vesting of Common Stock options early exercised	—	—	79	—	—	—	79
Employee stock-based compensation expense recorded under the intrinsic value method	—	—	526	42	—	—	568
Employee stock-based compensation expense recorded under the fair value method	—	—	2,643	—	—	—	2,643
Non-employee stock-based compensation	—	—	419	—	—	—	419
Other comprehensive loss	—	—	—	—	(43)	—	(43)
Net loss	—	—	—	—	—	(87,703)	(87,703)
Total comprehensive loss	—	—	—	—	—	—	(87,746)
Balance at December 31, 2009	656,084	$ —	$ 14,877	$ —	$ 1	$ (192,001)	$ (177,123)

See accompanying notes to the consolidated financial statements.

PACIFIC BIOSCIENCES OF CALIFORNIA, INC.

Consolidated Statements of Stockholders' Equity (Deficit)—(Continued)

(in thousands, except share amounts)	Common Stock		Additional Paid-in Capital	Deferred Stock-Based Compensation	Accumulated Other Comprehensive Income (Loss)	Accumulated Deficit	Total Stockholders' Equity (Deficit)
	Shares	Amount					
Balances at December 31, 2009	656,084	$ —	$ 14,877	$ —	$ 1	$ (192,001)	$ (177,123)
Conversion of redeemable convertible preferred stock to common stock at initial public offering	37,183,523	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	(25)	—	(1)	—	—	—	(1)
Issuance of common stock from Initial public offering, net of issuance costs	14,375,000	15	210,766	—	—	—	210,781
Issuance of Common Stock upon exercise of stock options	606,963	1	707	—	—	—	708
Issuance of Common Stock to consultant	20,930	—	281	—	—	—	281
Issuance of Common Stock in connection with exercise of warrants	12,792	—	—	—	—	—	—
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	—	—	965	—	—	—	965
Other comprehensive loss	—	—	—	—	(22)	—	(22)
Net loss	—	—	—	—	—	(140,166)	(140,166)
Total comprehensive loss	—	—	—	—	—	—	(140,188)
Balances at December 31, 2010	52,855,267	$ 53	$612,001	$ —	$ (21)	$ (332,167)	$ 279,866

See accompanying notes to the consolidated financial statements.

PACIFIC BIOSCIENCES OF CALIFORNIA, INC.

Consolidated Statements of Stockholders' Equity (Deficit)—(Continued)

(in thousands, except share amounts)	Common Stock Shares	Common Stock Amount	Additional Paid-in Capital	Deferred Stock-Based Compensation	Accumulated Other Comprehensive Income (Loss)	Accumulated Deficit	Total Stockholders' Equity (Deficit)
Balances at December 31, 2010	52,855,267	$ 53	$612,001	$ —	$ (21)	$ (332,167)	$ 279,866
Issuance of Common Stock	2,108,503	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	—	—	238	—	—	—	238
Other comprehensive loss	—	—	—	—	78	—	78
Net loss	—	—	—	—	—	(109,388)	(109,388)
Total comprehensive loss	—	—	—	—	—	—	(109,310)
Balances at December 31, 2011	54,963,770	$ 55	$632,906	$ —	$ 57	$ (441,555)	$ 191,463

See accompanying notes to the consolidated financial statements.

PACIFIC BIOSCIENCES OF CALIFORNIA, INC.

Consolidated Statements of Cash Flows

(in thousands)	Years Ended December 31, 2011	2010	2009
Cash flows from operating activities			
Net loss	$(109,388)	$(140,166)	$(87,703)
Adjustments to reconcile net loss to net cash used in operating activities			
Depreciation and amortization	5,803	5,160	4,104
Stock-based compensation	12,384	9,690	3,630
Other items	226	459	194
Changes in assets and liabilities			
Accounts receivable	(4,216)	(341)	—
Inventory	(11,409)	(6,864)	—
Prepaid expenses and other assets	1,874	(1,336)	(30)
Accounts payable	(4,773)	3,637	3,891
Accrued expenses and other current liabilities	3,044	4,245	1,168
Deferred revenue	2,631	3,221	—
Lease incentives and other long-term liabilities	850	299	(92)
Net cash used in operating activities	(102,974)	(121,996)	(74,838)
Cash flows from investing activities			
Purchase of property and equipment	(9,284)	(5,259)	(5,177)
Purchase of investments	(264,071)	(180,964)	(25,429)
Sales of investments	36,520	—	—
Maturities of investments	243,281	47,973	49,200
Net cash provided by (used in) investing activities	6,446	(138,250)	18,594
Cash flows from financing activities			
Proceeds from issuance of Convertible Preferred Stock, net	—	106,145	68,010
Proceeds from issuance of Common Stock	7,743	1,738	311
Proceeds from exercise of Junior Preferred Stock options	—	—	1
Proceeds from issuance of Common stock in IPO, net of issuance costs	—	210,781	—
Repurchases of Common Stock	—	—	(8)
Payment of notes payable	—	—	(1,300)
Net cash provided by financing activities	7,743	318,664	67,014
Net (decrease) increase in cash and cash equivalents	(88,785)	58,418	10,770
Cash and cash equivalents at beginning of period	147,650	89,232	78,462
Cash and cash equivalents at end of period	$ 58,865	$ 147,650	$ 89,232
Supplemental disclosure of cash flow information			
Interest paid	$ —	$ —	$ (30)
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	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.

PACIFIC BIOSCIENCES OF CALIFORNIA, INC.

Notes to Consolidated Financial Statements

1. Overview

Pacific Biosciences of California, Inc., ("Pacific Biosciences", "PacBio", "we", "us") has commercialized a platform for single molecule, 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.

Initial Public Offering

On October 26, 2010, our registration statement on Form S-1 relating to our initial public offering ("IPO") was declared effective by the Securities and Exchange Commission ("SEC") and our IPO closed on November 1, 2010, whereby we sold 12,500,000 shares of common stock at a price of $16.00 per share. The shares began trading on the NASDAQ Global Select Market under the trading symbol "PACB" on October 27, 2010. Subsequently on November 1, 2010, our underwriters exercised their overallotment option to purchase an additional 1,875,000 shares of common stock at $16.00 per share, which transaction closed on November 4, 2010. We received net proceeds of approximately $210.8 million from the initial public offering, including proceeds from the underwriter overallotment option, net of underwriting discounts, commissions, and offering costs.

In connection with the IPO, all outstanding convertible preferred stock converted into common stock, warrants to purchase convertible preferred stock converted into warrants to purchase common stock, and the convertible preferred stock warrant liability were reclassified to stockholders' equity.

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 PacBio 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, the valuation of common and preferred stock prior to the IPO and related warrants and options, 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, other long-term assets, accounts payable, accrued expenses and other current liabilities, approximate fair value due to their short maturities. The carrying value of the facility financing obligation approximates fair value based on currently available borrowing rates and after consideration of non-performance risk and credit risk.

A fair value hierarchy was established under GAAP that 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 of 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 to be one in which transactions for the asset or liability occur with sufficient frequency and volume to provide pricing information on an ongoing basis, and view an inactive 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 and money market funds, which include bank deposits, 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 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 of 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.

	December 31, 2011				December 31, 2010			
	Level 1	Level 2	Level 3	Total	Level 1	Level 2	Level 3	Total
Assets								
Cash and money market funds	$44,200	$ —	$ —	$ 44,200	$118,462	$ —	$ —	$118,462
Certificates of deposits		4,034	—	4,034	—	—	—	—
Commercial paper	—	39,370	—	39,370	—	59,573	—	59,573
Corporate debt securities	—	37,386	—	37,386	—	49,970	—	49,970
Asset backed securities		9,909	—	9,909	—	—	—	—
U.S. government and agency securities	—	37,468	—	37,468	—	47,141	—	47,141
Total assets measured at fair value	$44,200	$128,167	$ —	$172,367	$118,462	$156,684	$ —	$275,146

During 2010 and 2009 we recognized a convertible preferred warrant liability. We classify our warrant liability within Level 3 and adjusted it for changes in fair value until our IPO, at which time all unexercised warrants were automatically converted into warrants to purchase common stock and the warrant liability was reclassified to additional paid-in capital. The change in the fair value of this convertible preferred stock warrant liability is summarized below (in thousands):

	2010	2009
Fair value at beginning of period	$ 226	$142
Change in fair value recorded in other expense, net	100	84
Liability reclassified to additional paid-in capital	(326)	—
Fair value at end of period	$ —	$226

Cash and cash equivalents

We consider all highly liquid investments purchased with an original maturity of three months or less to be cash equivalents. Cash equivalents consist of money market funds and commercial paper.

Investments

Our investments consist of U.S. treasury and U.S. government agency securities, asset backed securities, corporate notes and bonds, commercial paper, cash deposits and money market funds. 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. For securities sold prior to maturity, the cost of securities sold is based on the specific identification method. Realized gains and losses on the sale of investments are recorded in other income, net.

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, 2011, 2010 and 2009, we did not record any other-than-temporary impairment charges on our available for sale securities, because we do not intend to sell the security and it is not more likely than not that we will be required to sell these securities before the recovery of their amortized cost basis.

Concentration of Credit Risk

The carrying amounts for financial instruments consisting of cash and cash equivalents, accounts receivable, accounts payable and accrued liabilities approximate fair value due to their short maturities. Marketable securities are stated at their estimated fair values, based on quoted market prices for the same or similar instruments. 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 provided reserves for potential credit losses to date. As of December 31, 2011 and 2010, approximately 62% and 100%, respectively, of our accounts receivable were from domestic customers. 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. As of December 31, 2010, 100% of our net accounts receivable was from a single customer.

During the year ended December 31, 2011, domestic revenue accounted for 81% of total revenue. Prior to 2011, revenue consisted solely of U.S. government grant revenue.

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 generally stated at cost, net of accumulated depreciation. Depreciation is computed using the straight-line method over the estimated useful life of the asset, generally two to three years for computer equipment and 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 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 primarily 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 there are refund rights or payment terms 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 where revenue is derived from multiple deliverables including a mix of products 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 the control of the Company. 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 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 priced within a relatively narrow range. If there are not a sufficient number of standalone sales and VSOE cannot be determined, then we 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.

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 2011 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.

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. Because there is a market for options on our common stock, we have considered implied volatilities as well as our historical realized volatilities when developing an estimate of expected volatility. We estimate the term using historical data and peer data. 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.

Convertible Preferred Stock Warrants

Prior to our IPO in October 2010, we accounted for freestanding warrants to purchase shares of our convertible preferred stock at fair value on the balance sheet because we may have been obligated to redeem these warrants at some point in the future. The warrants were subject to remeasurement at each balance sheet date with changes in fair value recognized as other expense, net in the consolidated statement of operations. We continued to adjust the liability for changes in fair value until our IPO, at which time all unexercised warrants automatically converted into warrants to purchase common stock and the warrant liability was reclassified to additional paid-in capital.

Other Comprehensive Income (loss)

Other comprehensive income (loss) is comprised of unrealized gains (losses) on our investment securities. Total comprehensive income (loss) for all periods presented has been disclosed in the consolidated statements of stockholders’ equity (deficit).

Recent Accounting Pronouncements

In 2011 the FASB issued Accounting Standards Update No. 2011-04, Fair Value Measurement (Topic 820): Amendments to Achieve Common Fair Value Measurement and Disclosure Requirements in U.S. GAAP and IFRS. This update results in common principles and requirements for measuring fair value and for disclosing information about fair value measurements in accordance with U.S. GAAP and IFRS. ASU 2011-04 is required to be applied prospectively in interim and annual periods beginning after December 15, 2011. Early application is not permitted. The adoption of this amendment will not have a material effect on our Consolidated Financial Statements.

In 2011 the FASB issued Accounting Standards Update No. 2011-05, Comprehensive Income (Topic 220): Presentation of Comprehensive Income. This statement requires companies to present the components of other comprehensive income either in a single continuous statement of comprehensive income or in two separate but consecutive statements of net income and other comprehensive income. This statement is effective for interim and annual periods beginning after December 15, 2011. Full retrospective application is required. We will adopt this guidance beginning Q1 2012. The adoption of this amendment will not have a material effect on our Consolidated Financial Statements as the amendment impacts presentation only.

3. Investments

The following table summarizes our investments as of December 31, 2011 and 2010 (in thousands):

	As of December 31, 2011			
	Amortized Cost	Gross unrealized gains	Gross unrealized losses	Fair Value
Cash and cash equivalents:				
Cash and money market funds	$ 44,200	$ —	$ —	$ 44,200
Commercial paper	9,599	—	(1)	9,598
Total cash and cash equivalents	53,799	—	(1)	53,798
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	37,436	34	(3)	37,467
Total investments	118,512	120	(63)	118,569
Total cash, cash equivalents and investments	$172,311	$ 120	$ (64)	$172,367

	As of December 31, 2010			
	Amortized Cost	Gross unrealized gains	Gross unrealized losses	Fair Value
Investments:				
Commercial paper	$ 59,572	$ 1	$ —	$ 59,573
Corporate debt securities	49,987	11	(28)	49,970
U.S. government and agency securities	47,146	3	(8)	47,141
Total cash, cash equivalents and investments	$156,705	$ 15	$ (36)	$156,684

4. Balance Sheet Components

Inventory:

As of December 31, 2011 and 2010, our inventory, net consisted of the following components (in thousands):

	December 31,	
	2011	2010
Purchased materials	$ 5,273	$4,051
Work in process	5,347	2,813
Finished goods	4,897	—
Inventory, net	$15,517	$6,864

Property and Equipment:

As of December 31, 2011 and 2010, our property and equipment, net consisted of the following components (in thousands):

	December 31, 2011	December 31, 2010
Building	$ 1,160	$ 1,160
Laboratory equipment and machinery	15,664	10,998
Leasehold improvements	7,636	7,130
Computer equipment	3,450	3,033
Software	1,577	1,709
Furniture and fixtures	859	801
Construction in progress	3,222	8
	33,568	24,839
Less: Accumulated depreciation	(15,170)	(12,528)
Property and equipment, net	$ 18,398	$ 12,311

Depreciation expense during 2011, 2010 and 2009 was $5.8 million, $5.2 million and $4.1 million, respectively.

During December 2009, we entered into a lease agreement for a manufacturing and office facility, and in 2010 commenced renovations specific to our needs and operating requirements, including improvements and modifications to the facility's structure and principal operating systems. Pursuant to GAAP, this direct involvement renders us the owner of the facility for accounting purposes. Accordingly, upon commencement of construction activities, we recorded $1.2 million for the fair value of the facility within property and equipment, net with a corresponding liability recorded to facility financing obligation.

In addition, pursuant to the terms of the lease arrangement, the landlord provided incentives to fund aspects of the construction project totaling $1.8 million. The tenant improvement allowances afforded by the landlord are reflected on the balance sheet as a component of property and equipment. As we account for the leased facility as if we are the owner of the facility, we depreciate the assets over their expected useful lives.

Accrued liabilities and other current liabilities:

As of December 31, 2011 and 2010, our accrued expenses and other current liabilities consisted of the following (in thousands):

	December 31, 2011	December 31, 2010
Salaries and benefits	$ 5,284	$ 5,494
Professional services	1,915	659
Short-term portion of deferred rent	844	573
Customer deposits	1,503	—
Other	712	1,268
Accrued expenses and other current liabilities	$ 10,258	$ 7,994

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 2011 and 2010, we recognized $0.3 million and $0.2 million, respectively of interest expense in our consolidated statement of operations relating to the facility financing obligation.

As of December 31, 2011, the future minimum payments due under the facility financing obligation were as follows (in thousands):

	Financing obligation
2012	$ 415
2013	433
2014	452
2015	472
Total payments	1,772
Less amount representing interest	(997)
Total net payments under facility financing obligation	775
Property reverting to landlord	2,151
Present value of obligation	2,926
Less current portion of obligation	(140)
Long-term portion of obligation	$ 2,786

6. Commitments and Contingencies

Operating Lease Commitment

As of December 31, 2011 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 run have various options for renewal.

Rent expense for 2011, 2010, and 2009, was $2.8 million, $2.1 million, and $1.4 million, respectively. We are also required to pay our share of operating expenses with respect to the facilities in which we operate.

As of December 31, 2011, 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
2012	$ 3,560
2013	3,670
2014	3,780
2015	3,850
Total minimum lease payments	$14,860

License Agreements

We have entered into cancelable license agreements, as amended, with third parties for certain patent rights and technology. Under the terms of these agreements, we may be obligated to pay minimum royalty and license maintenance fees. License and maintenance fees for 2011, 2010 and 2009 were $0.3 million, $0.3 million, and $0.2 million, respectively.

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.

On August 27, 2010, we were named as a defendant in a complaint filed by Helicos Biosciences Corporation, or Helicos, alleging infringement of patents owned and in–licensed by the plaintiffs. Helicos seeks a permanent injunction enjoining us from further infringement of the asserted patents, and unspecified monetary damages. On October 22, 2010, Helicos filed an amended complaint naming additional defendants in the lawsuit. On November 8, 2010, we filed our answer to Helicos' complaint denying Helicos' allegations, asserting affirmative defenses of noninfringement, invalidity and unenforceability of the claims of the patents in suit, and asserting counterclaims for declaratory judgment that our products do not infringe the claims of the patents in suit, and that those claims are invalid and unenforceable. On December 16, 2011, the court granted Helicos' motion to file a second amended complaint adding Arizona Science and Technology Enterprises LLC d/b/a Arizona Technology Enterprises as an additional plaintiff in the lawsuit.

On October 21, 2011 and October 24, 2011 we and certain of our officers and directors were named in two identical purported class action lawsuits filed in the Superior Court of the State of California, County of San Mateo. Plaintiffs have brought claims alleging violation of several provisions of federal securities laws in connection with our August 16, 2010 registration statement (as amended, effective as of October 26, 2010) on behalf of all persons or entities who purchased Pacific Biosciences stock pursuant or traceable to our initial public offering and were damaged thereby. The complaints allege violations of the Securities Act of 1933 in connection with our initial public offering, arising out of alleged omissions and misrepresentations in our 2010 registration statement. The complaints seek, among other things, compensatory damages, rescission, and attorney's fees and costs.

On December 21, 2011, we and certain of our officers and directors were named in a purported class action lawsuit filed in United States District Court for the Northern District of California, on behalf of all persons or entities who bought Pacific Biosciences stock between October 27, 2010 and September 20, 2011. The complaint alleges violations of the Exchange Act of 1934, arising out of alleged misstatements or omissions by the Company and/or its employees during the class period. The complaint seeks, among other things, compensatory damages, rescission, and attorneys' fees and costs.

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. The complaint alleges that the director defendants breached various fiduciary duties owed to the Company, 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.

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. 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.

Despite our defenses and counterclaims, we cannot guarantee any outcome of any lawsuit. An estimate of the possible loss or possible range of loss associated with the resolution of the aforementioned contingencies cannot be provided with certainty or confidence, and therefore no estimate is provided 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 of these indemnification agreements is generally perpetual anytime 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 entered into indemnification agreements with our directors and officers that may require us to indemnify our directors and officers against liabilities that may arise by reason of their status or service as directors or officers, other than liabilities arising from willful misconduct of the individual. No liability associated with such indemnifications has been recorded at December 31, 2011.

7. 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,		
	2011	2010	2009
Statutory tax rate	(35.0)%	(35.0)%	(34.0)%
State tax rate, net of federal benefit	(5.0)	(5.7)	(5.8)
Stock-based compensation	2.0	1.6	1.0
Federal R&D credit	(2.8)	(2.0)	(2.6)
CA R&D credit	(2.3)	(1.1)	(1.8)
Other	0.0	0.2	0.3
Change in valuation allowance	43.1	43.5	42.9
Change of implied statutory tax rate to prior years	0.0	(1.5)	0.0
Effective income tax rate	0.0%	0.0%	0.0%

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

	December 31, 2011	December 31, 2010
Net operating loss carryforwards	$ 154,118	$ 117,031
Research and development credits	17,814	12,391
Depreciation	2,708	1,342
Accruals and reserves	6,170	4,282
Total deferred tax assets	180,810	135,046
Less: Valuation allowance	(180,810)	(135,046)
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. The valuation allowance increased $45.8 million, $61.0 million and $37.7 million during the years ended December 31, 2011, 2010 and 2009, respectively.

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, 2011.

As of December 31, 2011, we had federal and state net operating loss carryforwards of approximately $391.8 million and $375.2 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 $15.7 million, respectively, as of December 31, 2011. 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.

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 deferred tax asset balance as of December 31, 2011. The benefit of the federal and state net operating loss deferred tax assets of $3.2 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, 2011, our total unrecognized tax benefit was $9.3 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, 2008	$ 1,912
Increase in balance related to tax positions taken in prior year	2,025
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

Our practice is to recognize interest and/or penalties related to income tax matters in income tax expense. As of December 31, 2011 and 2010, 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, 2008 to present and December 31, 2007 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.

8. Convertible Preferred Stock

As of December 31, 2011 and 2010, there were no shares of convertible preferred stock issued or outstanding as all shares of preferred stock converted to shares of common stock upon completion of the IPO in 2010.

During June and July 2010, we issued an aggregate of 14.3 million shares of Series F convertible preferred stock at $7.63 per share and received proceeds of $106.1 million, net of issuance costs of $2.9 million, bringing our aggregate preferred stock outstanding at the time of the IPO to 74.4 million shares. Each share of convertible preferred stock converted on a two-for one basis into common stock upon the closing of our IPO declared effective by the SEC on October 26, 2010.

Warrants to Purchase Convertible Preferred Stock

In connection with loan and security agreements entered into in 2004 and 2006 which have since been fully repaid, we issued 50,569 warrants to purchase convertible preferred stock. The fair value of the warrants was estimated using the Black-Scholes valuation model at the dates of issuance and recorded as debt issuance costs that were amortized to interest expense over the contractual life of 7 years. The fair value of the warrants outstanding was recorded as a liability and revalued each subsequent reporting period with the resulting gains and losses recorded in other expense, net. In accordance with these revaluations, we recorded expense of approximately $0, $100,000 and $84,000 for the years ended December 31, 2011, 2010 and 2009.

We continued to adjust the liability for changes in fair value until the completion of our IPO, at which time all unexercised warrants converted into warrants to purchase 25,000 shares of common stock and the liability was reclassified to stockholders equity. At December 31, 2011 warrants to purchase 10,000 shares remain outstanding.

9. Common Stock

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, 2011 and 2010, 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.

Early Exercise of Employee Options

Stock options granted under the 2005 Stock Plan provide employee option holders the right to exercise unvested options in exchange for restricted common stock. The stock option tables in Note 10 include unvested shares which amounted to none, 169,000 and 59,000 at December 31, 2011, 2010, and 2009, respectively, which are subject to a repurchase right held by us at the original issuance price in the event the optionees' employment is terminated either voluntarily or involuntarily. Generally, this right lapses as to 25% on the first anniversary of the vesting start date and in 36 equal monthly amounts thereafter.

These repurchase terms are considered to be a forfeiture provision and do not result in variable accounting. The restricted shares issued upon early exercise of stock options are legally issued and outstanding. However, these restricted shares are only deemed outstanding for basic earnings per share computation purposes upon the respective repurchase rights lapsing. We treat cash received from employees for the exercise of unvested options as a refundable deposit shown as a liability in our balance sheets. As of December 31, 2011, 2010, and 2009, we included cash received for early exercise of options of none, $0.8 million and $0.2 million, respectively, in accrued liabilities. Amounts from accrued liabilities are transferred into common stock and additional paid-in capital as the shares vest.

10. Stock Option Plans

As of December 31, 2011, we had two active equity compensation plans, the 2010 Equity Incentive Plan, or 2010 Plan, and the 2010 Outside Director Equity Incentive Plan, or 2010 Director Plan, both 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.

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, 2011 we had reserved 3.7 million shares of common stock for issuance under the 2010 Plan.

We issue new shares of common stock upon exercise of stock options.

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, 2011 we had reserved 500,000 shares of common stock for issuance under the 2010 Director Plan.

2010 Employee Stock Purchase Plan

We adopted the 2010 Employee Stock Purchase Plan, or ESPP, in October 2010 under which 130,000 shares of our common stock have been reserved for issuance as of December 31, 2011. 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. Shares purchased and issued under the ESPP totaled 620,000 shares during 2011 at a weighted average price of $5.47 per share. We estimate the value of the employee stock purchase rights on the date of grant using the Black-Scholes option pricing model.

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

Stock Options

The following table summarizes stock option activity for all stock option plans for the year ended December 31, 2011:

		Common Stock Options Outstanding		
	Shares available for grant	Number of shares	Exercise price	Weighted average exercise price
Balances, December 31, 2008	976,522	4,959,748	$ 0.20 – 6.96	$ 3.22
Additional shares reserved	2,705,678			
Options granted	(1,786,251)	1,786,251	$ 3.86 – 8.50	$ 5.66
Options exercised	—	(89,241)	$ 0.26 – 6.96	$ 3.50
Options repurchased	5,177			
Options canceled	81,923	(81,923)	$ 1.96 – 6.96	$ 5.35
Balances, December 31, 2009	1,983,049	6,574,835	$ 0.20 – 8.50	$ 3.85
Additional shares reserved	5,500,000			
Options granted	(4,139,143)	4,139,143	$ 8.50 – 16.00	$ 10.85
Options exercised		(606,963)	$ 0.70 – 10.84	$ 2.86
Options canceled	293,642	(293,642)	$ 1.96 – 13.42	$ 6.84
Balances, December 31, 2010	3,637,548	9,813,373	$ 0.20 – 16.00	$ 6.78
Additional shares reserved				
Options granted	(3,824,220)	3,824,220	$ 2.61 – 15.98	$ 5.91
Options exercised	—	(1,488,930)	$ 0.20 – 10.84	$ 2.92
Options repurchased	851	—	$ —	$ —
Options canceled	1,626,970	(1,626,970)	$ 1.96 – 16.00	$ 8.95
Balances, December 31, 2011	1,441,149	10,521,693	$ 0.20 – 16.00	$ 6.69

On January 1, 2012, an additional 2.7 million shares were reserved under the 2010 Plan.

The following table summarizes information with respect to stock options outstanding and exercisable under the plans at December 31, 2011 (dollars in thousands, except per share values):

	Options vested and exercisable				
Exercise price	Number outstanding	Weighted average remaining contractual life (Years)	Weighted average exercise price	Number vested	Weighted average exercise price
$ 0.00 – 1.60	440,210	3.70	$ 0.60	440,210	$ 0.60
$ 1.60 – 2.80	1,219,557	5.28	$ 2.13	1,135,013	$ 2.11
$ 2.80 – 4.80	3,036,649	9.31	$ 3.42	404,066	$ 3.86
$ 4.81 – 6.40	818,771	8.44	$ 5.80	286,684	$ 5.64
$ 6.41 – 8.00	781,686	6.31	$ 6.96	593,553	$ 6.96
$ 8.01 – 9.60	1,711,502	7.90	$ 8.50	906,378	$ 8.50
$ 9.61 – 11.20	469,969	8.54	$ 10.80	172,623	$ 10.84
$11.20 – 12.80	956,099	9.05	$ 12.10	129,671	$ 12.68
$12.80 – 14.40	719,516	8.83	$ 13.69	155,676	$ 13.49
$14.41 – 16.00	367,734	8.86	$ 15.99	140,287	$ 16.00
	10,521,693		$ 6.69	4,364,161	$ 5.85

The aggregate intrinsic value of the outstanding and vested options presented in the table above totaled $1.8 million and $1.7 million, respectively. The aggregate intrinsic value represents the total pretax intrinsic value (i.e., the difference between $2.80, our closing stock price on the last trading day of our fourth quarter of 2011 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, 2011. The amount changes based on the fair market value of the Company's common stock.

The total intrinsic value of options exercised during the years ended December 31, 2011, 2010 and 2009 was $11.0 million, $6.0 million and $0.3 million, respectively.

Stock-based Compensation

Total stock-based compensation expense for employee stock options and stock purchases under the ESPP consists of the following (in thousands):

	Years Ended December 31,		
	2011	2010	2009
Cost of revenue	$ 490	$ —	$ —
Research and development	5,882	5,733	2,314
Sales, general and administrative	6,012	3,112	748
Total stock-based compensation expense	$12,384	$8,845	$3,062

Employee Stock-based Compensation

During the years ended December 31, 2011, 2010 and 2009, we granted stock options to purchase 3,824,220, 4,126,393 and 1,712,500 shares of common stock, respectively, to employees with a weighted-average grant date fair value of $3.33, $5.49 and $2.58 per share, respectively. As of December 31, 2011 there was unrecognized compensation costs of $24.9 million related to these stock options. We expect to recognize those costs over a weighted-average period of 3.2 years as of December 31, 2011. Future option grants will increase the amount of compensation expense to be recorded in those future periods.

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

	Years ended December 31,		
	2011	2010	2009
Expected term	6.1 years	6.0 years	5.7 years
Expected volatility	56 - 65%	46 - 55%	46 - 48%
Risk-free interest rate	1.2 -2.6%	1.6 -2.7%	1.8 -3.0%
Dividend yield	—	—	—

Expected term — Expected term represents the period that our stock-based awards are expected to be outstanding. Our assumptions about the expected term have been on our historic cancellation and exercise experience and trends as well as our expectations for future periods.

Expected volatility — We do not have sufficient trading history to use the volatility of our own common stock for establishing expected volatility. Therefore, we base our expected volatility on the stock volatilities of certain publicly listed peer companies.

Risk-free interest rate — The risk-free interest rate is based on the U.S. Treasury yield curve in effect at the time of grant for zero coupon U.S. Treasury notes with maturities approximately equal to the option's expected term.

Dividend yield — We have never paid dividends and do not expect to pay dividends for the foreseeable future.

Fair value of common stock — 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.

Forfeiture rate — 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.

Each of the inputs discussed above is subjective and generally requires significant management assumptions and estimates to determine and use of different assumptions or estimates could result in materially different results.

Stock-based Compensation Associated with Junior Preferred Stock

In connection with our equity restructuring in 2005 in which all authorized and issued shares of common stock were converted into shares of junior preferred stock, all outstanding options to purchase common stock were converted into options to purchase junior preferred stock. We recorded deferred stock-based compensation of $5.6 million in connection with the exchange of common stock options for junior preferred stock options which was fully amortized during 2009 as all the options became fully vested. As a result of a repricing which occurred in 2005, we applied variable accounting to the junior preferred stock options resulting in additional stock-based compensation of $0.0 million, $0.8 million and $0.5 million for the years ended December 31, 2011, 2010 and 2009, respectively.

Options Granted to Non-employees

During the years ended December 31, 2011, 2010 and 2009 we granted options to purchase 60,000, 12,750 and 73,750 shares of common stock, respectively, to non-employees at exercise prices ranging from $3.30 to $13.50 per share.

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 $0.2 million, $1.0 million and $0.4 million, for the years ended December 31, 2011, 2010 and 2009, 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 using the following assumptions:

	Years ended December 31,		
	2011	2010	2009
Contractual life	10 years	10 years	10 years
Expected volatility	56% -65%	60% -75%	75%
Risk-free interest rate	1.7 –3.5%	3.3 –3.9%	2.8 –3.7%
Dividend yield	—	—	—

Shares Reserved for Future Issuance

As of December 31, 2011 and 2010 we had reserved shares of Common Stock for issuance as follows (in thousands):

	December 31, 2011	December 31, 2010
Exercise of Options	11,963	13,451
Exercise of warrants	10	10
	11,973	13,461

11. Employee Benefit and Employee Stock Purchase Plan

Retirement Plans

We maintain a 401(k) Plan to provide tax deferred salary deductions for all eligible employees. Participants may make voluntary contributions to the 401(k) Plan up to 90% of their eligible compensation, limited by certain Internal Revenue Service restrictions. We do not match employee contributions.

Employee Stock Purchase Plan

Upon the effectiveness of our IPO in October 2010, we adopted the 2010 Employee Stock Purchase Plan, or ESPP. We reserved a total of 750,000 shares of common stock for issuance under the ESPP. We issue new shares of common stock upon the purchase of the option. 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. For the years ended December 31, 2011 and 2010, 620,424 and no shares of common stock were purchased under the Plan, respectively.

Under the ESPP, rights to purchase shares are generally granted during the first and third quarter of each year. The fair value of rights granted under the ESPP was estimated at the date of grant using the Black-Scholes option-pricing model. The estimated weighted average value of rights granted under the Employee Stock Purchase Plan during 2011 and 2010 was $3.54 and $6.34, respectively. The fair value of rights granted during 2011 and 2010 were estimated at the date of grant using the following weighted-average assumptions:

	December 31, 2011	December 31, 2010
Expected term	0.5 - 2.0 years	1.3 years
Expected volatility	60 - 85%	55%
Risk-free interest rate	0.1 - 0.4%	0.3%
Expected Dividend yield	—	—

Expected term — Expected term represents the period that awards are expected to be outstanding and correlate to the respective offering periods of the rights granted.

Expected volatility — The expected volatility was based on the historical stock volatilities of several publicly listed comparable companies over a period equal to the expected terms of the options, as we do not have any trading history to use the volatility of our own common stock.

Risk-free interest rate — The risk-free interest rate is based on the U.S. Treasury yield curve in effect at the time of grant for zero coupon U.S. Treasury notes with maturities approximately equal to the award's expected term.

Expected dividend yield — We have never paid dividends and do not expect to pay dividends.

12. Net Loss Per Share

We calculate basic net loss per share by dividing the net loss by the weighted-average number of unrestricted common shares outstanding for the period, without consideration of potentially dilutive securities. Diluted net loss per share is computed by dividing the net loss by the weighted-average number of unrestricted common shares and potentially dilutive securities outstanding for the period, determined using the treasury-stock method and the as if converted method. For purposes of this calculation, convertible preferred stock, stock options and common stock subject to repurchase, and warrants are considered to be potentially dilutive securities and are only included in the calculation of diluted net loss per share when their effect is dilutive.

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

	Years Ended December 31, 2011	2010	2009
Net loss per share:			
Numerator			
Net loss	$(109,388)	$(140,166)	$(87,703)
Denominator:			
Weighted average shares of common stock outstanding	53,874	10,024	602
Less: Shares of common stock subject to repurchase	—	(86)	(95)
Weighted average shares used in computation of basic and diluted net loss per share	53,874	9,938	507
Basic and diluted net loss per share	$ (2.03)	$ (14.10)	$(173.03)

The following convertible preferred stock, 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 including them would have had an anti-dilutive effect:

	Years Ended December 31, (in thousands) 2011	2010	2009
Convertible Preferred Stock (on an as if converted basis)	—	—	30,051
Options outstanding	10,522	9,813	6,575
Common Stock subject to repurchase	—	169	59
Warrants to purchase Common Stock	10	10	25

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 us for long-term success. The costs associated with this restructuring consist 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 accrued restructuring expense and accrued restructuring liability as of December 31, 2011 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

With respect to our workforce reduction, we do not expect to incur further restructuring charges. We expect the termination benefits to be paid during the first quarter of 2012.

14. Segment 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 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 and 2009 of $1.7 million and $0.1 million, respectively, was based in the United States of America.

15. Subsequent Event

On January 5, 2012, Hugh Martin resigned from his positions as the President and Chief Executive Officer of the Company effective immediately. Mr. Martin will remain as a director on the Board of Directors of the Company (the "Board") until the Company's 2012 annual meeting of stockholders and has agreed to resign from the Board effective as of the date of such meeting.

On January 5, 2012, the Board appointed Dr. Michael Hunkapiller as the Company's President and Chief Executive Officer effective immediately. Dr. Hunkapiller will also continue in his position as the Executive Chairman of the Board, to which he was appointed during October 2011.

16. Quarterly Financial Data (unaudited)

The following table summarizes the unaudited quarterly financial data for the last two fiscal years.

	Fiscal 2011 Quarter Ended			
(In thousands, except per share data)	**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)

	Fiscal 2010 Quarter Ended			
	March 31,	**June 30,**	**September 30,**	**December 31,**
Total operating expenses	$ 30,819	$ 33,304	$ 40,916	$ 36,869
Loss from operations	(30,274)	(32,675)	(40,696)	(36,589)
Net loss	(30,325)	(32,714)	(40,708)	(36,419)
Basic and diluted net loss per share of Common Stock	$ (48.97)	$ (49.76)	$ (39.70)	$ (0.97)

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 for the fiscal year ending December 31, 2011. 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, 2011 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, 2011.

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, 2011, has been audited by Ernst &Young LLP, our independent registered public accounting firm, as stated in their report which is included as follows.

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, 2011, 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, 2011, 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 sheet of Pacific Biosciences of California, Inc. as of December 31, 2011, and the related consolidated statements of operations, stockholders' equity, and cash flows for the year then ended of Pacific Biosciences of California, Inc. and our report dated February 29, 2012 expressed an unqualified opinion thereon.

/s/ Ernst & Young LLP

Redwood City, California
February 29, 2012

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 2012 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 2012 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 2012 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 2012 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 2012 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.

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 February 29, 2012.

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 registration statement 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	February 29, 2012
/s/ SUSAN K. BARNES Susan K. Barnes	Executive Vice President and Chief Financial Officer	February 29, 2012
/s/ Brian B. Dow Brian B. Dow	Vice President, Finance and Principal Accounting Officer	February 29, 2012
/s/ Brook Byers Brook Byers	Director	February 29, 2012
/s/ William W. Ericson William W. Ericson	Director	February 29, 2012
/s/ Randall S. Livingston Randall S. Livingston	Director	February 29, 2012
/s/ Hugh C. Martin Hugh C. Martin	Director	February 29, 2012

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Signature	Title	Date
/s/ Marshall L. Mohr Marshall L. Mohr	Director	February 29, 2012
/s/ Susan Siegel Susan Siegel	Director	February 29, 2012
/s/ David B. Singer David B. Singer	Director	February 29, 2012

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
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
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

Exhibit Number	Description	Incorporated by reference herein Form	Exhibit No.	Filing Date
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
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

Exhibit Number	Description	Incorporated by reference herein Form	Exhibit No.	Filing Date
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			
10.32+	Employment Agreement by and between the registrant and Michael Hunkapiller dated January 5, 2012			
10.33+	Change in Control Severance Agreement by and between the registrant and Michael Hunkapiller dated January 5, 2012			
10.34+	Change in Control Severance Agreement by and between the registrant and Michael Glynn effective August 31, 2011			
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			
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.

SEPARATION AGREEMENT AND RELEASE

This Separation Agreement and Release ("Agreement") is made by and between **Hugh Martin** ("Executive") and **Pacific Biosciences of California, Inc.** (the "Company") (collectively referred to as the "Parties" or individually referred to as a "Party").

RECITALS

WHEREAS, Executive was employed by the Company as its Chief Executive Officer pursuant to an employment agreement dated September 16, 2010 (the "**Employment Agreement**");

WHEREAS, Executive signed an Employee Proprietary Information and Inventions Assignment Agreement with the Company on March 13, 2004 (the "**Confidentiality Agreement**");

WHEREAS, the Company and Executive entered into a Change in Control Severance Agreement dated September 16, 2010 (the "**Change in Control Agreement**");

WHEREAS, the Company and Executive have entered into Stock Option Agreements, dated May 19, 2004, September 8, 2005, June 21, 2007, March 19, 2009, February 17, 2010, August 12, 2010, and October 26, 2010, granting Executive the option to purchase shares of the Company's common stock (on an as-converted basis) subject to the terms and conditions of the Company's 2004 Equity Incentive Plan, the Company's 2005 Stock Plan, the Company's 2010 Equity Incentive Plan, and the Stock Option Agreements (collectively the "**Stock Agreements**");

WHEREAS, Executive serves as a member of the Company's Board of Directors (the "**Board**") pursuant to his Employment Agreement;

WHEREAS, the Parties agree that Executive will resign his Board membership effective as of the date of the Company's 2012 annual meeting (the "**Board Resignation Date**");

WHEREAS, Executive resigned his employment with the Company effective January 5, 2012 (the "**Resignation Date**"); and

WHEREAS, the Parties wish to resolve any and all disputes, claims, complaints, grievances, charges, actions, petitions, and demands that the Executive may have against the Company and any of the Releasees as defined below, including, but not limited to, any and all claims arising out of or in any way related to Executive's employment with or separation from the Company;

NOW, THEREFORE, in consideration of the mutual promises made herein, the Company and Executive hereby agree as follows:

COVENANTS

1. Consideration.

a. Post-Employment Consulting Services. Conditioned upon Executive's timely signature and non-revocation of this Agreement, the Company agrees to retain Executive to perform services for the Company as a Consultant, in which role he shall provide consulting services (the "Consulting Services") to the Company as an independent contractor pursuant to the terms of the Consulting Agreement attached hereto as Exhibit A (the "Consulting Agreement"). Nothing in this Agreement or the Consulting Agreement pertaining to Executive's anticipated role as a Consultant shall in any way be construed to constitute Executive as a continuing agent, officer, employee, or representative of the Company after the Resignation Date, but Executive shall perform the services under the Consulting Agreement solely as an independent contractor.

b. Stock Option Acceleration. Subject to the Agreement becoming effective and irrevocable, Executive shall be entitled to accelerated vesting of those unvested options under the Stock Option Agreements that would have vested had Executive continued his employment with the Company through the six (6) month anniversary of the Resignation Date. Inclusive of the accelerated vesting described in the preceding sentence, Executive acknowledges that he will have vested in 669,996 stock options and no more as of his Resignation Date. Notwithstanding any provision to the contrary in the Stock Agreements, Executive agrees that the unvested portion of his outstanding options shall terminate as of his Resignation Date. The exercise of Executive's vested options and shares shall continue to be governed by the terms and conditions of the Company's Stock Agreements.

c. Payment. The Company agrees to pay Executive a lump sum equivalent to twelve (12) months of Executive's base salary, for a total of Three Hundred Thousand Dollars ($300,000), less applicable withholding. This payment will be made to Executive within ten (10) business days after the Effective Date of this Agreement. Executive acknowledges and agrees that the consideration provided to him hereunder fully satisfies any obligation that the Company had to pay Executive wages or any other compensation for any of the services that Executive rendered to the Company, and that the amount paid is in excess of any disputed wage claim, if any, that Executive may have. To the extent any wage dispute exists, Executive specifically acknowledges that the consideration paid shall be deemed to be paid first in satisfaction of any disputed wage claim with the remainder sufficient to act as consideration for the release of claims set forth herein, and that Executive has not earned and is not entitled to receive any additional wages or other form of compensation from the Company.

d. COBRA. The Company shall reimburse Executive for, or pay directly on Executive's behalf, continuation coverage for group health insurance for Executive and his eligible dependents under the Consolidated Omnibus Budget Reconciliation Act of 1985, as amended or the applicable state equivalent (together, "COBRA") for a period equal to the earliest to occur of (A) the thirty-six (36) month anniversary of the Resignation Date, (B) the date Executive and his eligible dependents are no longer eligible to receive continuation coverage pursuant under COBRA, and (C) the date Executive is eligible to receive coverage under the plan(s) of another employer (the "COBRA Reimbursement Benefit").

2. Severance. In exchange for and conditioned upon Executive's execution and non-revocation of a Supplemental Release within two weeks of the Termination Date of the Consulting Agreement, the form of which is attached hereto as Exhibit B (the "Supplemental Release"), the Company agrees to pay Executive a lump sum equivalent to Thirty Thousand Dollars, $30,000 (the "Severance Payment") within ten (10) business days after the Effective Date of the Supplemental Release. The Company will provide Executive with a Form 1099 in connection with the Severance Payment.

3. Board Resignation/10b5-1 Trading Plan. Executive hereby agrees to resign his position as a member of the Board effective on the date of the Company's 2012 annual meeting, by executing the resignation letter attached as Exhibit C to this Agreement. From the date of this Agreement through the Board Resignation Date, Executive agrees to conduct all stock trading exclusively through a 10b5-1 trading plan and in compliance with the Company's Insider Trading Policy then in effect.

4. Benefits. Executive's health insurance benefits shall cease on the last day of January 2012, subject to Executive's right to continue his health insurance under COBRA. Executive's participation in all benefits and incidents of employment, including, but not limited to, vesting in stock options, and the accrual of bonuses, vacation, and paid time off, ceased as of the Resignation Date.

5. Payment of Salary and Receipt of All Benefits. Executive acknowledges and represents that, other than the consideration and the severance set forth in this Agreement, the Company has paid or provided all salary, wages, bonuses, accrued vacation/paid time off, premiums, leaves, housing allowances, relocation costs, interest, severance, outplacement costs, fees, reimbursable expenses, commissions, stock, stock options, vesting, and any and all other benefits and compensation due to Executive. Executive further acknowledges and represents that he has received any leave to which he was entitled or which he requested, if any, under the California Family Rights Act and/or the Family Medical Leave Act, and that, except as otherwise reported in writing to appropriate Company personnel as of the Termination Date, he did not sustain any workplace injury, during his employment with the Company.

6. Release of Claims. Executive agrees that the foregoing consideration represents settlement in full of all outstanding obligations owed to Executive by the Company and its current and former officers, directors, employees, agents, investors, attorneys, shareholders, administrators, affiliates, benefit plans, plan administrators, insurers, trustees, divisions, and subsidiaries, and predecessor and successor corporations and assigns (collectively, the "Releasees"). Executive, on his own behalf and on behalf of his respective heirs, family members, executors, agents, and assigns, hereby and forever releases the Releasees from, and agrees not to sue concerning, or in any manner to institute, prosecute, or pursue, any claim, complaint, charge, duty, obligation, demand, or cause of action relating to any matters of any kind, whether presently known or unknown, suspected or unsuspected, that Executive may possess against any of the Releasees arising from any omissions, acts, facts, or damages that have occurred up until and including the Effective Date of this Agreement, including, without limitation:

a. any and all claims relating to or arising from Executive's employment relationship with the Company and the termination of that relationship;

b. any and all claims relating to, or arising from, Executive's right to purchase, or actual purchase of shares of stock of the Company, including, without limitation, any claims for fraud, misrepresentation, breach of fiduciary duty, breach of duty under applicable state corporate law, and securities fraud under any state or federal law;

c. any and all claims for wrongful discharge of employment; termination in violation of public policy; discrimination; harassment; retaliation; breach of contract, both express and implied; breach of covenant of good faith and fair dealing, both express and implied;

promissory estoppel; negligent or intentional infliction of emotional distress; fraud; negligent or intentional misrepresentation; negligent or intentional interference with contract or prospective economic advantage; unfair business practices; defamation; libel; slander; negligence; personal injury; assault; battery; invasion of privacy; false imprisonment; conversion; and disability benefits;

d. any and all claims for violation of any federal, state, or municipal statute, including, but not limited to, Title VII of the Civil Rights Act of 1964; the Civil Rights Act of 1991; the Rehabilitation Act of 1973; the Americans with Disabilities Act of 1990; the Equal Pay Act; the Fair Labor Standards Act; the Fair Credit Reporting Act; the Age Discrimination in Employment Act of 1967; the Older Workers Benefit Protection Act; the Employee Retirement Income Security Act of 1974; the Worker Adjustment and Retraining Notification Act; the Family and Medical Leave Act; the Sarbanes-Oxley Act of 2002; the Immigration Control and Reform Act; the California Family Rights Act; the California Labor Code; the California Workers' Compensation Act; and the California Fair Employment and Housing Act;

e. any and all claims for violation of the federal or any state constitution;

f. any and all claims arising out of any other laws and regulations relating to employment or employment discrimination;

g. any claim for any loss, cost, damage, or expense arising out of any dispute over the nonwithholding or other tax treatment of any of the proceeds received by Executive as a result of this Agreement; and

h. any and all claims for attorneys' fees and costs.

Executive agrees that the release set forth in this section shall be and remain in effect in all respects as a complete general release as to the matters released. This release does not extend to any obligations incurred under this Agreement. This release does not release claims that cannot be released as a matter of law, including, but not limited to, Executive's right to file a charge with or participate in a charge by the Equal Employment Opportunity Commission, or any other local, state, or federal administrative body or government agency that is authorized to enforce or administer laws related to employment, against the Company (with the understanding that any such filing or participation does not give Executive the right to recover any monetary damages against the Company; Executive's release of claims herein bars Executive from recovering such monetary relief from the Company). Notwithstanding the foregoing, Executive acknowledges that any and all disputed wage claims that are released herein shall be subject to binding arbitration as provided herein, except as required by applicable law. Executive represents that he has made no assignment or transfer of any right, claim, complaint, charge, duty, obligation, demand, cause of action, or other matter waived or released by this Section.

7. Acknowledgment of Waiver of Claims under ADEA. Executive understands and acknowledges that he is waiving and releasing any rights he may have under the Age Discrimination in Employment Act of 1967 ("ADEA"), and that this waiver and release is knowing and voluntary. Executive agrees that this waiver and release does not apply to any rights or claims that may arise under the ADEA after the Effective Date of this Agreement. Executive understands and acknowledges that the consideration given for this waiver and release is in addition to anything of value to which Executive was already entitled. Executive further understands and acknowledges

that he has been advised by this writing that: (a) he should consult with an attorney prior to executing this Agreement; (b) he has twenty-one (21) days within which to consider this Agreement; (c) he has seven (7) days following his execution of this Agreement to revoke this Agreement; (d) this Agreement shall not be effective until after the revocation period has expired; and (e) nothing in this Agreement prevents or precludes Executive from challenging or seeking a determination in good faith of the validity of this waiver under the ADEA, nor does it impose any condition precedent, penalties, or costs for doing so, unless specifically authorized by federal law. In the event Executive signs this Agreement and returns it to the Company in less than the 21-day period identified above, Executive hereby acknowledges that he has freely and voluntarily chosen to waive the time period allotted for considering this Agreement. The Parties agree that any changes to this Agreement, whether material or immaterial, do not restart the running of the 21-day period.

8. California Civil Code Section 1542. Executive acknowledges that he has been advised to consult with legal counsel and is familiar with the provisions of California Civil Code Section 1542, a statute that otherwise prohibits the release of unknown claims, which provides as follows:

> A GENERAL RELEASE DOES NOT EXTEND TO CLAIMS WHICH THE CREDITOR DOES NOT KNOW OR SUSPECT TO EXIST IN HIS OR HER FAVOR AT THE TIME OF EXECUTING THE RELEASE, WHICH IF KNOWN BY HIM OR HER MUST HAVE MATERIALLY AFFECTED HIS OR HER SETTLEMENT WITH THE DEBTOR.

Executive, being aware of said code section, agrees to expressly waive any rights he may have thereunder, as well as under any other statute or common law principles of similar effect.

9. No Pending or Future Lawsuits. Executive represents that he has no lawsuits, claims, or actions pending in his name, or on behalf of any other person or entity, against the Company or any of the other Releasees. Executive also represents that he does not intend to bring any claims on his own behalf or on behalf of any other person or entity against the Company or any of the other Releasees.

10. No Employment. Executive understands and agrees that, as a condition of this Agreement, Executive shall not be entitled to any employment with the Company, and Executive hereby waives any right, or alleged right, of employment or re-employment with the Company.

11. Confidentiality. Executive agrees to maintain in complete confidence the existence of this Agreement, the contents and terms of this Agreement, and the consideration for this Agreement (hereinafter collectively referred to as “Separation Information”). Except as required by law, Executive may disclose Separation Information only to his immediate family members, the arbitrator or a court of competent jurisdiction in any proceedings to enforce the terms of this Agreement, Executive’s attorney(s), and Executive’s accountant and any professional tax advisor to the extent that they need to know the Separation Information in order to provide advice on tax treatment or to prepare tax returns, and must prevent disclosure of any Separation Information to all other third parties. Executive agrees that he will not publicize, directly or indirectly, any Separation Information.

12. Trade Secrets and Confidential Information/Company Property. With the exception of the second and third sentences of Paragraph 4 of the Confidentiality Agreement which are expressly superseded and replaced by Paragraph 17 of this Agreement, Executive reaffirms and agrees to observe and abide by the terms of the Confidentiality Agreement, specifically including the provisions therein regarding nondisclosure of the Company's trade secrets and confidential and proprietary information, and nonsolicitation of Company employees. Executive's signature below constitutes his certification under penalty of perjury that, except for any items that have been expressly given to Executive by the Company to keep, he has returned all documents and other items provided to Executive by the Company, developed or obtained by Executive in connection with his employment with the Company, or otherwise belonging to the Company.

13. No Cooperation. Executive agrees that he will not knowingly encourage, counsel, or assist any attorneys or their clients in the presentation or prosecution of any disputes, differences, grievances, claims, charges, or complaints by any third party against any of the Releasees, unless under a subpoena or other court order to do so or as related directly to the ADEA waiver in this Agreement. Executive agrees both to immediately notify the Company upon receipt of any such subpoena or court order, and to furnish, within three (3) business days of its receipt, a copy of such subpoena or other court order. If approached by anyone for counsel or assistance in the presentation or prosecution of any disputes, differences, grievances, claims, charges, or complaints against any of the Releasees, Executive shall state no more than that he cannot provide counsel or assistance.

14. Mutual Nondisparagement. Executive agrees to refrain from any disparagement, defamation, libel, or slander of any of the Releasees, and agrees to refrain from any tortious interference with the contracts and relationships of any of the Releasees. The Company agrees to refrain from any disparaging statements about Executive. Executive understands that the Company's obligations under this paragraph extend only to the Company's current executive officers and members of its Board of Directors and only for so long as each officer or member is an employee or Director of the Company. Executive shall direct any inquiries by potential future employers to the Company's human resources department.

15. Breach. In addition to the rights provided in the "Attorneys' Fees" section below, Executive acknowledges and agrees that any material breach of this Agreement, unless such breach constitutes a legal action by Executive challenging or seeking a determination in good faith of the validity of the waiver herein under the ADEA, or of any provision of the Confidentiality Agreement shall entitle the Company immediately to recover and/or cease providing the consideration provided to Executive under this Agreement and to obtain damages, except as provided by law.

16. No Admission of Liability. Executive understands and acknowledges that this Agreement constitutes a compromise and settlement of any and all actual or potential disputed claims by Executive. No action taken by the Company hereto, either previously or in connection with this Agreement, shall be deemed or construed to be (a) an admission of the truth or falsity of any actual or potential claims or (b) an acknowledgment or admission by the Company of any fault or liability whatsoever to Executive or to any third party.

17. Nonsolicitation. Executive agrees that for a period of eighteen (18) months immediately following the Effective Date of this Agreement, Executive shall not directly or indirectly solicit or attempt to solicit any employee, independent contractor or consultant of the Company to terminate his or her relationship with the Company in order to become an employee, consultant or independent contractor to or for any other person or entity.

18. Costs. The Parties shall each bear their own costs, attorneys' fees, and other fees incurred in connection with the preparation of this Agreement.

19. ARBITRATION. THE PARTIES AGREE THAT ANY AND ALL DISPUTES ARISING OUT OF THE TERMS OF THIS AGREEMENT, THEIR INTERPRETATION, AND ANY OF THE MATTERS HEREIN RELEASED, SHALL BE SUBJECT TO ARBITRATION IN SAN MATEO COUNTY, BEFORE JUDICIAL ARBITRATION & MEDIATION SERVICES ("JAMS"), PURSUANT TO ITS EMPLOYMENT ARBITRATION RULES & PROCEDURES ("JAMS RULES"). THE ARBITRATOR MAY GRANT INJUNCTIONS AND OTHER RELIEF IN SUCH DISPUTES. THE ARBITRATOR SHALL ADMINISTER AND CONDUCT ANY ARBITRATION IN ACCORDANCE WITH CALIFORNIA LAW, INCLUDING THE CALIFORNIA CODE OF CIVIL PROCEDURE, AND THE ARBITRATOR SHALL APPLY SUBSTANTIVE AND PROCEDURAL CALIFORNIA LAW TO ANY DISPUTE OR CLAIM, WITHOUT REFERENCE TO ANY CONFLICT-OF-LAW PROVISIONS OF ANY JURISDICTION. TO THE EXTENT THAT THE JAMS RULES CONFLICT WITH CALIFORNIA LAW, CALIFORNIA LAW SHALL TAKE PRECEDENCE. THE DECISION OF THE ARBITRATOR SHALL BE FINAL, CONCLUSIVE, AND BINDING ON THE PARTIES TO THE ARBITRATION. THE PARTIES AGREE THAT THE PREVAILING PARTY IN ANY ARBITRATION SHALL BE ENTITLED TO INJUNCTIVE RELIEF IN ANY COURT OF COMPETENT JURISDICTION TO ENFORCE THE ARBITRATION AWARD. THE PARTIES TO THE ARBITRATION SHALL EACH PAY AN EQUAL SHARE OF THE COSTS AND EXPENSES OF SUCH ARBITRATION, AND EACH PARTY SHALL SEPARATELY PAY FOR ITS RESPECTIVE COUNSEL FEES AND EXPENSES; PROVIDED, HOWEVER, THAT THE ARBITRATOR SHALL AWARD ATTORNEYS' FEES AND COSTS TO THE PREVAILING PARTY, EXCEPT AS PROHIBITED BY LAW. THE PARTIES HEREBY AGREE TO WAIVE THEIR RIGHT TO HAVE ANY DISPUTE BETWEEN THEM RESOLVED IN A COURT OF LAW BY A JUDGE OR JURY. NOTWITHSTANDING THE FOREGOING, THIS SECTION WILL NOT PREVENT EITHER PARTY FROM SEEKING INJUNCTIVE RELIEF (OR ANY OTHER PROVISIONAL REMEDY) FROM ANY COURT HAVING JURISDICTION OVER THE PARTIES AND THE SUBJECT MATTER OF THEIR DISPUTE RELATING TO THIS AGREEMENT AND THE AGREEMENTS INCORPORATED HEREIN BY REFERENCE. SHOULD ANY PART OF THE ARBITRATION AGREEMENT CONTAINED IN THIS PARAGRAPH CONFLICT WITH ANY OTHER ARBITRATION AGREEMENT BETWEEN THE PARTIES, THE PARTIES AGREE THAT THIS ARBITRATION AGREEMENT SHALL GOVERN.

20. Tax Consequences. The Company makes no representations or warranties with respect to the tax consequences of the payments and any other consideration provided to Executive or made on his/her behalf under the terms of this Agreement. Executive agrees and understands that he/she is responsible for payment, if any, of local, state, and/or federal taxes on the payments and any other consideration provided hereunder by the Company and any penalties or assessments thereon. Executive further agrees to indemnify and hold the Company harmless from any claims, demands, deficiencies, penalties, interest, assessments, executions, judgments, or recoveries by any government agency against the Company for any amounts claimed due on account of (a) Executive's failure to pay or delayed payment of federal or state taxes, or (b) damages sustained by the Company by reason of any such claims, including attorneys' fees and costs.

21. Section 409A. If the Company determines that any cash severance benefits, health continuation coverage, or additional benefits provided under this Agreement shall fail to satisfy the distribution requirement of Section 409A(a)(2)(A) or the Internal Revenue Code of 1986, as amended (the "Code") as result of Section 409A(a)(2)(B)(i) of the Code, the payment of such benefit shall be accelerated to the minimum extent necessary so that the benefit is not subject to the provisions of Section 409(a)(1) of the Code. (It is the intention of the preceding sentence to apply the short-term deferral provisions of Section 409A of the Code, and the regulations and other guidance thereunder, to such payments, and the payment schedule as revised after the application of the preceding sentence shall be referred to as the "Revised Payment Schedule.") However, if there is no Revised Payment Schedule that would avoid the application of Section 409A(a)(1) of the Code, the payment of such benefits shall not be paid pursuant to a Revised Payment Schedule and instead shall be delayed to the minimum extent necessary so that such benefits are not subject to the provisions of section 409A(a)(1) of the Code. The Company may attach conditions to or adjust the amounts paid pursuant to this paragraph to preserve, as closely as possible, the economic consequences that would have applied in the absence of this paragraph; *provided*, *however*, that no such condition or adjustment shall result in the payments being subject to Section 409A(a)(1) of the Code.

22. Indemnification. Executive agrees to indemnify and hold harmless the Company from and against any and all loss, costs, damages, or expenses, including, without limitation, attorneys' fees or expenses incurred by the Company arising out of the breach of this Agreement by Executive, or from any false representation made herein by Executive, or from any action or proceeding that may be commenced, prosecuted, or threatened by Executive or for Executive's benefit, upon Executive's initiative, direct or indirect, contrary to the provisions of this Agreement. Executive further agrees that in any such action or proceeding, this Agreement may be pled by the Company as a complete defense, or may be asserted by way of counterclaim or cross-claim.

23. Authority. The Company represents and warrants that the undersigned has the authority to act on behalf of the Company and to bind the Company and all who may claim through it to the terms and conditions of this Agreement. Executive represents and warrants that he has the capacity to act on his own behalf and on behalf of all who might claim through him to bind them to the terms and conditions of this Agreement. Each Party warrants and represents that there are no liens or claims of lien or assignments in law or equity or otherwise of or against any of the claims or causes of action released herein.

24. No Representations. Executive represents that he has had an opportunity to consult with an attorney, and has carefully read and understands the scope and effect of the provisions of this Agreement. Executive has not relied upon any representations or statements made by the Company that are not specifically set forth in this Agreement.

25. Severability. In the event that any provision or any portion of any provision hereof or any surviving agreement made a part hereof becomes or is declared by a court of competent jurisdiction or arbitrator to be illegal, unenforceable, or void, this Agreement shall continue in full force and effect without said provision or portion of provision.

26. Attorneys' Fees. Except with regard to a legal action challenging or seeking a determination in good faith of the validity of the waiver herein under the ADEA, in the event that either Party brings an action to enforce or effect its rights under this Agreement, the prevailing Party shall be entitled to recover its costs and expenses, including the costs of mediation, arbitration, litigation, court fees, and reasonable attorneys' fees incurred in connection with such an action.

27. Entire Agreement. With the exception of the Consulting Agreement, the Confidentiality Agreement and the Stock Agreements, this Agreement represents the entire agreement and understanding between the Company and Executive concerning the subject matter of this Agreement and Executive's employment with and separation from the Company and the events leading thereto and associated therewith, and supersedes and replaces any and all prior agreements and understandings concerning the subject matter of this Agreement and Executive's relationship with the Company, including but not limited to the Employment Agreement and the Change in Control Agreement. Notwithstanding the foregoing, the second and third sentences of Paragraph 4 of the Confidentiality Agreement are expressly superseded and replaced by Paragraph 17 of this Agreement.

28. No Oral Modification. This Agreement may only be amended in a writing signed by Executive and the Company's Chief Executive Officer.

29. Governing Law. This Agreement shall be governed by the laws of the State of California, without regard for choice-of-law provisions. Executive consents to personal and exclusive jurisdiction and venue in the State of California.

30. Effective Date. Executive understands that this Agreement shall be null and void if not executed by him within twenty one (21) days from receipt of this Agreement. Each Party has seven (7) days after that Party signs this Agreement to revoke it. This Agreement will become effective on the eighth (8th) day after Executive signed this Agreement, so long as it has been signed by the Parties and has not been revoked by either Party before that date (the "Effective Date").

31. Counterparts. This Agreement may be executed in counterparts and by facsimile, and each counterpart and facsimile shall have the same force and effect as an original and shall constitute an effective, binding agreement on the part of each of the undersigned.

32. Voluntary Execution of Agreement. Executive understands and agrees that he executed this Agreement voluntarily, without any duress or undue influence on the part or behalf of the Company or any third party, with the full intent of releasing all of his claims against the Company and any of the other Releasees. Executive acknowledges that:

(a) he has read this Agreement;

(b) he has been represented in the preparation, negotiation, and execution of this Agreement by legal counsel of his own choice or has elected not to retain legal counsel;

(c) he has been given at least twenty-one (21) days within which to consider this Agreement;

(d) he understands the terms and consequences of this Agreement and of the releases it contains; and

(e) he is fully aware of the legal and binding effect of this Agreement.

IN WITNESS WHEREOF, the Parties have executed this Agreement on the respective dates set forth below.

	HUGH MARTIN, an individual
Dated: January 10, 2012	/s/ Hugh Martin
	Hugh Martin
	PACIFIC BIOSCIENCES OF CALIFORNIA, INC.
Dated: January 10, 2012	By: /s/ Michael Hunkapiller
	Dr. Michael Hunkapiller
	Chairman, President & Chief Executive Officer

Exhibit A

PACIFIC BIOSCIENCES CONSULTING AGREEMENT

This Consulting Agreement ("**Agreement**") is entered into by and between Pacific Biosciences of California, Inc. (the "**Company**") and Hugh Martin ("**Consultant**"). The Company desires to retain Consultant as an independent contractor to perform consulting services for the Company, and Consultant is willing to perform such services, on the terms described below. In consideration of the mutual promises contained herein, the parties agree as follows:

1. *Services and Compensation*. Consultant agrees to perform for the Company the services described in Appendix A (the "**Services**"), and the Company agrees to pay Consultant the compensation described in Appendix A for Consultant's performance of the Services.

2. *Confidentiality.*

A. *Definition*. "**Confidential Information**" means (a) any non-public information that relates to the actual or anticipated business or research and development of the Company, technical data, trade secrets or know-how, including, but not limited to, research, product plans or other information regarding the Company's products or services and markets therefor, customer lists and customers (including, but not limited to, customers of the Company on whom Consultant called or with whom Consultant became acquainted during the Term of this Agreement), software, developments, inventions, processes, formulas, technology, designs, drawings, engineering, hardware configuration information, marketing, finances or other business information or any other information which is designated as "confidential," "proprietary" or some similar designation (collectively, the "**Disclosed Materials**") and (b) any information otherwise obtained or derived, directly or indirectly, by Consultant through inspection, review or analysis of the Disclosed Materials. Confidential Information does not include information that (i) is known to Consultant, on a non-confidential basis, at the time of disclosure to Consultant by the Company as evidenced by written records of Consultant, (ii) has become publicly known and made generally available through no wrongful action or inaction of Consultant or (iii) has been rightfully received by Consultant, without confidentiality obligations, from a third party who is authorized to make such disclosure.

B. *Nonuse and Nondisclosure*. During and after the Term of this Agreement, Consultant will hold the Confidential Information in the strictest confidence, and Consultant will not (i) use the Confidential Information for any purpose whatsoever other than the performance of the Services on behalf of the Company or (ii) disclose the Confidential Information to any third party without the prior written consent of the Company. If Consultant is required by law to make any disclosure that is prohibited or otherwise constrained by this Agreement, Consultant will provide the Company with prompt written notice of such requirement so that the Company may seek a protective order or other appropriate relief. Subject to the foregoing sentence, Consultant may furnish that portion (and only that portion) of the Confidential Information that Consultant is legally compelled or is otherwise legally required to disclose; provided, however, that Consultant provides such assistance as the Company may request in obtaining such order or other relief. Consultant agrees that all Confidential Information will remain the sole property of the Company. Consultant also agrees to take all reasonable precautions to prevent any unauthorized disclosure of such Confidential Information, including, but not limited to, having each of Consultant's employees and contractors, if any, with access to any Confidential Information execute a nondisclosure agreement with restrictions on use and disclosure at least as restrictive as those placed on Consultant hereunder. Without the Company's prior written approval, Consultant will not directly or indirectly disclose to anyone the existence of this Agreement or the fact that Consultant has this arrangement with the Company.

C. *Other Client Confidential Information*. Consultant agrees that Consultant will not, during the Term of this Agreement, improperly use or disclose to the Company any proprietary information or trade secrets of any former or current employer of Consultant or other person or entity with which Consultant has an agreement or duty to keep in confidence information acquired by Consultant, if any. Consultant also agrees that Consultant will not bring onto the Company's premises or transfer onto the Company's technology systems any unpublished document or proprietary information belonging to any such employer, person or entity unless consented to in writing by such employer, person or entity.

D. *Third Party Confidential Information*. Consultant recognizes that the Company has received and in the future will receive from third parties their confidential or proprietary information subject to a duty on the Company's part to maintain the confidentiality of such information and to use it only for certain limited purposes. Consultant agrees that, during the Term of this Agreement and thereafter, Consultant owes the Company and such third parties a duty to hold all such confidential or proprietary information in the strictest confidence and not to disclose it to any person, firm or corporation or to use it except as necessary in carrying out the Services for the Company consistent with the Company's agreement with such third party.

E. *Personal Information*. Without limiting the foregoing, Consultant acknowledges that in connection with Consultant's activities under this Agreement Consultant may receive information that identifies, or that in combination with other information available to Consultant could be used to identify, an individual person. Consultant shall collect, use, store and otherwise process such information as Confidential Information and in accordance with the Company's privacy and other policies applicable to such information, including any modifications to such policies as the Company may adopt from time to time. In addition, without limiting other obligations of Consultant set forth in this Agreement, Consultant shall adopt and employ physical, technical, and procedural data security measures appropriate to the sensitivity of the information received by Consultant, which shall be not less than the measures required by applicable law. The Company shall have the right, but not the duty, to audit Consultant's compliance with the requirements of this Section upon reasonable notice to Consultant. Consultant shall cooperate fully with the Company in conducting such audit(s).

F. *Return of Materials*. Upon the termination of this Agreement, or upon the Company's earlier request, Consultant will deliver to the Company all of the Company's property, including but not limited to all electronically stored information and passwords to access such property, and Confidential Information that Consultant may have in Consultant's possession or control.

G. *Community of Interest*. The Company and Consultant each understand that under this Agreement, Consultant may be privy to Company information, documents and communications, and that Company may seek advice and consultation from Consultant on matters relating to Company's business and intellectual property plans and strategies, as well as other matters. Consultant acknowledges and agrees that Consultant and Company share a community of interest with respect to any such information, documents and communications (collectively referred to as the "**Joint Community of Interest Materials**") that have been and that will continue to be generated, exchanged and shared among the Company and Consultant and/or other persons and entities providing services to or otherwise sharing business objectives with the Company (collectively "**Parties**") and counsel to any of the Parties. The Joint Community of Interest Materials (i) include, inter alia, (a) materials developed in whole or in part by counsel to the Parties, (b) materials developed in whole or in part by the Parties, individually or jointly, at the direction of, or on behalf of counsel, and (c) communications with counsel for any of the Parties and (ii) consist of privileged attorney work product, privileged attorney-client communications, or are otherwise attorney-client privileged information. Company and Consultant hereby acknowledge and agree that the Joint Community of Interest Materials are communicated in confidence for the purpose of securing legal advice and representation for evaluative purposes or in anticipation of future negotiations and/or litigation, and the Parties intend to employ all protections available to them with respect to the Joint Community of Interest Materials under state and/or federal law, including without limitation, the attorney work-product doctrine and the privileges of attorney-client, joint defense, if applicable, and/or common interest. The Parties intend for the Joint Community of Interest Materials that would be subject to one or more of the laws, privileges and/or doctrines described in the foregoing sentence had such materials been developed or obtained by one party to be subject to those same laws, privileges and/or doctrines, despite the fact that such materials may have been obtained or developed collectively and/or shared between the Parties. The Parties do not intend to waive or limit the application of any legal privileges by providing to one another, or by jointly creating Joint Community of Interest Materials. Notwithstanding the foregoing, the Company may elect to waive any or all of the foregoing privileges without Consultant's consent.

3. *Ownership.*

A. *Assignment*. Consultant agrees that all copyrightable material, notes, records, drawings, designs, inventions, improvements, developments, discoveries and trade secrets conceived, discovered, developed or reduced to practice by Consultant, solely or in collaboration with others, during the term of a consulting arrangement in furtherance of the business to be conducted by the Company, irrespective of whether such arrangement is set forth in writing or not, or commences before or after the date of this Agreement, that relate in any manner to the business of the Company that Consultant may be or may have been directed to undertake, investigate or experiment with or that Consultant may become or has become associated with in work, investigation or experimentation on behalf of Company (collectively, "**Inventions**"), are the sole property of the Company. Consultant also agrees to assign (or cause to be assigned) and hereby assigns fully to the Company all Inventions and any copyrights, patents, mask work rights or other intellectual property rights relating to all Inventions. Further, Consultant agrees to have each of Consultant's employees and contractors, if any, execute an assignment agreement including assignment obligations at least as co-extensive as those imposed upon Consultant hereunder.

B. *Further Assurances*. Consultant agrees to assist the Company, or its designee, at the Company's expense, in every proper way to secure the Company's rights in Inventions and any copyrights, patents, mask work rights or other intellectual property rights relating to all Inventions in any and all countries, including the disclosure to the Company of all pertinent information and data with respect to all Inventions, the execution of all applications, specifications, oaths, assignments and all other instruments that the Company may deem necessary in order to apply for and obtain such rights and in order to assign and convey to the Company, its successors, assigns and nominees the sole and exclusive right, title and interest in and to all Inventions, and any copyrights, patents, mask work rights or other intellectual property rights relating to all Inventions. Consultant also agrees that Consultant's obligation to execute or cause to be executed any such instrument or papers shall continue after the termination of this Agreement.

C. *Pre-Existing Material*s. Subject to **Section 3.A**, Consultant agrees that if, in the course of performing the Services, Consultant incorporates into any Invention developed under this Agreement any pre-existing invention, improvement, development, concept, discovery or other proprietary information owned by Consultant or in which Consultant has an interest, (i) Consultant will inform the Company, in writing before incorporating such invention, improvement, development, concept, discovery or other proprietary information into any Invention, and (ii) the Company is hereby granted a nonexclusive, royalty-free, perpetual, irrevocable, worldwide license to make, have made, modify, use and sell such item as part of or in connection with such Invention. Consultant will not incorporate any invention, improvement, development, concept, discovery or other proprietary information owned by any third party into any Invention without the Company's prior written permission.

D. *Attorney-in-Fact*. Consultant agrees that, if the Company is unable because of Consultant's unavailability, dissolution, mental or physical incapacity, or for any other reason, to secure Consultant's signature for the purpose of applying for or pursuing any application for any United States or foreign patents or mask work or copyright registrations covering the Inventions assigned to the Company in **Section 3.A**, then Consultant hereby irrevocably designates and appoints the Company and its duly authorized officers and agents as Consultant's agent and attorney-in-fact, coupled with an interest in the assigned inventions or original works of authorship, and with full power of substitution, to act for and on Consultant's behalf to execute and file any such applications and to do all other lawfully permitted acts to further the prosecution and issuance of patents, copyright and mask work registrations with the same legal force and effect as if executed by Consultant.

E. *Moral Rights.* To the extent allowed by law, **Section 3** and any license to the Company hereunder includes all rights of paternity, integrity, disclosure and withdrawal and any other rights that may be known as or referred to as "moral rights," "artist's rights," "droit moral," or the like. Furthermore, Consultant agrees that notwithstanding any rights of publicity, privacy or otherwise (whether or not statutory) anywhere in the world and without any further compensation, the Company may and is hereby authorized to use Consultant's name in connection with promotion of its business, products and services and to allow others to do so. To the extent any of the foregoing is ineffective under applicable law, Consultant hereby provides any and all ratifications and consents necessary to accomplish the purposes of the foregoing to the extent possible. Consultant will confirm any such ratifications and consents from time to time as requested by Company. If any other person is in any way involved in any Services, Consultant will obtain the foregoing ratifications, consents and authorizations from such person for the Company's exclusive benefit.

4. *Conflicting Obligations.*

A. *Conflicts*. Consultant represents and warrants that Consultant has no outstanding agreement or obligation that is in conflict with any of the provisions of this Agreement or that would preclude Consultant from complying with the provisions of this Agreement. Consultant is free to perform work as a consultant or employee of another entity and/or person, provided that Consultant will not enter into any conflicting agreement during the Term of this Agreement. Consultant's violation of this **Section 4.A** will be considered a material breach under **Section 7.B**.

5. Exclusive Services During the Term. Subject to written waivers that may be provided by the Company upon request, which shall not be unreasonably withheld, and except as to the companies (if any) identified in Appendix B hereto, the Consultant agrees that during the Term of this Agreement Consultant will not directly or indirectly (i) provide any services in the Field of Interest (as defined below) to any other business or commercial entity, or (ii) participate in the formation of any business or commercial entity in the Field of Interest. The Consultant has disclosed Consultant's relationships with the companies (if any) listed on Appendix B attached hereto and the foregoing will not apply to such relationships as disclosed on Appendix B. The "**Field of Interest**" shall be defined as the fields of (i) nucleic acid sequencing technologies and/or applications thereof (including, without limitation, detection of methylation and other nucleic acid base modifications), and (ii) single molecule, real time detection of biological interactions using zero mode waveguides or other confinement techniques and/or applications thereof.

6. *Reports; Time, Place and Manner of Providing Services*. Consultant also agrees that Consultant will, from time to time during the term of this Agreement or any extension thereof, keep the Company advised as to Consultant's progress in performing the Services under this Agreement. Consultant further agrees that Consultant will, as requested by the Company, prepare written reports with respect to such progress. The Company and Consultant agree that the time required to prepare such written reports will be considered time devoted to the performance of the Services.

Notwithstanding the foregoing, as long as Consultant delivers acceptable Services to the Company in a timely fashion, Consultant shall generally have the discretion to determine the location and timing of rendering Services as well as the method of accomplishing Consultant's Services.

7. *Term and Termination.*

A. *Term*. The term of this Agreement ("**Term**") will begin on January 5, 2012 (the "**Effective Date**") and will continue until the earlier of (i) July 4, 2012, or (ii) termination as provided in **Section 7.B**. Notwithstanding the foregoing, this Agreement will automatically become null and void in the event that (i) Consultant fails to timely execute the Separation Agreement and Release regarding Consultant's separation from employment with the Company, or (ii) Consultant revokes or breaches such Separation Agreement and Release.

B. *Termination*. The Company may terminate this Agreement immediately and without prior notice at any time during the Term if Consultant refuses to or is unable to perform the Services or is in breach of any material provision of this Agreement. Consultant may terminate this Agreement at any time during the Term upon giving the Company 14 days' prior written notice of such termination pursuant to **Section 12.E** of this Agreement in the event the Company is in material breach of its obligations to pay Consultant for Services rendered and approved expenses incurred by Consultant during the Term in accordance with Appendix A hereto.

C. *Survival*. Upon such termination, all rights and duties of the Company and Consultant toward each other shall cease except:

(1) The Company will pay, within 30 days after the effective date of termination, all amounts owing to Consultant for Services completed and accepted by the Company prior to the termination date and related expenses, if any, submitted in accordance with the Company's policies and in accordance with the provisions of **Section 1** of this Agreement; and

(2) Section 2 (Confidentiality), Section 3 (Ownership), Section 4 (Conflicting Obligations), Section 5 (Exclusive Services During the Term), Section 8 (Independent Contractor; Benefits), Section 9 (Indemnification), Section 10 (Nonsolicitation) Section 11 (Arbitration and Equitable Relief) and Section 12 (Miscellaneous) will survive termination or expiration of this Agreement in accordance with their terms.

8. *Independent Contractor; Benefits.*

A. *Independent Contractor.* It is the express intention of the Company and Consultant that Consultant perform the Services as an independent contractor to the Company. Nothing in this Agreement shall in any way be construed to constitute Consultant as an agent, employee, joint venturer, partner, or representative of the Company. Without limiting the generality of the foregoing, Consultant is not authorized to bind the Company to any liability or obligation or to represent that Consultant has any such authority. Consultant shall not have any authority to negotiate on behalf of the Company, or to modify or accept contracts on behalf of the Company, or to otherwise bind the Company to any contract with any third party or to conduct any business in the name of or on behalf of the Company. Any contract presented to Consultant that is intended to bind the Company must be entered into by a duly authorized officer of the Company located in the principal business offices of the Company in Menlo Park, California. Consultant agrees to furnish (or reimburse the Company for) all tools and materials necessary to accomplish this Agreement and shall incur all expenses associated with performance, except as expressly provided in Appendix A. The parties acknowledge that Consultant is not an employee for state, federal, or foreign tax or social security purposes. Consultant acknowledges and agrees that Consultant is obligated to report as income all compensation received by Consultant pursuant to this Agreement. Consultant agrees to and acknowledges the obligation to pay all self-employment and other taxes on such income, under any applicable laws.

B. *Benefits*. The Company and Consultant agree that Consultant will receive no Company-sponsored benefits from the Company, where benefits include, but are not limited to, paid vacation, sick leave, medical insurance and 401k participation. If Consultant is reclassified by a state or federal agency or court as the Company's employee, Consultant will become a reclassified employee and will receive no benefits from the Company, except those mandated by state or federal law, even if by the terms of the Company's benefit plans or programs of the Company in effect at the time of such reclassification, Consultant would otherwise be eligible for such benefits.

9. *Indemnification*. Consultant agrees to indemnify and hold harmless the Company and its directors, officers and employees from and against all taxes, losses, damages, liabilities, costs and expenses, including attorneys' fees and other legal expenses, arising directly or indirectly from or in connection with (i) any negligent, reckless or intentionally wrongful act of Consultant or Consultant's assistants, employees, contractors or agents, (ii) a determination by a court or agency that the Consultant is not an independent contractor, (iii) any breach by the Consultant or Consultant's assistants, employees, contractors or agents of any of the covenants contained in this Agreement, (iv) any failure of Consultant to perform the Services in accordance with all applicable laws, rules and regulations, or (v) any violation or claimed violation of a third party's rights resulting in whole or in part from the Company's use of the work product of Consultant under this Agreement.

10. *Nonsolicitation*. To the fullest extent permitted under applicable law, from the date of this Agreement until 12 months after the termination of this Agreement (the "**Restricted Period**"), Consultant will not, without the Company's prior written consent, directly or indirectly, solicit any employee or contractor of the Company or its affiliates to terminate employment with, or cease providing services to, the Company or its affiliates.

11. *Arbitration and Equitable Relief.*

A. *Arbitration*. Consultant and the Company agree that any and all controversies, claims or disputes with anyone (including without limitation, Consultant and Consultant's heirs, successors and assigns, the Company and any employee, officer, director, shareholder or benefit plan of the Company, in its capacity as such or otherwise) arising out of, relating to or resulting from Consultant's performance of the Services under this Agreement or the termination of this Agreement, including any breach of this Agreement, shall be subject to binding arbitration under the Arbitration Rules set forth in California Code of Civil Procedure (the "**Rules**") and pursuant to California law. CONSULTANT AND THE COMPANY AGREE TO ARBITRATE, AND THEREBY AGREE TO WAIVE ANY RIGHT TO A TRIAL BY JURY WITH RESPECT TO, ALL DISPUTES ARISING FROM OR RELATED TO THIS AGREEMENT. Consultant understands that this Agreement to arbitrate also applies to any disputes that the Company may have with Consultant.

B. *Procedure*. Consultant and the Company agree that any arbitration will be administered by Judicial Arbitration & Mediation Services ("**JAMS**"), and that a neutral arbitrator will be selected in a manner consistent with its applicable rules. Consultant and the Company agree that the arbitrator will have the power to decide any motions brought by any party to the arbitration, including discovery motions, motions for summary judgment and/or adjudication and motions to dismiss and demurrers, prior to any arbitration hearing. Consultant and the Company agree that the arbitrator will issue a written decision on the merits. Consultant and the Company also agree that the arbitrator will have the power to award any remedies, including attorneys' fees and costs, available under applicable law. Consultant and the Company agree that the arbitrator will administer and conduct any arbitration in a manner consistent with the Rules and that, to the extent that the JAMS' rules conflict with the Rules, the Rules will take precedence.

C. *Remedy*. Except as provided by the Rules, arbitration will be the sole, exclusive and final remedy for any dispute between the Company and Consultant. Accordingly, except as provided for by the Rules, neither the Company nor Consultant will be permitted to pursue court action regarding claims that are subject to arbitration. Notwithstanding the foregoing, the arbitrator will not have the authority to disregard or refuse to enforce any lawful Company policy, and the arbitrator shall not order or require the Company to adopt a policy not otherwise required by law which the Company has not adopted.

E. *Voluntary Nature of Agreement*. Consultant acknowledges and agrees that Consultant is executing this Agreement voluntarily and without any duress or undue influence by the Company or anyone else. Consultant further acknowledges and agrees that Consultant has carefully read this Agreement and has asked any questions needed to understand the terms, consequences and binding effect of this Agreement and fully understand it, including that Consultant is waiving its right to a jury trial. Finally, Consultant agrees that Consultant has been provided an opportunity to seek the advice of an attorney of its choice before signing this Agreement.

12. *Miscellaneous.*

A. *Governing Law*. This Agreement shall be governed by the laws of California without regard to California's conflicts of law rules. Consultant agrees to jurisdiction in California for any disputes as set forth in **Section 11** above.

B. *Assignability*. Except as otherwise provided in this Agreement, Consultant may not sell, assign or delegate any rights or obligations under this Agreement.

C. *Entire Agreement*. With the exception of the Separation Agreement and Release regarding Consultant's separation from employment with the Company, this Agreement constitutes the entire agreement between the parties with respect to the subject matter of this Agreement and supersedes all prior written and oral agreements between the parties regarding the subject matter of this Agreement.

D. *Headings*. Headings are used in this Agreement for reference only and shall not be considered when interpreting this Agreement.

E. *Notices*. Any notice or other communication required or permitted by this Agreement to be given to a party shall be in writing and shall be deemed given if delivered personally or by commercial messenger or courier service, or mailed by registered or certified mail (return receipt requested), or sent via facsimile (with receipt of confirmation of complete transmission) to the party at the party's address or facsimile number written below or at such other address or facsimile number as the party may have previously specified by like notice. If by mail, delivery shall be deemed effective 3 business days after mailing in accordance with this **Section 12.E**.

(1) If to the Company, to:

Pacific Biosciences
1380 Willow Road
Menlo Park, CA 94025
Attention: Legal Department
Telephone: (650) 521-8000
Facsimile: (650) 323-9420

(2) If to Consultant, to the address for notice on the signature page to this Agreement or, if no such address is provided, to the last address of Consultant provided by Consultant to the Company.

F. *Modification, Waiver*. No modification of or amendment to this Agreement, nor any waiver of any rights under this Agreement, will be effective unless in a writing signed by the parties. Waiver by the Company of a breach of any provision of this Agreement will not operate as a waiver of any other or subsequent breach.

G. *Attorneys' Fees*. In any court action at law or equity that is brought by one of the parties to this Agreement to enforce or interpret the provisions of this Agreement, the prevailing party will be entitled to reasonable attorneys' fees, in addition to any other relief to which that party may be entitled.

H. *Severability*. If any provision of this Agreement is found to be illegal or unenforceable, the other provisions shall remain effective and enforceable to the greatest extent permitted by law.

[SIGNATURE PAGE FOLLOWS]

IN WITNESS WHEREOF, the parties hereto have executed this Consulting Agreement as of the date last indicated below and effective as of the Effective Date.

CONSULTANT		**PACIFIC BIOSCIENCES OF CALIFORNIA, INC.**	
By:	/s/ Hugh Martin	By:	/s/ Michael Hunkapiller
Name:	Hugh Martin	Name:	Dr. Michael Hunkapiller
Date:	January 10, 2012	Title:	Chairman, President & Chief Executive Officer
		Date:	January 10, 2012

Address for Notice:

____

____

APPENDIX A

Services and Compensation

1. *Contact*. Consultant's principal Company contact:
   Name: Dr. Michael Hunkapiller
   Title: Chairman, President & Chief Executive Officer

2. *Services*. The Services shall include, but shall not be limited to, the following:

Consultant will provide such advisory and consultancy services to the Company as reasonably requested by Dr. Hunkapiller.

3. *Compensation*.

A. During the Term of this Agreement, provided the Agreement has not otherwise terminated, the Company will pay Consultant $20,000 per month in exchange for his Services.

B. The Company will reimburse Consultant for all reasonable expenses incurred by Consultant in performing the Services pursuant to this Agreement, consistent with the Company's travel and expense policies, if Consultant receives written consent from an authorized agent of the Company prior to incurring such expenses and submits receipts for such expenses to the Company in accordance with the Company's policies. Consultant shall not be reimbursed for commute time to and from Company's premises. To the extent Consultant is required to travel for any portion of the Services, then Consultant and Company shall agree in writing, prior to such travel, the extent to which Consultant shall be reimbursed for any travel time.

C. On a monthly basis, Consultant shall submit to the Company a written invoice for any expenses, and such invoices shall be subject to the approval of the contact person listed above or other designated agent of the Company. All payments hereunder shall be made to Consultant within thirty (30) days from the end of the month the relevant Services were performed or from the date on which the Company receives Consultant's valid and correct invoice, as applicable.

D. All payments and benefits provided for under this Agreement are intended to be exempt from or otherwise comply with the requirements of Section 409A of the Internal Revenue Code of 1986, as amended, and the regulations and guidance thereunder (together, "Section 409A") so that none of the severance payments and benefits to be provided hereunder will be subject to the additional tax imposed under Section 409A, and any ambiguities or ambiguous terms herein will be interpreted to be exempt or so comply. Each payment and benefit payable under this Agreement is intended to constitute a separate payment for purposes of Section 1.409A-2(b)(2) of the Treasury Regulations.

APPENDIX B

Consultant's Relationships With Other Companies

(If blank, Consultant represents that he has no such relationships.)

Exhibit B
(Supplemental Release)

1. General Release. In consideration of the mutual promises and Severance Payment and other consideration provided in the Separation Agreement and Release, dated (the "Agreement"), HUGH MARTIN hereby verifies and confirms his renewed agreement to the terms of that Agreement, including but not limited to the release and waiver of any and all claims relating to his employment with the Company, and further extends such release and waiver to any claims that may have arisen during the Term of the Consulting Agreement as defined therein, including but not limited to claims under any local ordinance or state or federal employment law, including laws prohibiting discrimination in employment on the basis of race, sex, age, disability, national origin, or religion, as well as any claims for misclassification, wrongful discharge, breach of contract, attorneys' fees, costs, or any claims of amounts due for fees, commissions, stock options, expenses, salary, bonuses, profit sharing or fringe benefits (the "Supplemental Release").

2. Return of Company Property. Executive's signature below constitutes his certification under penalty of perjury that, except for any items that have been expressly given to Executive by the Company to keep, he has returned all documents and other items provided to Executive by the Company, developed or obtained by Executive in connection with his employment with the Company, or otherwise belonging to the Company.

3. Payment of Salary and Receipt of All Benefits. Executive acknowledges and represents that, other than the consideration set forth in this Supplemental Release, the Company has paid or provided all consulting fees, salary, wages, bonuses, accrued vacation/paid time off, premiums, leaves, housing allowances, relocation costs, interest, severance, outplacement costs, fees, reimbursable expenses, commissions, stock, stock options, vesting, and any and all other benefits and compensation due to Executive.

4. Acknowledgment of Waiver of Claims under ADEA. Executive understands and acknowledges that he is waiving and releasing any rights he may have under the Age Discrimination in Employment Act of 1967 ("ADEA"), and that this waiver and release is knowing and voluntary. Executive agrees that this waiver and release does not apply to any rights or claims that may arise under the ADEA after the Effective Date of this Supplemental Release. Executive understands and acknowledges that the consideration given for this waiver and release is in addition to anything of value to which Executive was already entitled. Executive further understands and acknowledges that he has been advised by this writing that: (a) he should consult with an attorney prior to executing this Supplemental Release; (b) he has twenty-one (21) days within which to consider this Supplemental Release; (c) he has seven (7) days following his execution of this Supplemental Release to revoke the Supplemental Release; (d) this Supplemental Release shall not be effective until after the revocation period has expired; and (e) nothing in this Supplemental Release prevents or precludes Executive from challenging or seeking a determination in good faith of the validity of this waiver under the ADEA, nor does it impose any condition precedent, penalties, or costs for doing so, unless specifically authorized by federal law. In the event Executive signs this Supplemental Release and returns it to the Company in less than the 21-day period identified above, Executive hereby acknowledges that he has freely and voluntarily chosen to waive the time period allotted for considering this Supplemental Release. Executive acknowledges and understands that revocation must be accomplished by a written notification to the person

executing this Supplemental Release on the Company's behalf that is received prior to the Effective Date. The parties agree that changes, whether material or immaterial, do not restart the running of the 21-day period.

5. ARBITRATION. THE PARTIES AGREE THAT ANY AND ALL DISPUTES ARISING OUT OF THE TERMS OF THE AGREEMENT, THE CONFIDENTIALITY AGREEMENT, OR THIS SUPPLEMENTAL AGREEMENT, THEIR INTERPRETATION, AND ANY OF THE MATTERS HEREIN RELEASED, SHALL BE SUBJECT TO ARBITRATION IN SAN MATEO COUNTY, BEFORE JUDICIAL ARBITRATION & MEDIATION SERVICES ("JAMS"), PURSUANT TO ITS EMPLOYMENT ARBITRATION RULES & PROCEDURES ("JAMS RULES"). THE ARBITRATOR MAY GRANT INJUNCTIONS AND OTHER RELIEF IN SUCH DISPUTES. THE ARBITRATOR SHALL ADMINISTER AND CONDUCT ANY ARBITRATION IN ACCORDANCE WITH CALIFORNIA LAW, INCLUDING THE CALIFORNIA CODE OF CIVIL PROCEDURE, AND THE ARBITRATOR SHALL APPLY SUBSTANTIVE AND PROCEDURAL CALIFORNIA LAW TO ANY DISPUTE OR CLAIM, WITHOUT REFERENCE TO ANY CONFLICT-OF-LAW PROVISIONS OF ANY JURISDICTION. TO THE EXTENT THAT THE JAMS RULES CONFLICT WITH CALIFORNIA LAW, CALIFORNIA LAW SHALL TAKE PRECEDENCE. THE DECISION OF THE ARBITRATOR SHALL BE FINAL, CONCLUSIVE, AND BINDING ON THE PARTIES TO THE ARBITRATION. THE PARTIES AGREE THAT THE PREVAILING PARTY IN ANY ARBITRATION SHALL BE ENTITLED TO INJUNCTIVE RELIEF IN ANY COURT OF COMPETENT JURISDICTION TO ENFORCE THE ARBITRATION AWARD. THE PARTIES TO THE ARBITRATION SHALL EACH PAY AN EQUAL SHARE OF THE COSTS AND EXPENSES OF SUCH ARBITRATION, AND EACH PARTY SHALL SEPARATELY PAY FOR ITS RESPECTIVE COUNSEL FEES AND EXPENSES; PROVIDED, HOWEVER, THAT THE ARBITRATOR SHALL AWARD ATTORNEYS' FEES AND COSTS TO THE PREVAILING PARTY, EXCEPT AS PROHIBITED BY LAW. THE PARTIES HEREBY AGREE TO WAIVE THEIR RIGHT TO HAVE ANY DISPUTE BETWEEN THEM RESOLVED IN A COURT OF LAW BY A JUDGE OR JURY. NOTWITHSTANDING THE FOREGOING, THIS SECTION WILL NOT PREVENT EITHER PARTY FROM SEEKING INJUNCTIVE RELIEF (OR ANY OTHER PROVISIONAL REMEDY) FROM ANY COURT HAVING JURISDICTION OVER THE PARTIES AND THE SUBJECT MATTER OF THEIR DISPUTE RELATING TO THIS AGREEMENT AND THE AGREEMENTS INCORPORATED HEREIN BY REFERENCE (INCLUDING THE CONFIDENTIALITY AGREEMENT). SHOULD ANY PART OF THE ARBITRATION AGREEMENT CONTAINED IN THIS PARAGRAPH CONFLICT WITH ANY OTHER ARBITRATION AGREEMENT BETWEEN THE PARTIES, THE PARTIES AGREE THAT THIS ARBITRATION AGREEMENT SHALL GOVERN.

6. Entire Agreement. The Agreement and this Supplemental Release represent the entire agreement and understanding between the Company and Executive concerning the subject matter of this Agreement and Executive's employment with and separation from the Company and the events leading thereto and associated therewith, and supersedes and replaces any and all prior agreements and understandings concerning the subject matter of this Agreement and Executive's relationship with the Company, with the exception of the Confidentiality Agreement (as amended in the Agreement) and the Stock Option Agreements. The arbitration provision of this Supplemental Release (Section 5 above) supersedes the arbitration provisions in the Agreement, the Consulting Agreement and the Confidentiality Agreement.

7. Expiration of Supplemental Release. This Supplemental Release is null and void if the Company has not received a copy executed by the Executive within two (2) weeks following the Termination Date of the Consulting Agreement as defined in the Consulting Agreement. This Supplemental Release will become effective after it has been signed by both Parties and after seven (7) days have passed since Executive signed the Supplemental Release (the "Effective Date"). Executive has seven (7) days after he signs the Supplemental Release to revoke it. Executive acknowledges and understands that revocation must be accomplished by a written notification to the person executing this Supplemental Release on the Company's behalf that is received prior to the Effective Date.

8. Voluntary Execution of Agreement. Executive understands and agrees that he executed this Supplemental Release voluntarily, without any duress or undue influence on the part or behalf of the Company or any third party, with the full intent of releasing all of his claims against the Company and any of the other Releasees. Executive further acknowledges that: (a) he has read this Supplemental Release; (b) he has been represented in the preparation, negotiation, and execution of this Supplemental Release by legal counsel of his own choice or has elected not to retain legal counsel; (c) he has been given at least twenty-one (21) days within which to consider this Agreement; (d) he understands the terms and consequences of this Supplemental Release and of the releases it contains; and (e) he is fully aware of the legal and binding effect of this Supplemental Release.

IN WITNESS WHEREOF, the Parties have executed this Supplemental Release on the respective dates set forth below.

HUGH MARTIN, an individual

Dated: January 10, 2012

/s/ Hugh Martin
Hugh Martin

PACIFIC BIOSCIENCES OF CALIFORNIA, INC.

Dated: January 10, 2012

By /s/ Michael Hunkapiller
Dr. Michael Hunkapiller
Chairman, President & Chief Executive Officer

<u>Exhibit C</u>

(Board Resignation Letter)

June , 2012

Board of Directors
Pacific Biosciences of California, Inc.
1380 Willow Rd.
Menlo Park, CA 94025

Re: Resignation from Board of Directors

Dear Board members:

I, Hugh Martin, hereby resign from my position as a Director of Pacific Biosciences of California, Inc., effective as of the date of this letter.

Sincerely,

/s/ Hugh Martin
Hugh Martin

PACIFIC BIOSCIENCES OF CALIFORNIA, INC.

EMPLOYMENT AGREEMENT

This Employment Agreement (the "**Agreement**") is entered into as of January 5, 2012 (the "**Effective Date**") by and between Pacific Biosciences of California, Inc. (the "**Company**") and Michael Hunkapiller ("**Executive**").

1. Duties and Scope of Employment.

(a) Position and Duties. As of the Effective Date, Executive will serve as the Company's Chief Executive Officer and President and will continue to serve as the Executive Chairman of the Company's Board of Directors (the "**Board**"). Executive will render such business and professional services in the performance of his duties, consistent with Executive's position within the Company, as shall reasonably be assigned to him by the Board. The Board may modify Executive's job title and duties as it deems necessary and appropriate in light of the Company's needs and interests from time to time. The period of Executive's employment under this Agreement is referred to herein as the "**Employment Term**."

(b) Board Membership. During the Employment Term, Executive will serve as a member and Executive Chairman of the Board, subject to any required Board and/or stockholder approval. Upon termination of the Employment Term, Executive will resign from the Board.

(c) Obligations. During the Employment Term, Executive will perform his duties faithfully and to the best of his ability and will devote his full business efforts and time to the Company. For the duration of the Employment Term, Executive agrees not to actively engage in any other employment, occupation or consulting activity for any direct or indirect remuneration without the prior approval of the Board.

(d) Confidentiality Agreement. Executive agrees to enter into the Company's standard confidential information and invention assignment agreement (the "**Confidentiality Agreement**") in favor of the Company upon commencing employment hereunder.

2. At-Will Employment. The parties agree that Executive's employment with the Company will be "at-will" employment and may be terminated at any time with or without cause or notice. Executive understands and agrees that neither his job performance nor commendations, bonuses or the like from the Company give rise to or in any way serve as the basis for modification, amendment, or extension, by implication or otherwise, of the at-will nature of his employment with the Company. As described in this Agreement, however, Executive may be entitled to severance and other benefits depending upon the circumstances of Executive's termination of employment with the Company.

3. Term of Agreement. Subject to Section 2 above, this Agreement will have an initial term of three (3) years, commencing on the Effective Date. On the third anniversary of the Effective Date, this Agreement will automatically renew for additional one (1) year terms unless either party

provides the other party with written notice of non-renewal at least sixty (60) days prior to the date of automatic renewal. If Executive becomes entitled to benefits under Section 9 during the term of this Agreement, this Agreement will not terminate until all of the obligations under this Agreement have been satisfied.

4. Compensation.

(a) Base Salary. During the Employment Term, the Company will pay Executive as compensation for his services a base salary (the "**Base Salary**") at the annualized rate of four hundred thousand dollars ($400,000). The Base Salary will be paid in installments in accordance with the Company's normal payroll practices for senior executives and be subject to the usual, required withholding. Executive's salary will be subject to review and adjustments will be made based upon the Company's normal performance review practices, though the Company does not expect to review or otherwise adjust the Base Salary prior to 2013.

(b) Bonus. Effective for calendar year 2012, Executive will qualify for an annual performance bonus with a target bonus level of seventy-five percent (75%) of Executive's Base Salary based upon performance criteria established by the Board or the Compensation Committee of the Board. The Board or the Compensation Committee will endeavor in good faith to establish the annual performance bonus criteria within the first quarter of the applicable year. Any bonus, or any portion thereof, will be paid as soon as practicable after the Board or Compensation Committee determines that the bonus has been earned, but in no event will the bonus be paid after the later of (i) the fifteenth (15th) day of the third (3rd) month following the close of the Company's fiscal year in which the bonus is earned or (ii) March 15 following the calendar year in which the bonus is earned.

(c) Equity Awards.

(i) Stock Option. Effective as of January 9, 2012, Executive will be granted a stock option to purchase one million (1,000,000) shares of the Company's common stock ("**Shares**") at an exercise price per Share equal to the fair market value of a Share on the date of grant (the "**Option**"). The Option will vest as to twenty-five percent (25%) of the Shares subject to the Option on the one (1) year anniversary of the Effective Date, and as to 1/48th of the Shares subject to the Option monthly thereafter, so that the Option will be fully vested and exercisable four (4) years from the Effective Date, subject to Executive continuing to provide services to the Company through the relevant vesting dates. The Option will be subject to the terms and conditions of the Company's 2010 Equity Incentive Plan and a stock option agreement by and between Executive and the Company.

(ii) Additional Equity Awards. Executive will be eligible to receive awards of stock options, restricted stock or other equity awards covering Shares pursuant to any plans or arrangements the Company may have in effect from time to time, including but not limited to any focal grants. The Board or its committee will determine in its discretion whether Executive will be granted any such equity awards and the terms of any such award in accordance with the terms of any applicable plan or arrangement that may be in effect from time to time.

5. Employee Benefits. During the Employment Term, Executive will be entitled to participate in the employee benefit plans currently and hereafter maintained by the Company of general applicability to other senior executives of the Company, as in effect from time to time. The Company reserves the right to cancel or change the benefit plans and programs it offers to its employees at any time.

6. Vacation. Executive will be entitled to paid vacation in accordance with the Company's vacation policy for senior executive officers, with the timing and duration of specific vacations mutually and reasonably agreed to by the parties hereto. Upon Executive's termination of employment, Executive will be entitled to receive payment of Executive's accrued but unused vacation through the date of Executive's termination.

7. Expenses. The Company will reimburse Executive for reasonable travel, entertainment or other expenses incurred by Executive in the furtherance of or in connection with the performance of Executive's duties hereunder, in accordance with the Company's expense reimbursement policy as in effect from time to time.

8. Termination of Employment. In the event Executive's employment with the Company terminates for any reason, Executive will be entitled to any (a) unpaid Base Salary accrued up to the effective date of termination; (b) pay for accrued but unused vacation; (c) benefits or compensation as provided under the terms of any employee benefit and compensation agreements or plans applicable to Executive; and (d) unreimbursed business expenses required to be reimbursed to Executive.

9. Severance.

(a) Termination (other than for Cause, Death or Disability) or Resignation for Good Reason. If (i) the Company terminates Executive's employment with the Company other than for (x) Cause, (y) death or (z) Disability, or (ii) Executive resigns from his employment with the Company for Good Reason, then, subject to Section 11(a) below, Executive will be entitled to:

(i) A lump sum payment equal to twelve (12) months of Executive's Base Salary (unless such termination occurs as a result of clause (ii) of the definition of "Good Reason" under Section 13(e) below, in which case the amount will be equal to twelve (12) months of Executive's Base Salary as in effect immediately prior to such Base Salary reduction), less applicable tax withholding, payable within thirty (30) days following Executive's termination of employment;

(ii) the immediate vesting of each of Executive's then-outstanding stock options and restricted stock or other equity awards as to the number of shares subject to each such equity award that otherwise would have vested had he remained an employee of the Company through the six (6) month anniversary of the date of Executive's termination of employment; and

(iii) if Executive elects continuation coverage pursuant to the Consolidated Omnibus Budget Reconciliation Act of 1985, as amended ("**COBRA**") for Executive and Executive's eligible dependents (as applicable), within the time period prescribed pursuant to

COBRA, the Company will reimburse Executive for, or pay directly on Executive's behalf, the COBRA premiums for such coverage (at the coverage levels in effect immediately prior to Executive's termination of employment) until the earlier of (A) a period of twelve (12) months from the last date of employment of the Executive with the Company, or (B) the date upon which Executive and/or Executive's eligible dependents becomes covered under similar plans. However, if the Company determines in its sole discretion that it cannot provide the COBRA benefits without potentially violating applicable law (including, without limitation, Section 2716 of the Public Health Service Act), the Company will in lieu thereof provide to Executive a taxable monthly payment in an amount equal to the monthly COBRA premium that Executive would be required to pay to continue his group health coverage in effect on the date of his termination of employment (which amount will be based on the premium for the first month of COBRA coverage), which payments will be made regardless of whether Executive elects COBRA continuation coverage.

(b) <u>Termination for Cause, Death or Disability; Resignation without Good Reason</u>. If Executive's employment with the Company terminates voluntarily by Executive (other than for Good Reason), terminates as a result of Executive's death or Disability, or is terminated for Cause by the Company, then (i) all vesting will terminate immediately with respect to Executive's then-outstanding equity awards, (ii) all payments of compensation by the Company to Executive hereunder will terminate immediately (except as to amounts already earned), and (iii) Executive will only be eligible for severance benefits in accordance with the Company's established policies, if any, as then in effect.

10. <u>Non-Duplication of Benefits</u>. In the event that Executive is entitled to benefits pursuant to the Change in Control Severance Agreement entered into between Executive and the Company of even date herewith, the payments and benefits set forth therein are intended to be and are exclusive and in lieu of any payments or benefits set forth under Section 9 of this Agreement and, in such case, Executive will be entitled to no payments or benefits under Section 9 of this Agreement.

11. <u>Conditions to Receipt of Severance</u>.

(a) <u>Release of Claims Agreement</u>. The receipt of any severance or benefits pursuant to this Agreement is subject to Executive signing and not revoking a separation agreement and release of claims in a form reasonably acceptable to the Company (the "**Release**"), which must become effective and irrevocable no later than the sixtieth (60^{th}) day following the termination of employment (the "**Release Deadline**"). If the Release does not become effective and irrevocable by the Release Deadline, Executive will forfeit any rights to severance payments or benefits under this Agreement. No severance payments and benefits under this Agreement will be paid or provided until the Release becomes effective and irrevocable, and, subject to Section 11(c) of this Agreement, any such severance payments and benefits otherwise payable between the date of Executive's termination of employment and the date the Release becomes effective and irrevocable will be paid on the date the Release becomes effective and irrevocable.

(b) <u>Confidential Information and Invention Assignment Agreements</u>. Executive's receipt of any payments or benefits under Section 9 will be subject to Executive continuing to comply with the terms of the Confidentiality Agreement and the provisions of this Agreement.

(c) Section 409A.

(i) Notwithstanding anything to the contrary in this Agreement, no severance pay or benefits to be paid or provided to Executive, if any, pursuant to this Agreement that, when considered together with any other severance payments or separation benefits, are considered deferred compensation under Internal Revenue Code Section 409A (together, the "**Deferred Payments**") will be payable until Executive has a "separation from service" within the meaning of Section 409A ("**Section 409A**") of the Internal Revenue Code of 1986, as amended (the "**Code**"). Similarly, no severance payable to Executive, if any, pursuant to this Agreement that otherwise would be exempt from Section 409A pursuant to Treasury Regulation Section 1.409A-1(b)(9) will be payable until Executive has a "separation from service" within the meaning of Section 409A.

(ii) Any severance payments or benefits under this Agreement that would be considered Deferred Payments will be paid on, or, in the case of installments, will not commence until, the sixtieth (60^{th}) day following Executive's separation from service, or, if later, such time as required by Section 11(c)(iii). Except as required by Section 11(c)(iii), any installment payments that would have been made to Executive during the sixty (60) day period immediately following Executive's separation from service but for the preceding sentence will be paid to Executive on the sixtieth (60^{th}) day following Executive's separation from service and the remaining payments will be made as provided in this Agreement.

(iii) Further, if Executive is a "specified employee" within the meaning of Section 409A at the time of Executive's separation from service (other than due to death), any Deferred Payments that otherwise are payable within the first six (6) months following Executive's separation from service will become payable on the first payroll date that occurs on or after the date six (6) months and one (1) day following the date of Executive's separation from service. All subsequent Deferred Payments, if any, will be payable in accordance with the payment schedule applicable to each payment or benefit. Notwithstanding anything herein to the contrary, in the event of Executive's death following Executive's separation from service but prior to the six (6) month anniversary of Executive's separation from service (or any later delay date), then any payments delayed in accordance with this paragraph will be payable in a lump sum as soon as administratively practicable after the date of Executive's death and all other Deferred Payments will be payable in accordance with the payment schedule applicable to each payment or benefit. Each payment and benefit payable under the Agreement is intended to constitute a separate payment for purposes of Section 1.409A-2(b)(2) of the Treasury Regulations.

(iv) Any amount paid under this Agreement that satisfies the requirements of the "short-term deferral" rule set forth in Section 1.409A-1(b)(4) of the Treasury Regulations will not constitute Deferred Payments for purposes of clause (i) above. Any amount paid under this Agreement that qualifies as a payment made as a result of an involuntary separation from service pursuant to Section 1.409A-1(b)(9)(iii) of the Treasury Regulations that does not exceed the Section 409A Limit (as defined below) will not constitute Deferred Payments for purposes of clause (i) above.

(v) The foregoing provisions are intended to comply with, or be exempt from, the requirements of Section 409A so that none of the severance payments and benefits to be provided under the Agreement will be subject to the additional tax imposed under Section 409A, and any ambiguities herein will be interpreted to so comply or be exempt. Executive and the Company agree to work together in good faith to consider amendments to the Agreement and to take such reasonable actions which are necessary, appropriate or desirable to avoid imposition of any additional tax or income recognition prior to actual payment to Executive under Section 409A. In no event will the Company reimburse Executive for any taxes that may be imposed on Executive as result of Section 409A.

(d) No Duty to Mitigate. Executive will not be required to mitigate the amount of any payment contemplated by this Agreement, nor will any such payment be reduced by any earnings that Executive may receive from any other source.

12. Limitation on Payments. In the event that the severance and other benefits provided for in this Agreement or otherwise payable to Executive (i) constitute "parachute payments" within the meaning of Section 280G of the Code and (ii) but for this Section 12, would be subject to the excise tax imposed by Section 4999 of the Code, then Executive's severance benefits under Section 9 will be either:

(a) delivered in full, or

(b) delivered as to such lesser extent which would result in no portion of such severance benefits being subject to excise tax under Section 4999 of the Code,

whichever of the foregoing amounts, taking into account the applicable federal, state and local income taxes and the excise tax imposed by Section 4999, results in the receipt by Executive on an after-tax basis, of the greatest amount of severance benefits, notwithstanding that all or some portion of such severance benefits may be taxable under Section 4999 of the Code. If a reduction in severance and other benefits constituting "parachute payments" is necessary so that benefits are delivered to a lesser extent, reduction will occur in the following order: (i) reduction of cash payments; (ii) cancellation of awards granted "contingent on a change in ownership or control" (within the meaning of Code Section 280G), (iii) cancellation of accelerated vesting of equity awards; (iv) reduction of employee benefits. In the event that acceleration of vesting of equity award compensation is to be reduced, such acceleration of vesting will be cancelled in the reverse order of the date of grant of Executive's equity awards.

Unless the Company and Executive otherwise agree in writing, any determination required under this Section 12 will be made in writing by the Company's independent public accountants immediately prior to the Change in Control (the "**Accountants**"), whose determination will be conclusive and binding upon Executive and the Company for all purposes. For purposes of making the calculations required by this Section 12, the Accountants may make reasonable assumptions and approximations concerning applicable taxes and may rely on reasonable, good faith interpretations concerning the application of Sections 280G and 4999 of the Code. The Company and Executive will furnish to the Accountants such information and documents as the Accountants may reasonably request in order to make a determination under this Section. The Company will bear all costs the Accountants may reasonably incur in connection with any calculations contemplated by this Section 12.

13. Definition of Terms. The following terms referred to in this Agreement will have the following meanings:

(a) Cause. "**Cause**" means (i) conviction of any felony; (ii) conviction of any crime involving moral turpitude or dishonesty that causes, or is likely to cause, material harm to the Company; (iii) participation in a fraud or willful act of dishonesty against the Company that causes, or is likely to cause, material harm to the Company; (iv) intentional and material damage to the Company's property; or (v) material breach of the Company's Proprietary Information and Inventions Agreement.

(b) Change in Control. "**Change in Control**" means the occurrence of any of the following:

(i) A change in the ownership of the Company which occurs on the date that any one person, or more than one person acting as a group ("**Person**"), acquires ownership of the stock of the Company that, together with the stock held by such Person, constitutes more than 50% of the total voting power of the stock of the Company; provided, however, that for purposes of this subsection (i), the acquisition of additional stock by any one Person, who is considered to own more than 50% of the total voting power of the stock of the Company will not be considered a Change in Control; or

(ii) A change in the effective control of the Company which occurs on the date that a majority of members of the Board (each, a "**Director**") is replaced during any twelve (12) month period by Directors whose appointment or election is not endorsed by a majority of the members of the Board prior to the date of the appointment or election. For purposes of this subsection (ii), if any Person is considered to be in effective control of the Company, the acquisition of additional control of the Company by the same Person will not be considered a Change in Control; or

(iii) A change in the ownership of a substantial portion of the Company's assets which occurs on the date that any Person acquires (or has acquired during the twelve (12) month period ending on the date of the most recent acquisition by such person or persons) assets from the Company that have a total gross fair market value equal to or more than 50% of the total gross fair market value of all of the assets of the Company immediately prior to such acquisition or acquisitions; provided, however, that for purposes of this subsection (iii), the following will not constitute a change in the ownership of a substantial portion of the Company's assets: (A) a transfer to an entity that is controlled by the Company's stockholders immediately after the transfer, or (B) a transfer of assets by the Company to: (1) a stockholder of the Company (immediately before the asset transfer) in exchange for or with respect to the Company's stock, (2) an entity, 50% or more of the total value or voting power of which is owned, directly or indirectly, by the Company, (3) a Person, that owns, directly or indirectly, 50% or more of the total value or voting power of all the outstanding stock of the Company, or (4) an entity, at least 50% of the total value or voting power of which is owned, directly or indirectly, by a Person described in this subsection (iii)(B)(3). For purposes of this subsection (iii), gross fair market value means the value of the assets of the Company, or the value of the assets being disposed of, determined without regard to any liabilities associated with such assets.

For purposes of this definition of Change in Control, persons will be considered to be acting as a group if they are owners of a corporation that enters into a merger, consolidation, purchase or acquisition of stock, or similar business transaction with the Company.

Notwithstanding the foregoing, a transaction will not be deemed a Change in Control unless the transaction qualifies as a change in control event within the meaning of Code Section 409A, as it has been and may be amended from time to time, and any proposed or final Treasury Regulations and Internal Revenue Service guidance that has been promulgated or may be promulgated thereunder from time to time.

Further and for the avoidance of doubt, a transaction will not constitute a Change in Control if: (i) its sole purpose is to change the state of the Company's incorporation, or (ii) its sole purpose is to create a holding company that will be owned in substantially the same proportions by the persons who held the Company's securities immediately before such transaction.

(c) Code. For purposes of this Agreement, "**Code**" is defined as the Internal Revenue Code of 1986, as amended.

(d) Disability. "**Disability**" means Executive is unable to engage in any substantial gainful activity by reason of any medically determinable physical or mental impairment that can be expected to result in death or can be expected to last for a continuous period of not less than twelve (12) months.

(e) Good Reason. "**Good Reason**" means Executive's termination of employment within thirty (30) days following the expiration of any cure period (discussed below) following the occurrence of one or more of the following, without Executive's express written consent:

(i) a material reduction of Executive's duties, authority, or responsibilities, relative to Executive's duties, authority, or responsibilities as in effect immediately prior to such reduction, or any change which results in Executive ceasing to serve as the Chief Executive Officer of the Company, provided that, for the avoidance of doubt, Executive ceasing to serve as President of the Company or Executive Chairman of the Board shall not constitute "Good Reason";

(ii) a material reduction by the Company in Executive's annualized base pay as in effect immediately prior to such reduction (in other words, a reduction of more than ten percent (10%) of Executive's annualized base compensation in any one year, other than a reduction applicable to executives generally that does not adversely affect Executive to a greater extent than other similarly situated executives);

(iii) the relocation of Executive's principal place of performing his duties as an employee of the Company by more than fifty (50) miles; or

(iv) the failure of the Company to obtain the assumption of this Agreement by a successor.

In order for an event to qualify as Good Reason, Executive must not terminate employment with the Company without first providing the Company with written notice of the acts or omissions constituting the grounds for “Good Reason” within ninety (90) days of the initial existence of the grounds for “Good Reason” and a reasonable cure period of not less than thirty (30) days following the date of such notice.

(f) Section 409A Limit. “**Section 409A Limit**” means the lesser of two (2) times: (i) Executive’s annualized compensation based upon the annual rate of pay paid to Executive during the Executive’s taxable year preceding the Executive’s taxable year of Executive’s termination of employment as determined under, and with such adjustments as are set forth in, Treasury Regulation 1.409A-1(b)(9)(iii)(A)(1) and any Internal Revenue Service guidance issued with respect thereto; or (ii) the maximum amount that may be taken into account under a qualified plan pursuant to Section 401(a)(17) of the Code for the year in which Executive’s employment is terminated.

14. Assignment. This Agreement will be binding upon and inure to the benefit of (a) the heirs, executors and legal representatives of Executive upon Executive’s death and (b) any successor of the Company. Any such successor of the Company will be deemed substituted for the Company under the terms of this Agreement for all purposes. For this purpose, “successor” means any person, firm, corporation or other business entity which at any time, whether by purchase, merger or otherwise, directly or indirectly acquires all or substantially all of the assets or business of the Company. None of the rights of Executive to receive any form of compensation payable pursuant to this Agreement may be assigned or transferred except by will or the laws of descent and distribution. Any other attempted assignment, transfer, conveyance or other disposition of Executive’s right to compensation or other benefits will be null and void.

15. Notices. All notices, requests, demands and other communications called for hereunder shall be in writing and shall be deemed given (i) on the date of delivery if delivered personally, (ii) one (1) day after being sent by a well established commercial overnight service, or (iii) four (4) days after being mailed by registered or certified mail, return receipt requested, prepaid and addressed to the parties or their successors at the following addresses, or at such other addresses as the parties may later designate in writing:

If to the Company:

Pacific Biosciences of California, Inc.
1380 Willow Road
Menlo Park, CA 94025
Attn: General Counsel

If to Executive:

at the last residential address known by the Company.

16. Severability. In the event that any provision hereof becomes or is declared by a court of competent jurisdiction to be illegal, unenforceable or void, this Agreement will continue in full force and effect without said provision.

17. Integration. This Agreement, together with the Confidentiality Agreement and the Change in Control Severance Agreement, represents the entire agreement and understanding between the parties as to the subject matter herein and supersedes all prior or contemporaneous agreements whether written or oral, including but not limited to the Executive Chairman Agreement entered into between Executive and the Company dated October 25, 2011 (the "**Chairman Agreement**") except with respect to Section 2 of the Chairman Agreement ("*Confidentiality*") which will continue in effect following the Effective Date. No waiver, alteration, or modification of any of the provisions of this Agreement will be binding unless in writing and signed by duly authorized representatives of the parties hereto.

18. Withholding. All payments made pursuant to this Agreement will be subject to withholding of applicable income and employment taxes.

19. Choice of Law. The validity, interpretation, construction, and performance of this Agreement will be governed by the laws of the State of California (with the exception of its conflict of laws provisions). Any claims or legal actions by one party against the other arising out of the relationship between the parties contemplated herein (whether or not arising under this Agreement) will be commenced or maintained in any state or federal court located in San Mateo County, California, and Executive and the Company hereby submit to the jurisdiction and venue of any such court.

20. Acknowledgment. Executive acknowledges that he has had the opportunity to discuss this matter with and obtain advice from his private attorney, has had sufficient time to, and has carefully read and fully understands all the provisions of this Agreement, and is knowingly and voluntarily entering into this Agreement.

21. Headings. All captions and section headings used in this Agreement are for convenient reference only and do not form a part of this Agreement.

22. Counterparts. This Agreement may be executed in counterparts, each of which will be deemed an original, but all of which together will constitute one and the same instrument.

[Signature Page Follows]

IN WITNESS WHEREOF, each of the parties has executed this Agreement, in the case of the Company by their duly authorized officers, as of the day and year first above written.

COMPANY:

PACIFIC BIOSCIENCES OF CALIFORNIA, INC.

By: /s/ Susan Barnes
Susan Barnes

Date: January 19, 2012

Title: Chief Financial Officer

EXECUTIVE:

/s/ Michael Hunkapiller
Michael Hunkapiller

Date: January 19, 2012

PACIFIC BIOSCIENCES OF CALIFORNIA, INC.

CHANGE IN CONTROL SEVERANCE AGREEMENT

This Change in Control Severance Agreement (the "**Agreement**") is made and entered into by and between Michael Hunkapiller ("**Executive**") and Pacific Biosciences of California, Inc., a Delaware corporation (the "**Company**"), effective as of January 5, 2012 (the "**Effective Date**").

RECITALS

1. It is expected that the Company from time to time will consider the possibility of an acquisition by another company or other change in control. The Board of Directors of the Company (the "**Board**") recognizes that such considerations can be a distraction to Executive and can cause Executive to consider alternative employment opportunities. The Board has determined that it is in the best interests of the Company and its stockholders to assure that the Company will have the continued dedication and objectivity of Executive, notwithstanding the possibility, threat or occurrence of such a termination of employment or the occurrence of a Change in Control (as defined herein) of the Company.

2. The Board believes that it is in the best interests of the Company and its stockholders to provide Executive with an incentive to continue his employment and to motivate Executive to maximize the value of the Company for the benefit of its stockholders.

3. The Board believes that it is imperative to provide Executive with certain severance benefits upon Executive's termination of employment in connection with a Change in Control. These benefits will provide Executive with enhanced financial security, incentive and encouragement to remain with the Company.

4. Certain capitalized terms used in the Agreement are defined in Section 7 below.

AGREEMENT

NOW, THEREFORE, in consideration of the mutual covenants contained herein, the parties hereto agree as follows:

1. Term of Agreement. This Agreement will have an initial term of three (3) years commencing on the Effective Date (the "**Initial Term**"). On the third anniversary of the Effective Date, this Agreement will renew automatically for additional one (1) year terms (each an "**Additional Term**"), unless either party provides the other party with written notice of non-renewal at least sixty (60) days prior to the date of automatic renewal. Notwithstanding the foregoing provisions of this paragraph, if a Change in Control occurs when there are fewer than twelve (12) months remaining during the Initial Term or an Additional Term, the term of this Agreement will extend automatically through the date that is twelve (12) months following the effective date of the Change in Control. If Executive becomes entitled to benefits under Section 3 during the term of this Agreement, the Agreement will not terminate until all of the obligations of the parties hereto with respect to this Agreement have been satisfied.

2. At-Will Employment. The Company and Executive acknowledge that Executive's employment is and will continue to be at-will, as defined under applicable law.

3. Severance Benefits.

(a) Termination without Cause or Other than Death or Disability or Resignation for Good Reason Within Twelve Months Following a Change in Control. If on or within twelve (12) months following a Change in Control, (i) the Company terminates Executive's employment with the Company for a reason other than (A) Cause, (B) Executive's death, or (C) Executive's Disability, or (ii) Executive resigns for Good Reason, then, in each case subject to Section 4, Executive will receive the following severance from the Company:

(i) Base Salary Severance. Executive will receive continuing payments of severance at a rate equal to Executive's base salary rate, less applicable withholdings, as in effect immediately prior to Executive's termination of employment (unless such termination occurs as a result of clause (ii) of the definition of "**Good Reason**" under Section 7(d) below, in which case the amount will be equal to Executive's base salary as in effect immediately prior to such reduction) or, if greater, as in effect immediately prior to the Change in Control, for twelve (12) months from the date of such termination of employment, to be paid periodically in accordance with the Company's normal payroll policies.

(ii) Equity. One hundred percent (100%) of the unvested portion of the Executive's then-outstanding equity awards (the "**Awards**") will immediately vest and, to the extent applicable, become exercisable, as of the date of such termination. The Awards will remain exercisable, to the extent applicable, following Executive's termination for the period prescribed in the applicable equity plan and agreement for each Award.

(iii) Continued Employee Benefits. If Executive elects continuation coverage pursuant to the Consolidated Omnibus Budget Reconciliation Act of 1985, as amended ("**COBRA**") for Executive and Executive's eligible dependents (as applicable), within the time period prescribed pursuant to COBRA, the Company will reimburse Executive for, or pay directly on Executive's behalf, the COBRA premiums for such coverage (at the coverage levels in effect immediately prior to Executive's termination of employment) until the earlier of (A) a period of twelve (12) months from the last date of employment of the Executive with the Company, or (B) the date upon which Executive and/or Executive's eligible dependents becomes covered under similar plans. However, if the Company determines in its sole discretion that it cannot provide the COBRA benefits without potentially violating applicable law (including, without limitation, Section 2716 of the Public Health Service Act), the Company will in lieu thereof provide to Executive a taxable monthly payment in an amount equal to the monthly COBRA premium that Executive would be required to pay to continue his group health coverage in effect on the date of his termination of employment (which amount will be based on the premium for the first month of COBRA coverage), which payments will be made regardless of whether Executive elects COBRA continuation coverage.

(b) Other Termination. If Executive's employment with the Company terminates other than as set forth in Section 3(a) above, then (i) all vesting will terminate immediately with respect to Executive's outstanding Awards, (ii) all payments of compensation by the Company to Executive hereunder will terminate immediately (except as to amounts already earned), and (iii) Executive will only be eligible for severance benefits in accordance with the Company's established policies, if any, as then in effect.

(c) Exclusive Remedy. In the event of a termination of Executive's employment as set forth in Section 3(a) of this Agreement, the provisions of Section 3 are intended to be and are exclusive and in lieu of and supersede any other rights or remedies to which Executive or the Company otherwise may be entitled, whether at law, tort or contract or in equity, or under this Agreement (other than the payment of accrued but unpaid wages, as required by law, and any unreimbursed reimbursable expenses). Executive will be entitled to no benefits, compensation or other payments or rights upon termination of employment other than those benefits expressly set forth in Section 3 of this Agreement.

4. Non-Duplication of Benefits. In the event that Executive is entitled to benefits pursuant to this Agreement, the payments and benefits set forth herein are intended to be and are exclusive and in lieu of any payments or benefits set forth under Section 9 of the Employment Agreement entered into between Executive and the Company of even date herewith (the "**Employment Agreement**"), and Executive will be entitled to no payments or benefits under Section 9 of the Employment Agreement.

5. Conditions to Receipt of Severance

(a) Release of Claims Agreement. The receipt of any severance payments or benefits pursuant to this Agreement is subject to Executive signing and not revoking a separation agreement and release of claims in a form acceptable to the Company (the "**Release**"), which must become effective and irrevocable no later than the sixtieth (60th) day following Executive's termination of employment (the "**Release Deadline**"). If the Release does not become effective and irrevocable by the Release Deadline, Executive will forfeit any right to severance payments or benefits under this Agreement. No severance payments and benefits under Section 3 of this Agreement will be paid or provided until the Release becomes effective and irrevocable, and, subject to Section 5(c) of this Agreement, any such severance payments and benefits otherwise payable between the date of Executive's termination of employment and the date the Release becomes effective and irrevocable will be paid on the date the Release becomes effective and irrevocable.

(b) Confidential Information and Invention Assignment Agreements. Executive's receipt of any payments or benefits under Section 3 will be subject to Executive continuing to comply with the terms of any confidential information and invention assignment agreement executed by Executive in favor of the Company (the "**Confidentiality Agreement**") and the provisions of this Agreement.

(c) Section 409A.

(i) Notwithstanding anything to the contrary in this Agreement, no severance payments or benefits payable to Executive, if any, pursuant to this Agreement that, when considered together with any other severance payments or separation benefits, is considered deferred compensation under Internal Revenue Code Section 409A (together, the "**Deferred Payments**") will be payable until Executive has a "separation from service" within the meaning of Section 409A ("**Section 409A**") of the Internal Revenue Code of 1986, as amended (the "**Code**"). Similarly, no severance payable to Executive, if any, pursuant to this Agreement that otherwise would be exempt from Section 409A pursuant to Treasury Regulation Section 1.409A-1(b)(9) will be payable until Executive has a "separation from service" within the meaning of Section 409A.

(ii) Any severance payments or benefits under this Agreement that would be considered Deferred Payments will be paid on, or, in the case of installments, will not commence until, the sixtieth (60^{th}) day following Executive's separation from service, or, if later, such time as required by Section 5(c)(iii). Except as required by Section 5(c)(iii), any installment payments that would have been made to Executive during the sixty (60) day period immediately following Executive's separation from service but for the preceding sentence will be paid to Executive on the sixtieth (60^{th}) day following Executive's separation from service and the remaining payments shall be made as provided in this Agreement.

(iii) Further, if Executive is a "specified employee" within the meaning of Section 409A at the time of Executive's separation from service (other than due to death), any Deferred Payments that otherwise are payable within the first six (6) months following Executive's separation from service will become payable on the first payroll date that occurs on or after the date six (6) months and one (1) day following the date of Executive's separation from service. All subsequent Deferred Payments, if any, will be payable in accordance with the payment schedule applicable to each payment or benefit. Notwithstanding anything herein to the contrary, in the event of Executive's death following Executive's separation from service but prior to the six (6) month anniversary of Executive's separation from service (or any later delay date), then any payments delayed in accordance with this paragraph will be payable in a lump sum as soon as administratively practicable after the date of Executive's death and all other Deferred Payments will be payable in accordance with the payment schedule applicable to each payment or benefit. Each payment and benefit payable under the Agreement is intended to constitute a separate payment for purposes of Section 1.409A-2(b)(2) of the Treasury Regulations.

(iv) Any amount paid under this Agreement that satisfies the requirements of the "short-term deferral" rule set forth in Section 1.409A-1(b)(4) of the Treasury Regulations will not constitute Deferred Payments for purposes of clause (i) above. Any amount paid under this Agreement that qualifies as a payment made as a result of an involuntary separation from service pursuant to Section 1.409A-1(b)(9)(iii) of the Treasury Regulations that does not exceed the Section 409A Limit (as defined below) will not constitute Deferred Payments for purposes of clause (i) above.

(v) The foregoing provisions are intended to comply with, or be exempt from, the requirements of Section 409A so that none of the severance payments and benefits to be provided under the Agreement will be subject to the additional tax imposed under Section 409A, and any ambiguities herein will be interpreted to so comply or be exempt. Executive and the Company agree to work together in good faith to consider amendments to the Agreement and to take such reasonable actions which are necessary, appropriate or desirable to avoid imposition of any additional tax or income recognition prior to actual payment to Executive under Section 409A. In no event will the Company reimburse Executive for any taxes that may be imposed on Executive as result of Section 409A.

6. Limitation on Payments. In the event that the severance and other benefits provided for in this Agreement or otherwise payable to Executive (i) constitute "parachute payments" within the meaning of Section 280G of the Code and (ii) but for this Section 6, would be subject to the excise tax imposed by Section 4999 of the Code, then Executive's severance benefits under Section 3 will be either:

(a) delivered in full, or

(b) delivered as to such lesser extent which would result in no portion of such severance benefits being subject to excise tax under Section 4999 of the Code,

whichever of the foregoing amounts, taking into account the applicable federal, state and local income taxes and the excise tax imposed by Section 4999, results in the receipt by Executive on an after-tax basis, of the greatest amount of severance benefits, notwithstanding that all or some portion of such severance benefits may be taxable under Section 4999 of the Code. If a reduction in severance and other benefits constituting "parachute payments" is necessary so that benefits are delivered to a lesser extent, reduction will occur in the following order: (i) reduction of cash payments; (ii) cancellation of awards granted "contingent on a change in ownership or control" (within the meaning of Code Section 280G), (iii) cancellation of accelerated vesting of equity awards; (iv) reduction of employee benefits. In the event that acceleration of vesting of equity award compensation is to be reduced, such acceleration of vesting will be cancelled in the reverse order of the date of grant of Executive's equity awards.

Unless the Company and Executive otherwise agree in writing, any determination required under this Section 6 will be made in writing by the Company's independent public accountants immediately prior to the Change in Control (the "**Accountants**"), whose determination will be conclusive and binding upon Executive and the Company for all purposes. For purposes of making the calculations required by this Section 6, the Accountants may make reasonable assumptions and approximations concerning applicable taxes and may rely on reasonable, good faith interpretations concerning the application of Sections 280G and 4999 of the Code. The Company and Executive will furnish to the Accountants such information and documents as the Accountants may reasonably request in order to make a determination under this Section. The Company will bear all costs the Accountants may reasonably incur in connection with any calculations contemplated by this Section 6.

7. Definition of Terms. For purposes of this Agreement, the following terms referred to in this Agreement will have the following meanings:

(a) Cause. "**Cause**" means (i) conviction of any felony; (ii) conviction of any crime involving moral turpitude or dishonesty that causes, or is likely to cause, material harm to the

Company; (iii) participation in a fraud or willful act of dishonesty against the Company that causes, or is likely to cause, material harm to the Company; (iv) intentional and material damage to the Company's property; or (v) material breach of the Company's Proprietary Information and Inventions Agreement.

(b) Change in Control. "**Change in Control**" means the occurrence of any of the following:

(i) A change in the ownership of the Company which occurs on the date that any one person, or more than one person acting as a group ("**Person**"), acquires ownership of the stock of the Company that, together with the stock held by such Person, constitutes more than 50% of the total voting power of the stock of the Company; provided, however, that for purposes of this subsection (i), the acquisition of additional stock by any one Person, who is considered to own more than 50% of the total voting power of the stock of the Company will not be considered a Change in Control; or

(ii) A change in the effective control of the Company which occurs on the date that a majority of members of the Board (each, a "**Director**") is replaced during any twelve (12) month period by Directors whose appointment or election is not endorsed by a majority of the members of the Board prior to the date of the appointment or election. For purposes of this subsection (ii), if any Person is considered to be in effective control of the Company, the acquisition of additional control of the Company by the same Person will not be considered a Change in Control; or

(iii) A change in the ownership of a substantial portion of the Company's assets which occurs on the date that any Person acquires (or has acquired during the twelve (12) month period ending on the date of the most recent acquisition by such person or persons) assets from the Company that have a total gross fair market value equal to or more than 50% of the total gross fair market value of all of the assets of the Company immediately prior to such acquisition or acquisitions; provided, however, that for purposes of this subsection (iii), the following will not constitute a change in the ownership of a substantial portion of the Company's assets: (A) a transfer to an entity that is controlled by the Company's stockholders immediately after the transfer, or (B) a transfer of assets by the Company to: (1) a stockholder of the Company (immediately before the asset transfer) in exchange for or with respect to the Company's stock, (2) an entity, 50% or more of the total value or voting power of which is owned, directly or indirectly, by the Company, (3) a Person, that owns, directly or indirectly, 50% or more of the total value or voting power of all the outstanding stock of the Company, or (4) an entity, at least 50% of the total value or voting power of which is owned, directly or indirectly, by a Person described in this subsection (iii)(B)(3). For purposes of this subsection (iii), gross fair market value means the value of the assets of the Company, or the value of the assets being disposed of, determined without regard to any liabilities associated with such assets.

For purposes of this definition of Change in Control, persons will be considered to be acting as a group if they are owners of a corporation that enters into a merger, consolidation, purchase or acquisition of stock, or similar business transaction with the Company.

Notwithstanding the foregoing, a transaction will not be deemed a Change in Control unless the transaction qualifies as a change in control event within the meaning of Code Section 409A, as it has been and may be amended from time to time, and any proposed or final Treasury Regulations and Internal Revenue Service guidance that has been promulgated or may be promulgated thereunder from time to time.

Further and for the avoidance of doubt, a transaction will not constitute a Change in Control if: (i) its sole purpose is to change the state of the Company's incorporation, or (ii) its sole purpose is to create a holding company that will be owned in substantially the same proportions by the persons who held the Company's securities immediately before such transaction.

(c) Disability. "**Disability**" means Executive is unable to engage in any substantial gainful activity by reason of any medically determinable physical or mental impairment that can be expected to result in death or can be expected to last for a continuous period of not less than twelve (12) months.

(d) Good Reason. "**Good Reason**" means Executive's termination of employment within thirty (30) days following the expiration of any cure period (discussed below) following the occurrence of one or more of the following, without Executive's express written consent: (i) a material reduction of Executive's duties, authority, or responsibilities, relative to Executive's duties, authority, or responsibilities as in effect immediately prior to such reduction, or any change which results in Executive ceasing to serve as the Chief Executive Officer of the Company, provided that, for the avoidance of doubt, Executive ceasing to serve as President of the Company or Executive Chairman of the Board shall not constitute "**Good Reason**"; (ii) a material reduction by the Company in Executive's annualized base pay as in effect immediately prior to such reduction (in other words, a reduction of more than ten percent (10%) of Executive's annualized base compensation in any one year, other than a reduction applicable to executives generally that does not adversely affect Executive to a greater extent than other similarly situated executives); (iii) the relocation of Executive's principal place of performing his duties as an employee of the Company by more than fifty (50) miles; or (iv) the failure of the Company to obtain the assumption of this Agreement by a successor. In order for an event to qualify as Good Reason, Executive must not terminate employment with the Company without first providing the Company with written notice of the acts or omissions constituting the grounds for "**Good Reason**" within ninety (90) days of the initial existence of the grounds for "**Good Reason**" and a reasonable cure period of not less than thirty (30) days following the date of such notice.

(e) Section 409A Limit. "**Section 409A Limit**" means the lesser of two (2) times: (i) Executive's annualized compensation based upon the annual rate of pay paid to Executive during the Executive's taxable year preceding the Executive's taxable year of Executive's termination of employment as determined under, and with such adjustments as are set forth in, Treasury Regulation 1.409A-1(b)(9)(iii)(A)(1) and any Internal Revenue Service guidance issued with respect thereto; or (ii) the maximum amount that may be taken into account under a qualified plan pursuant to Section 401(a)(17) of the Code for the year in which Executive's employment is terminated.

8. Successors.

(a) The Company's Successors. Any successor to the Company (whether direct or indirect and whether by purchase, merger, consolidation, liquidation or otherwise) to all or substantially all of the Company's business and/or assets will assume the obligations under this Agreement and agree expressly to perform the obligations under this Agreement in the same manner and to the same extent as the Company would be required to perform such obligations in the absence of a succession. For all purposes under this Agreement, the term "**Company**" will include any successor to the Company's business and/or assets which executes and delivers the assumption agreement described in this Section 8(a) or which becomes bound by the terms of this Agreement by operation of law.

(b) Executive's Successors. The terms of this Agreement and all rights of Executive hereunder will inure to the benefit of, and be enforceable by, Executive's personal or legal representatives, executors, administrators, successors, heirs, distributees, devisees and legatees.

9. Notice.

(a) General. Notices and all other communications contemplated by this Agreement will be in writing and will be deemed to have been duly given when personally delivered or when mailed by U.S. registered or certified mail, return receipt requested and postage prepaid. In the case of Executive, mailed notices will be addressed to him or her at the home address which he or she most recently communicated to the Company in writing. In the case of the Company, mailed notices will be addressed to its corporate headquarters, and all notices will be directed to the General Counsel of the Company.

(b) Notice of Termination. Any termination by the Company for Cause or by Executive for Good Reason or as a result of a voluntary resignation will be communicated by a notice of termination to the other party hereto given in accordance with Section 9(a) of this Agreement. Such notice will indicate the specific termination provision in this Agreement relied upon, will set forth in reasonable detail the facts and circumstances claimed to provide a basis for termination under the provision so indicated, and will specify the termination date (which will be not more than thirty (30) days after the giving of such notice). The failure by Executive to include in the notice any fact or circumstance which contributes to a showing of Good Reason will not waive any right of Executive hereunder or preclude Executive from asserting such fact or circumstance in enforcing Executive's rights hereunder.

10. Miscellaneous Provisions.

(a) No Duty to Mitigate. Executive will not be required to mitigate the amount of any payment contemplated by this Agreement, nor will any such payment be reduced by any earnings that Executive may receive from any other source.

(b) Waiver. No provision of this Agreement will be modified, waived or discharged unless the modification, waiver or discharge is agreed to in writing and signed by Executive and by an authorized officer of the Company (other than Executive). No waiver by either party of any breach of, or of compliance with, any condition or provision of this Agreement by the other party will be considered a waiver of any other condition or provision or of the same condition or provision at another time.

(c) Headings. All captions and section headings used in this Agreement are for convenient reference only and do not form a part of this Agreement.

(d) Entire Agreement. This Agreement, together with the Confidentiality Agreement and the Employment Agreement, constitute the entire agreement of the parties hereto and supersedes in their entirety all prior representations, understandings, undertakings or agreements (whether oral or written and whether expressed or implied) of the parties with respect to the subject matter hereof, including but not limited to the Executive Chairman Agreement entered into between Executive and the Company dated October 25, 2011 (the "**Chairman Agreement**") except with respect to Section 2 of the Chairman Agreement ("*Confidentiality*") which will continue in effect following the Effective Date. No waiver, alteration, or modification of any of the provisions of this Agreement will be binding unless in writing and signed by duly authorized representatives of the parties hereto and which specifically mention this Agreement.

(e) Choice of Law. The validity, interpretation, construction, and performance of this Agreement will be governed by the laws of the State of California (with the exception of its conflict of laws provisions). Any claims or legal actions by one party against the other arising out of the relationship between the parties contemplated herein (whether or not arising under this Agreement) will be commenced or maintained in any state or federal court located in San Mateo County, California, and Executive and the Company hereby submit to the jurisdiction and venue of any such court.

(f) Severability. The invalidity or unenforceability of any provision or provisions of this Agreement will not affect the validity or enforceability of any other provision hereof, which will remain in full force and effect.

(g) Withholding. All payments made pursuant to this Agreement will be subject to withholding of applicable income and employment taxes.

(h) Counterparts. This Agreement may be executed in counterparts, each of which will be deemed an original, but all of which together will constitute one and the same instrument.

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IN WITNESS WHEREOF, each of the parties has executed this Agreement, in the case of the Company by its duly authorized officer, as of the day and year set forth below.

COMPANY:

PACIFIC BIOSCIENCES OF CALIFORNIA, INC.

By: /s/ Susan Barnes
Susan Barnes

Date: January 19, 2012

Title: Chief Financial Officer

EXECUTIVE:

/s/ Michael Hunkapiller
Michael Hunkapiller

Date: January 19, 2012

Exhibit 10.34

PACIFIC BIOSCIENCES OF CALIFORNIA, INC.

CHANGE IN CONTROL SEVERANCE AGREEMENT

This Change in Control Severance Agreement (the "*Agreement*") is made and entered into by and between Michael J. Glynn ("*Executive*") and Pacific Biosciences of California, Inc., a Delaware corporation (the "*Company*"), effective as of August 31, 2011 (the "*Effective Date*").

RECITALS

1. It is expected that the Company from time to time will consider the possibility of an acquisition by another company or other change in control. The Board of Directors of the Company (the "*Board*") recognizes that such considerations can be a distraction to Executive and can cause Executive to consider alternative employment opportunities. The Board has determined that it is in the best interests of the Company and its stockholders to assure that the Company will have the continued dedication and objectivity of Executive, notwithstanding the possibility, threat or occurrence of such a termination of employment or the occurrence of a Change in Control (as defined herein) of the Company.

2. The Board believes that it is in the best interests of the Company and its stockholders to provide Executive with an incentive to continue his employment and to motivate Executive to maximize the value of the Company for the benefit of its stockholders.

3. The Board believes that it is imperative to provide Executive with certain severance benefits upon Executive's termination of employment in connection with a Change in Control. These benefits will provide Executive with enhanced financial security, incentive and encouragement to remain with the Company.

4. Certain capitalized terms used in the Agreement are defined in Section 7 below.

AGREEMENT

NOW, THEREFORE, in consideration of the mutual covenants contained herein, the parties hereto agree as follows:

1. <u>Term of Agreement</u>. This Agreement will have an initial term of three (3) years commencing on the Effective Date (the "*Initial Term*"). On the third anniversary of the Effective Date, this Agreement will renew automatically for additional one (1) year terms (each an "*Additional Term*"), unless either party provides the other party with written notice of non-renewal at least sixty (60) days prior to the date of automatic renewal. Notwithstanding the foregoing provisions of this paragraph, if a Change in Control occurs when there are fewer than twelve (12) months remaining during the Initial Term or an Additional Term, the term of this Agreement will extend automatically

through the date that is twelve (12) months following the effective date of the Change in Control. If Executive becomes entitled to benefits under Section 3 during the term of this Agreement, the Agreement will not terminate until all of the obligations of the parties hereto with respect to this Agreement have been satisfied.

2. At-Will Employment. The Company and Executive acknowledge that Executive's employment is and will continue to be at-will, as defined under applicable law.

3. Severance Benefits.

(a) Termination without Cause or Other than Death or Disability or Resignation for Good Reason Within Twelve Months Following a Change in Control. If on or within twelve (12) months following a Change in Control, the Company terminates Executive's employment with the Company for a reason other than Cause or Executive's death or Disability or Executive resigns for Good Reason, then, in each case subject to Section 5, Executive will receive the following severance from the Company:

(i) Base Salary Severance. Executive will receive continuing payments of severance at a rate equal to Executive's base salary rate, less applicable withholdings, as in effect immediately prior to Executive's termination of employment (unless such termination occurs as a result of clause (ii) of the definition of "Good Reason" under Section 7(d) below, in which case the amount will be equal to Executive's base salary as in effect immediately prior to such reduction) or, if greater, as in effect immediately prior to the Change in Control, for six (6) months from the date of such termination of employment, to be paid periodically in accordance with the Company's normal payroll policies.

(ii) Equity. One hundred percent (100%) of the unvested portion of the Executive's then-outstanding equity awards (the "*Awards*") will immediately vest and, to the extent applicable, become exercisable, as of the date of such termination. The Awards will remain exercisable, to the extent applicable, following Executive's termination for the period prescribed in the applicable equity plan and agreement for each Award.

(iii) Continued Employee Benefits. If Executive elects continuation coverage pursuant to the Consolidated Omnibus Budget Reconciliation Act of 1985, as amended ("*COBRA*") for Executive and Executive's eligible dependents (as applicable), within the time period prescribed pursuant to COBRA, the Company will reimburse Executive for, or pay directly on Executive's behalf, the COBRA premiums for such coverage (at the coverage levels in effect immediately prior to Executive's termination of employment) until the earlier of (A) a period of six (6) months from the last date of employment of the Executive with the Company, or (B) the date upon which Executive and/or Executive's eligible dependents becomes covered under similar plans.

(b) Other Termination. If Executive's employment with the Company terminates other than as set forth in Section 3(a) above, then (i) all vesting will terminate immediately with respect to Executive's outstanding Awards, (ii) all payments of compensation by the Company to Executive hereunder will terminate immediately (except as to amounts already earned), and

(iii) Executive will only be eligible for severance benefits in accordance with the Company's established policies, if any, as then in effect (except as otherwise expressly set forth regarding "Involuntary Termination" in the offer letter entered into between Executive and the Company of even date herewith).

(c) Exclusive Remedy. In the event of a termination of Executive's employment as set forth in Section 3(a) of this Agreement, the provisions of Section 3 are intended to be and are exclusive and in lieu of and supersede any other rights or remedies to which Executive or the Company otherwise may be entitled, whether at law, tort or contract or in equity, or under this Agreement (other than the payment of accrued but unpaid wages, as required by law, and any unreimbursed reimbursable expenses). Executive will be entitled to no benefits, compensation or other payments or rights upon termination of employment other than those benefits expressly set forth in Section 3 of this Agreement.

4. Non-Duplication of Benefits. In the event that Executive is entitled to benefits pursuant to this Agreement, the payments and benefits set forth herein are intended to be and are exclusive and in lieu of any severance payments or benefits for "Involuntary Termination" as described in the offer letter entered into between Executive and the Company of even date herewith, and Executive will be entitled to no such payments or benefits.

5. Conditions to Receipt of Severance

(a) Release of Claims Agreement. The receipt of any severance payments or benefits pursuant to this Agreement is subject to Executive signing and not revoking a separation agreement and release of claims in a form acceptable to the Company (the "*Release*"), which must become effective and irrevocable no later than the sixtieth (60^{th}) day following Executive's termination of employment (the "*Release Deadline*"). If the Release does not become effective and irrevocable by the Release Deadline, Executive will forfeit any right to severance payments or benefits under this Agreement. No severance payments and benefits under Section 3 of this Agreement will be paid or provided until the Release becomes effective and irrevocable, and any such severance payments and benefits otherwise payable between the date of Executive's termination of employment and the date the Release becomes effective and irrevocable will be paid on the date the Release becomes effective and irrevocable.

(b) Confidential Information and Invention Assignment Agreements. Executive's receipt of any payments or benefits under Section 3 will be subject to Executive continuing to comply with the terms of any confidential information and invention assignment agreement executed by Executive in favor of the Company and the provisions of this Agreement.

(c) Section 409A.

(i) Notwithstanding anything to the contrary in this Agreement, no severance payments or benefits payable to Executive, if any, pursuant to this Agreement that, when considered together with any other severance payments or separation benefits, is considered deferred compensation under Internal Revenue Code Section 409A (together, the "*Deferred Payments*") will be payable until Executive has a "separation from service" within the meaning of Section 409A ("*Section 409A*") of the Internal Revenue Code of 1986, as amended (the "*Code*"). Similarly, no severance payable to Executive, if any, pursuant to this Agreement that otherwise would be exempt from Section 409A pursuant to Treasury Regulation Section 1.409A-1(b)(9) will be payable until Executive has a "separation from service" within the meaning of Section 409A.

(ii) Any severance payments or benefits under this Agreement that would be considered Deferred Payments will be paid on, or, in the case of installments, will not commence until, the sixtieth (60^{th}) day following Executive's separation from service, or, if later, such time as required by Section 5(c)(iii). Except as required by Section 5(c)(iii), any installment payments that would have been made to Executive during the sixty (60) day period immediately following Executive's separation from service but for the preceding sentence will be paid to Executive on the sixtieth (60^{th}) day following Executive's separation from service and the remaining payments shall be made as provided in this Agreement.

(iii) Further, if Executive is a "specified employee" within the meaning of Section 409A at the time of Executive's separation from service (other than due to death), any Deferred Payments that otherwise are payable within the first six (6) months following Executive's separation from service will become payable on the first payroll date that occurs on or after the date six (6) months and one (1) day following the date of Executive's separation from service. All subsequent Deferred Payments, if any, will be payable in accordance with the payment schedule applicable to each payment or benefit. Notwithstanding anything herein to the contrary, in the event of Executive's death following Executive's separation from service but prior to the six (6) month anniversary of Executive's separation from service (or any later delay date), then any payments delayed in accordance with this paragraph will be payable in a lump sum as soon as administratively practicable after the date of Executive's death and all other Deferred Payments will be payable in accordance with the payment schedule applicable to each payment or benefit. Each payment and benefit payable under the Agreement is intended to constitute a separate payment for purposes of Section 1.409A-2(b)(2) of the Treasury Regulations.

(iv) Any amount paid under this Agreement that satisfies the requirements of the "short-term deferral" rule set forth in Section 1.409A-1(b)(4) of the Treasury Regulations will not constitute Deferred Payments for purposes of clause (i) above. Any amount paid under this Agreement that qualifies as a payment made as a result of an involuntary separation from service pursuant to Section 1.409A-1(b)(9)(iii) of the Treasury Regulations that does not exceed the Section 409A Limit (as defined below) will not constitute Deferred Payments for purposes of clause (i) above.

(v) The foregoing provisions are intended to comply with, or be exempt from, the requirements of Section 409A so that none of the severance payments and benefits to be provided under the Agreement will be subject to the additional tax imposed under Section 409A, and any ambiguities herein will be interpreted to so comply or be exempt. Executive and the Company agree to work together in good faith to consider amendments to the Agreement and to take such reasonable actions which are necessary, appropriate or desirable to avoid imposition of any additional tax or income recognition prior to actual payment to Executive under Section 409A. In no event will the Company reimburse Executive for any taxes that may be imposed on Executive as result of Section 409A.

6. Limitation on Payments. In the event that the severance and other benefits provided for in this Agreement or otherwise payable to Executive (i) constitute “parachute payments” within the meaning of Section 280G of the Code and (ii) but for this Section 6, would be subject to the excise tax imposed by Section 4999 of the Code, then Executive’s severance benefits under Section 3 will be either:

(a) delivered in full, or

(b) delivered as to such lesser extent which would result in no portion of such severance benefits being subject to excise tax under Section 4999 of the Code,

whichever of the foregoing amounts, taking into account the applicable federal, state and local income taxes and the excise tax imposed by Section 4999, results in the receipt by Executive on an after-tax basis, of the greatest amount of severance benefits, notwithstanding that all or some portion of such severance benefits may be taxable under Section 4999 of the Code. If a reduction in severance and other benefits constituting “parachute payments” is necessary so that benefits are delivered to a lesser extent, reduction will occur in the following order: (i) reduction of cash payments; (ii) cancellation of awards granted “contingent on a change in ownership or control” (within the meaning of Code Section 280G), (iii) cancellation of accelerated vesting of equity awards; (iv) reduction of employee benefits. In the event that acceleration of vesting of equity award compensation is to be reduced, such acceleration of vesting will be cancelled in the reverse order of the date of grant of Executive’s equity awards.

Unless the Company and Executive otherwise agree in writing, any determination required under this Section 6 will be made in writing by the Company’s independent public accountants immediately prior to the Change in Control (the “*Accountants*”), whose determination will be conclusive and binding upon Executive and the Company for all purposes. For purposes of making the calculations required by this Section 6, the Accountants may make reasonable assumptions and approximations concerning applicable taxes and may rely on reasonable, good faith interpretations concerning the application of Sections 280G and 4999 of the Code. The Company and Executive will furnish to the Accountants such information and documents as the Accountants may reasonably request in order to make a determination under this Section. The Company will bear all costs the Accountants may reasonably incur in connection with any calculations contemplated by this Section 6.

7. Definition of Terms. For purposes of this Agreement, the following terms referred to in this Agreement will have the following meanings:

(a) Cause. “*Cause*” means (i) conviction of any felony; (ii) conviction of any crime involving moral turpitude or dishonesty that causes, or is likely to cause, material harm to the Company; (iii) participation in a fraud or willful act of dishonesty against the Company that causes, or is likely to cause, material harm to the Company; (iv) intentional and material damage to the Company's property; or (v) material breach of the Company's Proprietary Information and Inventions Agreement.

(b) Change in Control. "*Change in Control*" means the occurrence of any of the following:

(i) A change in the ownership of the Company which occurs on the date that any one person, or more than one person acting as a group ("*Person*"), acquires ownership of the stock of the Company that, together with the stock held by such Person, constitutes more than 50% of the total voting power of the stock of the Company; provided, however, that for purposes of this subsection (i), the acquisition of additional stock by any one Person, who is considered to own more than 50% of the total voting power of the stock of the Company will not be considered a Change in Control; or

(ii) A change in the effective control of the Company which occurs on the date that a majority of members of the Board (each, a "*Director*") is replaced during any twelve (12) month period by Directors whose appointment or election is not endorsed by a majority of the members of the Board prior to the date of the appointment or election. For purposes of this subsection (ii), if any Person is considered to be in effective control of the Company, the acquisition of additional control of the Company by the same Person will not be considered a Change in Control; or

(iii) A change in the ownership of a substantial portion of the Company's assets which occurs on the date that any Person acquires (or has acquired during the twelve (12) month period ending on the date of the most recent acquisition by such person or persons) assets from the Company that have a total gross fair market value equal to or more than 50% of the total gross fair market value of all of the assets of the Company immediately prior to such acquisition or acquisitions; provided, however, that for purposes of this subsection (iii), the following will not constitute a change in the ownership of a substantial portion of the Company's assets: (A) a transfer to an entity that is controlled by the Company's stockholders immediately after the transfer, or (B) a transfer of assets by the Company to: (1) a stockholder of the Company (immediately before the asset transfer) in exchange for or with respect to the Company's stock, (2) an entity, 50% or more of the total value or voting power of which is owned, directly or indirectly, by the Company, (3) a Person, that owns, directly or indirectly, 50% or more of the total value or voting power of all the outstanding stock of the Company, or (4) an entity, at least 50% of the total value or voting power of which is owned, directly or indirectly, by a Person described in this subsection (iii)(B)(3). For purposes of this subsection (iii), gross fair market value means the value of the assets of the Company, or the value of the assets being disposed of, determined without regard to any liabilities associated with such assets.

For purposes of this definition of Change in Control, persons will be considered to be acting as a group if they are owners of a corporation that enters into a merger, consolidation, purchase or acquisition of stock, or similar business transaction with the Company.

Notwithstanding the foregoing, a transaction will not be deemed a Change in Control unless the transaction qualifies as a change in control event within the meaning of Code Section 409A, as it has been and may be amended from time to time, and any proposed or final Treasury Regulations and Internal Revenue Service guidance that has been promulgated or may be promulgated thereunder from time to time.

Further and for the avoidance of doubt, a transaction will not constitute a Change in Control if: (i) its sole purpose is to change the state of the Company's incorporation, or (ii) its sole purpose is to create a holding company that will be owned in substantially the same proportions by the persons who held the Company's securities immediately before such transaction.

(c) Disability. "*Disability*" means Executive is unable to engage in any substantial gainful activity by reason of any medically determinable physical or mental impairment that can be expected to result in death or can be expected to last for a continuous period of not less than twelve (12) months.

(d) Good Reason. "*Good Reason*" means Executive's termination of employment within thirty (30) days following the expiration of any cure period (discussed below) following the occurrence of one or more of the following, without Executive's express written consent: (i) a material reduction of Executive's duties, authority, or responsibilities, relative to Employee's duties, authority, or responsibilities as in effect immediately prior to such reduction; *provided, however,* that a reduction in duties, authority, or responsibilities solely by virtue of the Company being acquired and made part of a larger entity (for example, where Executive retains essentially the same responsibility and duties of the subsidiary, business unit or division substantially containing the Company's business following a Change in Control) shall not constitute "Good Reason"; (ii) a material reduction by the Company in Executive's annualized base pay as in effect immediately prior to such reduction (in other words, a reduction of more than ten percent (10%) of Executive's annualized base compensation in any one year, other than a reduction applicable to executives generally that does not adversely affect Executive to a greater extent than other similarly situated executives); (iii) the relocation of Executive's principal place of performing his or her duties as an employee of the Company by more than fifty (50) miles; or (iv) the failure of the Company to obtain the assumption of this Agreement by a successor. In order for an event to qualify as Good Reason, Executive must not terminate employment with the Company without first providing the Company with written notice of the acts or omissions constituting the grounds for "Good Reason" within ninety (90) days of the initial existence of the grounds for "Good Reason" and a reasonable cure period of not less than thirty (30) days following the date of such notice.

(e) Section 409A Limit. "*Section 409A Limit*" means the lesser of two (2) times: (i) Executive's annualized compensation based upon the annual rate of pay paid to Executive during the Executive's taxable year preceding the Executive's taxable year of Executive's termination of employment as determined under, and with such adjustments as are set forth in, Treasury Regulation 1.409A-1(b)(9)(iii)(A)(1) and any Internal Revenue Service guidance issued with respect thereto; or (ii) the maximum amount that may be taken into account under a qualified plan pursuant to Section 401(a)(17) of the Code for the year in which Executive's employment is terminated.

8. Successors.

(a) The Company's Successors. Any successor to the Company (whether direct or indirect and whether by purchase, merger, consolidation, liquidation or otherwise) to all or substantially all of the Company's business and/or assets will assume the obligations under this Agreement and agree expressly to perform the obligations under this Agreement in the same manner and to the same extent as the Company would be required to perform such obligations in the absence of a succession. For all purposes under this Agreement, the term "Company" will include any successor to the Company's business and/or assets which executes and delivers the assumption agreement described in this Section 8(a) or which becomes bound by the terms of this Agreement by operation of law.

(b) Executive's Successors. The terms of this Agreement and all rights of Executive hereunder will inure to the benefit of, and be enforceable by, Executive's personal or legal representatives, executors, administrators, successors, heirs, distributees, devisees and legatees.

9. Notice.

(a) General. Notices and all other communications contemplated by this Agreement will be in writing and will be deemed to have been duly given when personally delivered or when mailed by U.S. registered or certified mail, return receipt requested and postage prepaid. In the case of Executive, mailed notices will be addressed to him or her at the home address which he or she most recently communicated to the Company in writing. In the case of the Company, mailed notices will be addressed to its corporate headquarters, and all notices will be directed to the General Counsel of the Company.

(b) Notice of Termination. Any termination by the Company for Cause or by Executive for Good Reason or as a result of a voluntary resignation will be communicated by a notice of termination to the other party hereto given in accordance with Section 9(a) of this Agreement. Such notice will indicate the specific termination provision in this Agreement relied upon, will set forth in reasonable detail the facts and circumstances claimed to provide a basis for termination under the provision so indicated, and will specify the termination date (which will be not more than thirty (30) days after the giving of such notice). The failure by Executive to include in the notice any fact or circumstance which contributes to a showing of Good Reason will not waive any right of Executive hereunder or preclude Executive from asserting such fact or circumstance in enforcing Executive's rights hereunder.

10. Miscellaneous Provisions.

(a) No Duty to Mitigate. Executive will not be required to mitigate the amount of any payment contemplated by this Agreement, nor will any such payment be reduced by any earnings that Executive may receive from any other source.

(b) Waiver. No provision of this Agreement will be modified, waived or discharged unless the modification, waiver or discharge is agreed to in writing and signed by

Executive and by an authorized officer of the Company (other than Executive). No waiver by either party of any breach of, or of compliance with, any condition or provision of this Agreement by the other party will be considered a waiver of any other condition or provision or of the same condition or provision at another time.

(c) Headings. All captions and section headings used in this Agreement are for convenient reference only and do not form a part of this Agreement.

(d) Entire Agreement. This Agreement constitutes the entire agreement of the parties hereto and supersedes in their entirety all prior representations, understandings, undertakings or agreements (whether oral or written and whether expressed or implied) of the parties, including but not limited to the offer letter entered into between Executive and the Company (and for the avoidance of doubt, including but not limited to any terms under such offer letter providing for severance payments or benefits upon certain terminations), with respect to the subject matter hereof. No waiver, alteration, or modification of any of the provisions of this Agreement will be binding unless in writing and signed by duly authorized representatives of the parties hereto and which specifically mention this Agreement.

(e) Choice of Law. The validity, interpretation, construction, and performance of this Agreement will be governed by the laws of the State of California (with the exception of its conflict of laws provisions). Any claims or legal actions by one party against the other arising out of the relationship between the parties contemplated herein (whether or not arising under this Agreement) will be commenced or maintained in any state or federal court located in San Mateo County, California, and Executive and the Company hereby submit to the jurisdiction and venue of any such court.

(f) Severability. The invalidity or unenforceability of any provision or provisions of this Agreement will not affect the validity or enforceability of any other provision hereof, which will remain in full force and effect.

(g) Withholding. All payments made pursuant to this Agreement will be subject to withholding of applicable income and employment taxes.

(h) Counterparts. This Agreement may be executed in counterparts, each of which will be deemed an original, but all of which together will constitute one and the same instrument.

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IN WITNESS WHEREOF, each of the parties has executed this Agreement, in the case of the Company by its duly authorized officer, as of the day and year set forth below.

COMPANY	PACIFIC BIOSCIENCES OF CALIFORNIA, INC.
	By: /s/ Hugh Martin Hugh Martin
	Title: Chief Executive Officer
EXECUTIVE	By: /s/ Michael J. Glynn Michael J. Glynn
	Title: Executive Vice President and Chief Commercial Officer

Exhibit 23.1

Consent of Ernst & Young LLP, Independent Registered Public Accounting Firm

We consent to the incorporation by reference in the Registration Statement on Form S-8 (No. 333-170211) of our reports dated February 29, 2012, with respect to the consolidated financial statements of Pacific Biosciences of California, Inc. and the effectiveness of internal control over financial reporting of Pacific Biosciences of California, Inc., included in this Annual Report (Form 10-K) for the year ended December 31, 2011.

/s/ Ernst & Young LLP
Redwood City, California
February 29, 2012

Exhibit 23.2

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We hereby consent to the incorporation by reference in the Registration Statement on Form S-8 (No. 333-170211) of Pacific Biosciences of California, Inc. of our report dated March 23, 2011 relating to the consolidated financial statements, which appears in this Form 10-K.

/s/ PricewaterhouseCoopers LLP
San Jose, California
February 29, 2012

Exhibit 31.1

CERTIFICATION OF CHIEF EXECUTIVE OFFICER PURSUANT TO SECURITIES EXCHANGE ACT RULES 13a-15(e), AS ADOPTED PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

I, Michael Hunkapiller, certify that:

1. I have reviewed this annual report on Form 10-K of Pacific Biosciences of California, Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) for the registrant and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) and have:

a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, 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;

c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

By: /s/ Michael Hunkapiller
Michael Hunkapiller
Executive Chairman, Chief Executive Officer and President (Principal Executive Officer)

Dated: February 29, 2012

Exhibit 31.2

CERTIFICATION OF CHIEF FINANCIAL OFFICER PURSUANT TO SECURITIES EXCHANGE ACT RULES 13a-15(e), AS ADOPTED PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

I, Susan Barnes, certify that:

1. I have reviewed this annual report on Form 10-K of Pacific Biosciences of California, Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant’s other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) for the registrant and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) and have:

a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, 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;

c) Evaluated the effectiveness of the registrant’s disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

d) Disclosed in this report any change in the registrant’s internal control over financial reporting that occurred during the registrant’s most recent fiscal quarter (the registrant’s fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant’s internal control over financial reporting; and

5. The registrant’s other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant’s auditors and the audit committee of the registrant’s board of directors (or persons performing the equivalent functions):

a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant’s ability to record, process, summarize and report financial information; and

b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant’s internal control over financial reporting.

By: /s/ Susan K. Barnes

Susan K. Barnes
Executive Vice President and Chief Financial Officer
(Principal Financial Officer)

Dated: February 29, 2012

Exhibit 32.1

**Certification of CEO Furnished Pursuant to 18 U.S.C. Section 1350,
As Adopted Pursuant To
Section 906 of The Sarbanes-Oxley Act of 2002**

In connection with the Annual Report of Pacific Biosciences of California, Inc. (the "Company") on Form 10-K for the period ended December 31, 2011, as filed with the Securities and Exchange Commission on the date hereof, I, Michael Hunkapiller, Chief Executive Officer of the Company, certify for the purposes of section 1350 of chapter 63 of title 18 of the United States Code, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that, to the best of my knowledge,

(i) the Annual Report of the Company on Form 10-K for the period ended December 31, 2011 (the "Report"), fully complies with the requirements of section 13(a) or 15(d) of the Securities Exchange Act of 1934, and

(ii) the information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date: February 29, 2012

/s/ Michael Hunkapiller

Michael Hunkapiller
Executive Chairman, Chief Executive Officer and President
(Principal Executive Officer)

Exhibit 32.2

**Certification of CFO Furnished Pursuant to 18 U.S.C. Section 1350,
As Adopted Pursuant To
Section 906 of The Sarbanes-Oxley Act of 2002**

In connection with the Annual Report of Pacific Biosciences of California, Inc. (the "Company") on Form 10-K for the period ended December 31, 2011, as filed with the Securities and Exchange Commission on the date hereof, I, Susan Barnes, Chief Financial Officer of the Company, certify for the purposes of section 1350 of chapter 63 of title 18 of the United States Code, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that, to the best of my knowledge,

(i) the Annual Report of the Company on Form 10-K for the period ended December 31, 2011 (the "Report"), fully complies with the requirements of section 13(a) or 15(d) of the Securities Exchange Act of 1934, and

(ii) the information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date: February 29, 2012

/s/ Susan K. Barnes

Susan K. Barnes
Executive Vice President and Chief Financial Officer
(Principal Financial Officer)