Table of Contents

As filed with the Securities and Exchange Commission on September 17, 2010

Registration No. 333-168858

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

AMENDMENT NO. 1 TO
FORM S-1

REGISTRATION STATEMENT UNDER THE SECURITIES ACT OF 1933

Pacific Biosciences of California, Inc.

(Exact name of Registrant as specified in its charter)

Delaware	**3826**	**16-1590339**
(State or other jurisdiction of incorporation or organization)	*(Primary Standard Industrial Classification Code Number)*	*(I.R.S. Employer Identification Number)*

1380 Willow Road
Menlo Park, CA 94025
(650) 521-8000

(Address, including zip code, and telephone number, including area code, of Registrant's principal executive offices)

Hugh C. Martin
Chief Executive Officer
1380 Willow Road
Menlo Park, CA 94025
(650) 521-8000

(Name, address, including zip code, and telephone number, including area code, of agent for service)

Copies to:

Larry W. Sonsini **Donna M. Petkanics** **Wilson Sonsini Goodrich & Rosati, P.C.** **650 Page Mill Road** **Palo Alto, California 94304** **(650) 493-9300**	**Matthew B. Murphy** **Vice President and General Counsel** **1380 Willow Road** **Menlo Park, CA 94025** **(650) 521-8000**	**Alan F. Denenberg** **Davis Polk & Wardwell LLP** **1600 El Camino Real** **Menlo Park, CA 94025** **(650) 752-2000**

Approximate date of commencement of proposed sale to the public: As soon as practicable after this registration statement becomes effective.

If any of the securities being registered on this Form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act of 1933 check the following box: ☐

If this Form is filed to register additional securities for an offering pursuant to Rule 462(b) under the Securities Act, please check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. ☐ _____

If this Form is a post effective amendment filed pursuant to Rule 462(c) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. ☐ _____

If this Form is a post effective amendment filed pursuant to Rule 462(d) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. ☐ _____

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 ☐

The registrant hereby amends this registration statement on such date or dates as may be necessary to delay its effective date until the registrant shall file a further amendment which specifically states that this registration statement shall thereafter become effective in accordance with Section 8(a) of the Securities Act of 1933 or until the registration statement shall become effective on such date as the Securities and Exchange Commission, acting pursuant to said Section 8(a), may determine.

Table of Contents

The information in this prospectus is not complete and may be changed. We may not sell these securities until the registration statement filed with the Securities and Exchange Commission is effective. This prospectus is not an offer to sell these securities and we are not soliciting offers to buy these securities in any jurisdiction where the offer or sale is not permitted.

Prospectus (Subject to Completion)

Issued September 17, 2010

Shares

Common Stock

This is the initial public offering of common stock of Pacific Biosciences of California, Inc. Prior to this offering, there has been no public market for our common stock. The initial public offering price of our common stock is expected to be between $ and $ per share.

We expect to apply for listing of our common stock on the NASDAQ Global Market under the symbol "PACB".

	Per share	*Total*
Initial public offering price	**$**	**$**
Underwriting discounts and commissions	**$**	**$**
Proceeds to Pacific Biosciences, before expenses	**$**	**$**

We have granted the underwriters an option to purchase up to additional shares of common stock to cover over-allotments.

Investing in our common stock involves risks. See "Risk Factors" beginning on page 10.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or determined if this prospectus is truthful or complete. Any representation to the contrary is a criminal offense.

The underwriters expect to deliver the shares on or about , 2010.

J.P.Morgan **Morgan Stanley**

Deutsche Bank Securities **Piper Jaffray**

, 2010

Table of Contents

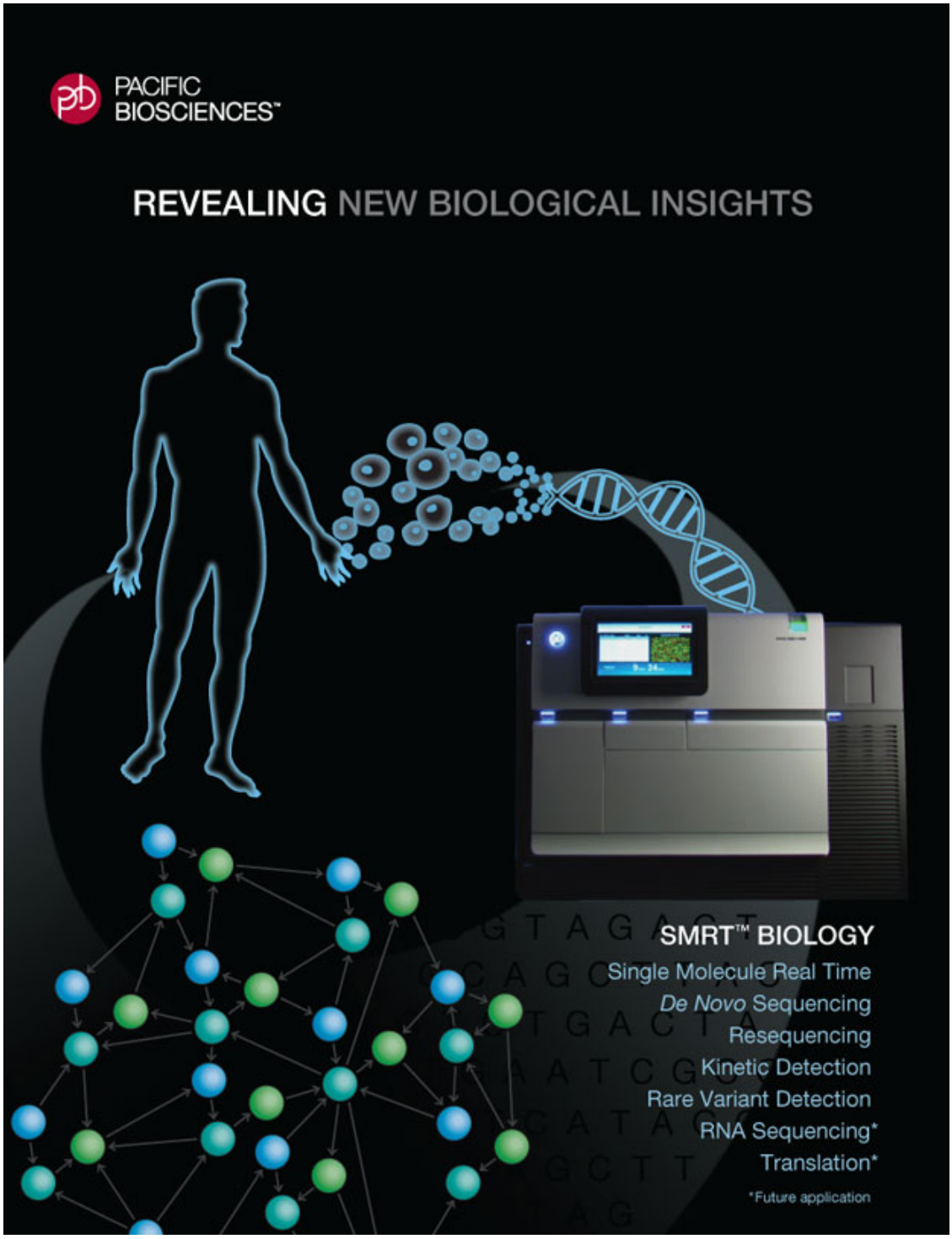


Table of Contents

Table of Contents

TABLE OF CONTENTS

We have not authorized anyone to provide any information other than that contained or incorporated by reference in this prospectus or in any free writing prospectus prepared by or on behalf of us or to which we have referred you. We take no responsibility for, and can provide no assurance as to the reliability of, any information that others may give you. This prospectus is an offer to sell only the shares offered hereby but only under circumstances and in jurisdictions where it is lawful to do so. The information contained in this prospectus is current only as of its date.

Through and including , 2010 (the 25th day after the date of this prospectus), all dealers effecting transactions in these securities, whether or not participating in this offering, may be required to deliver a prospectus. This is in addition to a dealer's obligation to deliver a prospectus when acting as an underwriter and with respect to an unsold allotment or subscription.

For investors outside the United States, neither we nor any of the underwriters have done anything that would permit this offering or possession or distribution of this prospectus in any jurisdiction where action for that purpose is required, other than the United States. If you are an investor outside the United States, you are required to inform yourselves about and to observe any restrictions relating to this offering and the distribution of this prospectus.

PROSPECTUS SUMMARY

This summary highlights selected information appearing elsewhere in this prospectus and does not contain all the information you should consider before investing in our common stock. You should carefully read this prospectus in its entirety before investing in our common stock, including the section entitled "Risk Factors," and our financial statements and related notes included elsewhere in this prospectus.

Overview

We develop, manufacture and market an integrated platform for genetic analysis. We have developed an approach to study the synthesis and regulation of deoxyribonucleic acid, or DNA. 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 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 research community with a new tool for investigating basic biochemical processes such as DNA synthesis. We believe our SMRT technology has the potential to advance scientific understanding by providing a window into biological processes that has not previously been open.

Our initial focus is on the DNA sequencing market where we have developed and introduced a third generation sequencing platform, the PacBio *RS*. We believe that the PacBio *RS*, which uses our proprietary SMRT technology, maintains many of the key attributes of currently available sequencing technologies while solving many of the inherent limitations of previous technologies. Our system provides long readlengths, flexibility in experimental design, fast time to result and is designed to be easy to use. The PacBio *RS* consists of an instrument platform and the proprietary products necessary to run the platform, which we call consumables. Our proprietary consumables are currently comprised of our SMRT Cells and three chemical reagent kits. The system is designed to be integrated into existing laboratory workflows and information systems. Customers that have placed orders for our products include research institutions and commercial companies that plan to use the PacBio *RS* for clinical, basic and agricultural research, drug discovery and development, biosecurity and bio-fuels. Our customers are also interested in a number of other potential applications, including molecular diagnostics, food safety and forensics, which may require us to enhance the capabilities of our current products or develop additional products. To date, we have neither commercially launched nor generated any revenue from our products.

We believe that our SMRT technology has the potential to impact scientific study beyond DNA sequencing. We, and our scientific collaborators, have published a number of peer-reviewed articles in journals including *Science*, *Nature* and *Nature Methods* highlighting the power and potential applications of the SMRT platform. Potential applications that have been demonstrated include the study of chemical and structural modifications of DNA and the processing of ribonucleic acid, or RNA, and proteins, although these applications will not be available at commercial launch of the PacBio *RS*. We plan to provide these additional capabilities through enhancements to software and consumables without modifications to the PacBio *RS* hardware.

Evolution of Sequencing

Recent advances in the 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. The International Human Genome Project, designed to map the human genome, took 13 years at a cost of over $3 billion and resulted in only approximately 92% coverage of the genome at its conclusion in 2004. The project generated many important insights regarding human biology, including a reduction in the number of estimated genes in the human genome from 100,000 or more to approximately 23,000. Despite these advances, researchers have not been able to fully characterize the human genome due to inherent limitations in existing technologies.

First generation DNA sequencing, also called “Sanger sequencing,” was introduced in 1977 and has gradually grown into a $600 million market. Under standard conditions, this method results in average readlength, defined as the number of individual bases identified contiguously, of approximately 700 bases, 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. The limited throughput of first generation sequencing technologies constrains the ability of researchers to sequence the large amounts of genetic material needed to unravel the complexities of many biological processes.

Second generation sequencing emerged in 2005 to address the issue of limited throughput. Since introduction, the market for these sequencing tools has grown rapidly and is currently estimated to be $600 million. Second generation technologies rely on polymerase chain reaction, or PCR, amplification to generate numerous copies of a DNA sample to provide sufficient signal for detection. This amplification process can introduce errors in the DNA sequence known as amplification bias. In addition to introducing errors in the sequence, the process of amplification increases the complexity and time associated with sample preparation. Second generation tools are also characterized by a “flush and scan” sequencing process that, for many commercial second generation systems, results in long run times and decreased readlengths. The “flush and scan” sequencing process involves sequentially flushing in reagents, such as labeled nucleotides, incorporating the labeled nucleotides into the DNA strands, stopping the incorporation reaction, washing out the excess reagent, scanning to identify the incorporated base by virtue of the incorporated label and finally treating that base so that the strand is ready for the next “flush and scan” cycle. This repetitive process limits the average readlength produced by most second generation systems under standard sequencing conditions to approximately 35 to 400 bases. Long run times limit the flexibility of researchers to conduct experiments and short readlengths complicate the reassembly of sequences and the identification of disease-related variations in the genetic sequence.

Our Solution

We have developed a technology platform that enables single molecule, real-time, or SMRT, detection of biological processes. Based on our proprietary 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 and may also enable other types of biological research. The DNA sequencing market is expected to grow from $1.2 billion in 2009 to more than $3.6 billion by 2014 according to Scientia Advisors, a life sciences consulting firm. The growth in this market is expected to be driven by increases in the demand for sequencing products from both research institutions and commercial companies, including genome centers, government and academic institutions, genomic service providers, pharmaceutical companies and agriculture companies.

Three key innovations underlie our SMRT technology platform:

- *The SMRT Cell.* Our DNA sequencing is performed on proprietary SMRT Cells, each having an array of approximately 75,000 zero mode waveguides, or ZMWs. Each ZMW is a hole, tens of nanometers in diameter, which allows for limited penetration of focused laser light, creating a 30 nanometer observation window. Within this window, a DNA polymerase is immobilized on the surface of the ZMW and exposed to phospholinked nucleotides, allowing us to view labeled nucleotides being added into a growing DNA strand within the ZMW through the visualization of a fluorescent signal, or tag, associated with the nucleotide that is being added. The current 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 SMRT technology requires the use of our proprietary phospholinked nucleotides. These nucleotides have a fluorescent dye attached to the phosphate chain of the nucleotide rather than to the base, as is the case with other technologies. During the synthesis process, the phosphate chain is cleaved when the nucleotide is incorporated into the DNA strand. The DNA polymerase naturally frees the dye molecule from the nucleotide when it cleaves the phosphate chain

leaving a completely natural piece of DNA with no evidence of labeling remaining. This removes the need for a "flush and scan" method as used in second generation sequencing, enabling long readlengths.

- *The PacBio RS.* The PacBio *RS* is an instrument that conducts, monitors and analyzes single molecule biochemical reactions in real time. The instrument includes high performance optics, automated liquid handling, a touchscreen control interface, a computational Blade Center and software. The PacBio *RS* uses a high numerical aperture objective lens and four single-photon sensitive cameras to collect light emitted by fluorescent reagents allowing the observation of biological processes, such as the incorporation of labeled nucleotides during DNA synthesis. These observations are recorded as the biochemical events occur. An optimized set of algorithms is then used to translate this data into biologically relevant information, such as the composition of DNA strands known as base calls.

Our sequencing system includes the PacBio *RS* instrument and proprietary consumables, including SMRT Cells and reagent kits, providing a complete solution to the customer. A comprehensive informatics tools suite enabling users to generate finished sequence data is also included. The workflow begins with customers isolating their DNA samples of interest, which can come from a variety of sources, including humans, plants or animals, based on the nature of their scientific study. They then use our reagent kits to convert their DNA sample into a format that is compatible with our system. After loading their sample into the PacBio *RS*, they start the instrument run and real-time sequencing is performed. Our software is used for experimental design, instrument operation and interpretation of results.

We have instituted a limited production release program pursuant to which we have received orders for eleven limited production release instruments. Our limited production release customers include genome centers, clinical, government and academic institutions and an agricultural company. As of September 15, 2010, we have shipped a total of seven PacBio *RS* limited production release instruments, and we intend to ship the remaining four this year. Generally, each of these customers is obligated to pay us a deposit after accepting a limited production release instrument, and is entitled to receive an upgrade to a commercial release version of the PacBio *RS*, at which time each customer will be obligated to pay the balance of their order and we will then recognize revenue.

As of June 30, 2010, our backlog was approximately $15 million, which includes both orders for limited production release instruments and full commercial release instruments received as of that date. We expect to deliver all orders in our backlog by December 31, 2011, however we do not expect to recognize revenue on any orders prior to December 31, 2010. The commercial launch of our first products is scheduled for early 2011. We cannot provide assurance that we will recognize revenue from these customers.

All of our revenue to date has been generated from government grants.

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 the sequencing reaction does not involve a time-consuming "flush and scan" process. In addition, our system does not require the routine PCR amplification needed by most second generation sequencing systems, thereby avoiding systematic amplification bias.
- *Longer readlengths.* Our SMRT technology enables longer readlengths than most other commercially available sequencing methods largely due to the reagents and detection methods that we employ. Our technology uses a genetically modified DNA polymerase that maintains the natural processing activity of the polymerase while operating at a slower speed, enabling accurate detection of labeled nucleotides

as they are added to a growing DNA strand. In nature, molecular events are intrinsically random, leaving uncertainty in the possible readlength of a particular sequencing reaction. Since our approach uses the natural processing activity of the polymerase, it produces a distribution of readlengths. We have demonstrated readlengths greater than 1,000 base pairs on average with instances of over 10,000 base pairs. We believe that the long readlengths produced by our SMRT technology will allow insights into biology that are not possible with existing technologies.

- *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. This speed enables the research community to ask and answer questions much faster than with existing technologies which often 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.
- *Ease of use.* We believe our system is 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. It can be used with a variety of sample types and can output a range of DNA lengths. The PacBio *RS* is equipped with a touchscreen interface and requires minimal user intervention.
- *Flexibility and granularity.* The PacBio *RS* system enables the user to optimize performance based on the needs for a particular project. The system also has the ability to scale the throughput and cost of sequencing across a range of small and large projects. We call this granularity, and it results from our flexible consumables format. The ability to run a single SMRT Cell, or batch multiple SMRT Cells in a single run, provides flexibility in experiment design and implementation.
- *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 presence or absence of a methyl group can determine whether or not a gene is expressed in a particular cell, tissue or organism. The impact of such chemical modification of DNA on the expression of genes has been hypothesized to play a role in many diseases, including cancer. Importantly, it has been shown that changes in kinetics which can be detected automatically by the PacBio *RS*, may reflect the presence of DNA methylation.

Our Strategy

We plan to execute the following strategy:

- *Define the future of biological analysis based on SMRT technology.* Our SMRT technology provides a window into biological processes that has not previously been available. We have and will continue to communicate the benefits and advantages of our SMRT technology platform through our commercial and marketing activities. In addition, we will continue to pursue publication of biological insights using our SMRT technology in top-tier scientific, peer-reviewed journals. We plan to continue to develop the applications of our SMRT technology in the field of DNA and to develop new applications in the fields of RNA and protein biology.
- *Focus initially on the DNA sequencing market.* We will initially sell our products into the rapidly growing DNA sequencing market, addressing many of the limitations in current sequencing technologies and enabling a wide range of experiments and applications. We believe that the introduction of the PacBio *RS* will expand the market for genetic analysis tools. Customers that have placed orders for our products include research institutions and commercial companies that plan to use the PacBio *RS* for clinical, basic and agricultural research, drug discovery and development,

biosecurity and bio-fuels. Our customers are also interested in a number of other potential applications, including molecular diagnostics, food safety and forensics, which may require us to enhance the capabilities of our current products or develop additional products.

- *Continually enhance product performance to increase market share.* The design of the PacBio *RS* will allow for significant performance improvements without an upgrade or replacement of the instrument hardware. These performance enhancements will be delivered through software upgrades and new consumables. 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.
- *Leverage platform to develop and launch additional applications.* We plan to leverage our SMRT technology platform to develop new applications targeting kinetic detection, RNA transcription monitoring, RNA sequencing, protein translation and ligand binding, which is the biochemical interaction of a molecule with a second molecule or set of molecules. We believe these applications will 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 software developer's open network to support academic informatics developers, life scientists and independent software vendors interested in creating tools to work with our third generation sequencing data.

Risks Affecting Us

Our business is subject to a number of risks and uncertainties that you should understand before making an investment decision. These risks may have a material adverse effect on our business or operating results. These risks are discussed more fully in the section entitled "Risk Factors" following this prospectus summary. These include:

- we are a development stage company with limited operating history and we have not recognized revenue from the sale of any products to date, including sales of our PacBio *RS*;
- we have a cumulative loss from operations of $246 million as of June 30, 2010, and we expect to continue to incur significant losses as we develop our business and may never achieve profitability;
- we cannot be sure that the PacBio *RS* or any other products we expect to introduce will gain acceptance in the marketplace;
- the PacBio *RS* and related consumable products we expect to introduce are highly complex, with unknown support requirements;
- the PacBio *RS* may not meet the specifications required for full commercial release and we may not be able to produce other products with the specifications required by our customers;
- a significant portion of our potential sales depends on customers' capital spending budgets that may be subject to significant and unexpected variation;
- we may never earn revenue from our orders in backlog;
- we have limited experience in selling and marketing our products and, as a result, may be unable to successfully commercialize our SMRT technology;
- rapidly changing technology in life sciences could make the products we are developing obsolete and we may not be able to develop and manufacture new and improved products;

- we have limited experience in manufacturing our products, and we may be unable to establish manufacturing capacity for the PacBio *RS* or our consumable products in a timely manner or manufacture these products at a reasonable cost;
- we may be unable to successfully scale the manufacturing process necessary to build and test multiple products on a full commercial basis; and
- we may be unable to secure or maintain protection for our intellectual property and we are subject to litigation claiming that we infringe the intellectual property rights of others.

Corporate History and Information

We 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. Our website address is www.pacificbiosciences.com. Information contained on our website is not incorporated by reference into this prospectus, and should not be considered to be part of this prospectus.

In this prospectus, “we,” “us” and “our” refer to Pacific Biosciences of California, Inc. and its subsidiaries.

The names “Pacific Biosciences,” “PacBio,” “SMRT,” “SMRTbell” and our logo are our trademarks. All other trademarks and trade names appearing in this prospectus are the property of their respective owners.

THE OFFERING

Common stock offered by us	Shares
Over-allotment option	Shares
Common stock to be outstanding after this offering	Shares
Use of proceeds	We intend to use the net proceeds from this offering to fund ongoing research and development of our products and SMRT technology, increases in our sales and marketing efforts associated with our planned commercial launch, increases in the scale of our manufacturing operations associated with producing our products and general corporate purposes, including working capital. We also may use a portion of the net proceeds to acquire complementary products, services, technologies or businesses. However, we have no understandings, agreements or commitments with respect to any such acquisition at this time. See "Use of Proceeds."
Proposed NASDAQ Global Market symbol	"PACB"

The number of shares of our common stock that will be outstanding following this offering is based on 75,227,061 shares of our common stock outstanding as of June 30, 2010 and excludes:

- 17,575,343 shares of common stock issuable upon the exercise of options outstanding as of June 30, 2010, with a weighted-average exercise price of $2.70 per share;
- 50,569 shares of common stock issuable upon the exercise of warrants to purchase 50,569 shares of convertible preferred stock at a weighted-average exercise price of $1.58 per share that upon the closing of this offering will represent warrants to purchase shares of common stock at a weighted-average exercise price of $1.58 per share; and
- 11,537,206 shares of our common stock reserved for future issuance under our stock-based compensation plans, including 5,000,000 shares of common stock reserved for issuance under our 2010 Equity Incentive Plan, 1,500,000 shares of our common stock reserved for issuance under our 2010 Employee Stock Purchase Plan, 1,000,000 shares of our common stock reserved for issuance under our 2010 Outside Director Equity Incentive Plan, and shares that become available under the 2010 Equity Incentive Plan, 2010 Employee Stock Purchase Plan and 2010 Outside Director Equity Incentive Plan pursuant to provisions thereof that automatically increase the shares reserved for issuance under such plans, as more fully described in "Executive Compensation — Employee Benefit Plans." The 2010 Equity Incentive Plan, 2010 Employee Stock Purchase Plan and 2010 Outside Direct Equity Incentive Plan will become effective in connection with this offering.

Unless otherwise noted, the information in this prospectus reflects and assumes the following:

- the conversion of all outstanding shares of our convertible preferred stock into an aggregate 73,305,523 of shares of common stock upon the closing of this offering;
- the conversion of all outstanding warrants to purchase shares of our convertible preferred stock into warrants to purchase 50,569 shares of common stock upon the closing of this offering;
- no exercise after June 30, 2010 of options or warrants outstanding;
- the effectiveness of our amended and restated certificate of incorporation upon the closing of this offering; and
- no exercise by the underwriters of their over-allotment option.

SUMMARY FINANCIAL DATA

The summary statement of operations data below for the years ended December 31, 2007, 2008 and 2009 has been derived from our audited financial statements included elsewhere in this prospectus. The summary statement of operations data for the six-month periods ended June 30, 2009 and 2010 and the balance sheet data as of June 30, 2010 have been derived from our unaudited interim financial statements included elsewhere in this prospectus. Our historical results are not necessarily indicative of the results that may be expected in the future. The following summary financial data should be read in conjunction with "Management's Discussion and Analysis of Financial Condition and Results of Operations" and our financial statements and related notes included elsewhere in this prospectus.

	Years ended December 31,			Six-month periods ended June 30,	
	2007	2008	2009	2009	2010
	(in thousands, except share and per share amounts)				
Statements of operations data:					
Revenue	$ 2,163	$ 901	$ 135	$ —	$ 1,174
Operating expenses					
Research and development	19,216	37,997	75,879	30,090	52,406
Sales, general and administrative	6,338	7,713	12,326	5,338	11,717
Total operating expenses	25,554	45,710	88,205	35,428	64,123
Loss from operations	(23,391)	(44,809)	(88,070)	(35,428)	(62,949)
Interest income (expense), net	1,940	1,157	451	327	(35)
Other income (expense), net	(67)	(102)	(84)	(10)	(55)
Net loss	$ (21,518)	$ (43,754)	$ (87,703)	$ (35,111)	$ (63,039)
Basic and diluted net loss per share[1]	$ (122.02)	$ (62.02)	$ (86.94)	$ (37.76)	$ (53.97)
Weighted-average shares outstanding used to calculate basic and diluted net loss per share[1]	176,342	705,451	1,008,781	929,856	1,168,063
Pro forma basic and diluted net loss per share (unaudited)[1]					
Pro forma weighted-average shares outstanding used to calculate basic and diluted net loss per share (unaudited)[1]					

(1) Please see the notes to our financial statements appearing elsewhere in this prospectus for an explanation of the method used to calculate basic and diluted net loss per common share, the pro forma basic and diluted net loss per common share and the number of shares used in the computation of the per share amounts.

The following table presents balance sheet data as of June 30, 2010 on an actual basis and on an as adjusted basis to reflect our sale of shares of common stock in this offering at an assumed initial public offering price of $ per share, the midpoint of the price range set forth on the front cover of this prospectus, after deducting estimated underwriting discounts and commissions and estimated offering expenses.

	As of June 30, 2010		
	Actual	Pro forma[1] (unaudited) (in thousands)	Pro forma as adjusted[2][3]
Balance sheet data:			
Cash, cash equivalents and investments	$ 138,756	$ 138,756	$
Working capital	123,896	123,896	
Total assets	152,897	152,897	
Convertible preferred stock warrant liability	282	—	
Convertible preferred stock	367,036	—	
Total stockholders' equity (deficit)	(235,650)	131,668	

(1) The pro forma balance sheet data in the table above reflects (i) the conversion of all outstanding shares of convertible preferred stock into common stock and (ii) the reclassification of the convertible preferred stock warrant liability to additional paid-in capital, each effective upon the closing of this offering.

(2) The pro forma as adjusted balance sheet data in the table above also reflects the pro forma conversions and reclassifications described immediately above plus the sale of shares of our common stock in this offering at an assumed initial public offering price of $ per share, the midpoint of the range set forth on the cover page of this prospectus, after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us.

(3) A $1.00 increase (decrease) in the assumed initial public offering price of $ per share, the midpoint of the range set forth on the cover page of this prospectus, would increase (decrease) cash, cash equivalents and investments, and working capital, total assets and total stockholders' equity (deficit) by $ million, assuming that the number of shares offered by us, as set forth on the cover page of this prospectus, remains the same, and after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us. Each increase of 1.0 million shares in the number of shares offered by us would increase cash, cash equivalents, investments, and working capital, total assets and total stockholders' equity (deficit) by approximately $ million. Similarly, each decrease of 1.0 million shares in the number of shares offered by us would decrease cash, cash equivalents and investments, and each of working capital, total assets and total stockholders' equity (deficit) by approximately $ million. The pro forma as adjusted information discussed above is only illustrative and will be adjusted based on the actual public offering price and other terms of this offering determined at pricing.

RISK FACTORS

Investing in our common stock involves a high degree of risk. You should consider carefully the risks and uncertainties described below, together with all of the other information in this prospectus, including our financial statements and related notes, before deciding whether to purchase shares of our common stock. If any of the following risks is realized, our business, financial condition, results of operations and prospects could be materially and adversely affected. In that event, the price of our common stock could decline, and you could lose part or all of your investment.

Risks Related to Our Business

We are a development stage company with limited operating history.

We may never achieve commercial success and have not yet commercially launched our first product. We have no historical financial data upon which we may base our projected revenue. We have limited historical financial data upon which we may base our planned operating expense or upon which you may evaluate us and our 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. You should consider the risks and difficulties frequently encountered by companies like ours in new and rapidly evolving markets when making a decision to invest in our common stock.

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 have generated no revenue from product sales to date. We expect to incur increasing costs as we grow our business. 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. As of June 30, 2010, we had an accumulated deficit of $255.0 million. 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.

Since we have not yet commercialized our products, we cannot be sure that they will gain acceptance in the marketplace. Our success depends, in part, on our ability to develop products that displace or supplement current technology, as well as to expand the market for genetic analysis to include new applications that are not practical with current technologies. To accomplish this, we must develop and successfully commercialize our SMRT technology for use in a variety of life science applications. There can be no assurance that we will be successful in securing 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 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 fails to develop or 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.

The products we expect to introduce are highly complex, with unknown 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 complete the development or manufacture of, or to provide adequate support for, our products. If our products have reliability or other quality issues or require unexpected levels of support, our reputation and business could be harmed. We cannot estimate with any certainty the cost of service and support. We intend to ship our Pac Bio *RS* instruments with one year of service included in the purchase price with an option to purchase an additional year of service. If service and support costs are more than we anticipate, our business and operations may be adversely affected.

We may not be able to produce instruments with the specifications required by our customers.

We have developed performance standards for our commercial products that may not be achieved using our current design and manufacturing processes. If the actual performance of the commercial instrument deviates substantially from our target specifications or is below the performance mandated by our customers, 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 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, including SMRT Kinetic Detection, SMRT Transcription, SMRT RNA Sequencing, SMRT Translation and SMRT Ligand Binding, which applications are more fully described under the subheading “Future Commercial Applications” on page 64. These 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.

We may be unable to 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 commercialize our products, we will 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. 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 never earn revenue from our orders in backlog.

As of June 30, 2010 we had orders in backlog totaling approximately $15.0 million. This figure represents product orders from our customers that we have confirmed and for which we have not yet recognized revenue. We may never ship products represented by this backlog or 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 not to be completed or delayed, 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 will suffer and we may have write-offs associated with excess or obsolete inventory.

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 the products we are developing, 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 that develop as a result of technological and scientific advances. These new market opportunities may be outside the scope of our proven expertise or in areas which have unproven market demand, and the utility and value of new products and services developed by us may not be accepted in the markets served by the new products. 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 these 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 we introduce 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.

A significant portion of our potential sales depends on customers' capital spending budgets that may be subject to significant and unexpected variation.

A substantial portion of our potential product sales represent significant capital purchases by customers. Our potential customers include academic and government institutions, medical research institutions, pharmaceutical, biotechnology and chemical companies, and 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, 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.

We have limited experience in sales and marketing of our products and, as a result, may be unable to successfully commercialize our products.

We have limited experience in sales and marketing of our products. Our ability to achieve profitability depends on our being able to attract customers for our products. Although members of our sales and marketing team have considerable industry experience and have engaged in marketing activities for our products, in the future we must expand our sales, marketing, distribution and customer support capabilities with the appropriate technical expertise 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 force necessary to commercialize and gain market acceptance for our technology;
- the time and cost of establishing 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 commercialization activities.

We may seek to enlist one or more third parties to assist with sales, distribution and customer support globally or in certain regions of the world. There is no guarantee, if we do seek to 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 establish manufacturing capacity by ourselves or with partners in a timely manner, commercialization of our products would be delayed, which would result in lost revenue and harm our business.

In order to commercialize our products in volume, we need to either build additional internal manufacturing capacity or contract with one or more 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 unexpected difficulties in manufacturing our products. There is no assurance that we will be able to continue to build manufacturing capacity internally or find one or more suitable manufacturing partners, or both, to meet the volume and quality requirements necessary to be successful in the market. Manufacturing and product quality issues may arise as we increase 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 establishing or expanding our manufacturing capacity could diminish our ability to develop or 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 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. 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. In order to sustain our commercial launch, which will involve multiple shipments 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 employee 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. Furthermore, if the third-party carriers damage or destroy our instrument, it could take significant time to repair or replace the instrument. 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 our growth, and these difficulties could impair our profitability.

We expect to experience rapid and substantial growth, which will place a strain on our human and capital resources. If we are unable to manage this 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, including an expansion of our executive management team. 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 commercialize our technology successfully. Failure to attract and retain sufficient numbers of talented employees will further strain our human resources and could impede our growth.

Hugh Martin, our Chief Executive Officer, has been diagnosed with a form of cancer, and the impact of this condition on his ability to lead the company in the future may be uncertain.

Mr. Martin has informed us that he has been diagnosed with multiple myeloma, a form of cancer. Although his condition has not had any impact on Mr. Martin’s performance in his role as Chief Executive Officer or on the overall management of the company, we can provide no assurance that his condition will not affect his ability
to perform the role of Chief Executive Officer in the future. If Mr. Martin becomes unable to continue to perform

his role as Chief Executive Officer, we would need to select a new Chief Executive Officer which we may not be able to do easily, and may require other senior management to divert part of their attention from their primary duties, which could have a material adverse effect on our business or operations.

We depend on the continuing efforts of our senior management team and other key personnel. If we lose members of our senior management team or other key personnel or are unable to successfully retain, recruit and train qualified scientists, 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. Many of 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 has been experiencing a significant economic downturn, and global credit and capital markets have experienced substantial 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 your investments. 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 is likely to 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.

We expect that our sales cycle will be lengthy and unpredictable, which will make it difficult for us to forecast revenue and may increase the magnitude of quarterly fluctuations in our operating results.

Our PacBio *RS* is expected to have 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. These fluctuations also mean that investors will 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 assure you that a material performance problem will not arise. Despite testing, defects or errors may arise in our products, which could result in a failure to achieve market acceptance or expansion, diversion of development resources, injury to our reputation and increased warranty, service and maintenance costs. We intend to ship our PacBio *RS* instruments with one year of service included in the purchase price with an option to purchase an additional year of service. We will provide a twelve-month warranty on the PacBio *RS*. The warranty is limited to replacing, repairing or giving credit for, at our option, any instrument for which written notice of a warranty claim is provided to us within the warranty period. We will also provide a warranty for our consumables, but claims must be made within 90 days from the date of delivery or 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, 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.

Adoption of our products by customers may depend on the availability of informatics tools, some of which may be developed by third parties.

Our commercial success may depend in part upon the development of 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 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 used for 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 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.

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 controls, our ability to produce accurate financial statements on a timely basis could be impaired, which would adversely affect our business and our stock price.

Ensuring that we have adequate internal financial and accounting controls and procedures in place to produce accurate financial statements on a timely basis is a costly and time-consuming effort that needs to be re-evaluated frequently. We have in the past discovered, and may in the future discover, areas of our internal financial and accounting controls and procedures that need improvement. Until recently we have limited our accounting and internal control structure to meet the external financial reporting obligations required by the terms of the private equity purchased and held by our investors. The rapid growth of our operations and the planned initial public offering created a need for additional resources within the accounting and finance functions due to the increasing need to produce timely financial information and to ensure the level of segregation of duties customary for a U.S. public company. We have since hired additional resources in the accounting and finance function and continue to reassess the sufficiency of finance personnel in response to these increasing demands and expectations.

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.

We expect that we will be required to comply with Section 404 of the Sarbanes-Oxley Act in connection with our annual report on Form 10-K for the year ending December 31, 2011. We expect to expend significant resources in developing the necessary documentation and testing procedures required by Section 404. We cannot be certain that the actions we will be taking to improve our internal controls over financial reporting will be sufficient, or that we will be able to implement our planned processes and procedures in a timely manner. 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.

The requirements of being a public company may strain our resources, divert management's attention and affect our ability to attract and retain qualified board members.

As a public company, we will incur additional accounting, legal and other expenses that we did not incur as a private company. We will incur costs associated with our public company reporting requirements. We also anticipate that we will incur costs associated with corporate governance requirements, including requirements under the Sarbanes-Oxley Act of 2002, as well as rules and regulations implemented by the SEC and The NASDAQ Stock Market. We expect these rules and regulations to increase our legal and financial compliance costs and to make some activities more time-consuming and costly. Furthermore, these rules and regulations could make it more difficult or more costly for us to obtain certain types of insurance, including director and officer liability insurance, and we may be forced to accept reduced policy limits and coverage or incur substantially higher costs to obtain the same or similar coverage. The impact of these requirements could also

make it more difficult for us to attract and retain qualified persons to serve on our board of directors, our board committees or as executive officers. We are currently evaluating and monitoring developments with respect to these rules and regulations, and we cannot predict or estimate the amount of additional costs we may incur or the timing of such costs.

New laws and regulations as well as changes to existing laws and regulations affecting public companies, including the provisions of the Sarbanes-Oxley Act of 2002 and rules adopted by the SEC and the NASDAQ, would likely result in increased costs to us as we respond to their requirements.

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

As of December 31, 2009, our available net operating losses totaled $151.9 million. In general, under Section 382 of the Internal Revenue Code, a corporation that undergoes an "ownership change" is subject to limitations on its ability to utilize its pre-change net operating losses, or NOLs, to offset future taxable income. We believe that we have had one or more ownership changes, as a result of which our existing NOLs are currently subject to limitation. In addition, if we undergo an ownership change in connection with or after this public offering, our ability to utilize our NOLs could be further limited by Section 382. Future changes in our stock ownership, some of which are outside of our control, could result in additional ownership changes under Section 382. We are unable to predict the future ownership and other variables considered by, and elections available pursuant to, Section 382 for concluding on the usability of our net operating losses. Should an ownership change pursuant to Section 382 result from this offering, we do not believe it will result in a limitation of the usability of our net operating losses. We may not be able to utilize a material portion of our NOLs, even if we attain profitability.

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. As more fully described in "Business - Intellectual Property," 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, 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. For example, we are presently involved in a patent interference with Life Technologies Corporation, or Life, related to U.S. Patent No. 7,329,492, that was acquired by Life in its acquisition of Visigen Biotechnologies, Inc., and U.S. Patent Application Serial No. 11/459,182, owned by us, in which the parties are each claiming entitlement to patent claims directed to a type of single molecule, real-time sequencing technology. For more information on this proceeding, please see "Business — Legal Proceedings" below. 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 "Business—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 and This Offering

Our share price may be volatile, and you may be unable to sell your shares at or above the offering price.

The initial public offering price for our shares was determined by negotiations between us and representatives of the underwriters and may not be indicative of prices that will prevail in the trading market. The market price of our common stock could be 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 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;
- the expiration of contractual lock-up agreements with our executive officers, directors and stockholders; and
- general economic and market conditions.

Furthermore, the stock markets have experienced extreme 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. If the market price of our common stock after this offering does not exceed the initial public offering price, 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 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.

No public market for our common stock currently exists, and an active trading market may not develop or be sustained following this offering.

Prior to this offering, there has been no public market for our common stock. An active trading market may not develop following the closing of this offering or, if developed, may not be sustained. The lack of an active market may impair your ability to sell your shares at the time you wish to sell them or at a price that you consider reasonable. The lack of an active market may also reduce the fair market value of your shares. An inactive market may also impair our ability to raise capital to continue to fund operations by selling shares and may impair our ability to acquire other companies or technologies by using our shares as consideration. The initial public offering price was determined by negotiations between us and the underwriters and may not be indicative of the future prices of our common stock.

If securities or industry analysts do not publish research or reports about our business or publish negative reports about our business, our share price and trading volume could decline.

The trading market for our common stock will depend on the research and reports that securities or industry analysts publish about us or our business. Currently, we do not have any analyst coverage and we may not obtain analyst coverage in the future. In the event we obtain analyst coverage, we will not have any control over such analysts. 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 in the public market could cause our share price to fall.

Sales of a substantial number of shares of our common stock in the public market after this offering, or the perception that these sales might occur, could depress the market price of our common stock and could impair our ability to raise capital through the sale of additional equity securities. Based on the number of shares of common stock outstanding as of June 30, 2010, upon the closing of this offering, we will have shares of common stock outstanding, assuming no exercise of our outstanding options.

All of the common stock sold in this offering will be freely tradable without restrictions or further registration under the Securities Act of 1933, as amended, referred to as the Securities Act, except for any shares held by our affiliates as defined in Rule 144 under the Securities Act. The remaining 75,227,061 common stock outstanding after this offering, based on shares outstanding as of June 30, 2010, will be restricted as a result of securities laws, lock-up agreements or other contractual restrictions that restrict transfers for at least 180 days after the date of this prospectus, subject to certain extensions.

The underwriters may, in their sole discretion, release all or some portion of the shares subject to lock-up agreements with the underwriters prior to expiration of the lock-up period. See "Shares Eligible for Future Sale" below.

The holders of 67,080,613 common stock, or 89.2% based on shares outstanding as of June 30, 2010, and holders of warrants to purchase 50,569 shares of 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. See "Certain Relationships and Related Party Transactions — Investor Rights Agreement" below. 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 intend to file a registration statement on Form S-8 under the Securities Act to register 33,671,239 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. Once we register these shares, they can be freely sold in the public market upon issuance and vesting, subject to a 180-day lock-up period and other restrictions provided under the terms of the applicable plan and/or the option agreements entered into with option holders.

Our management team may invest or spend the proceeds of this offering in ways with which you may not agree or in ways which may not yield a return.

We intend to use the net proceeds from this offering to fund ongoing research and development of our products and SMRT technology, increases in our sales and marketing efforts associated with our planned commercial launch, increases in the scale of our manufacturing operations associated with producing our products and general corporate purposes, including working capital as outlined in "Use of Proceeds" elsewhere in this prospectus. Although we may also use a portion of the net proceeds to acquire complementary products, services, technologies or businesses, we have no current understandings, agreements or commitments to do so at this time.

Our management will have considerable discretion in the application of the net proceeds, and you will not have the opportunity, as part of your investment decision, to assess whether the proceeds are being used appropriately. The net proceeds may be used for corporate purposes that do not increase our operating results or market value. Until the net proceeds are used, they may be placed in investments that do not produce significant income or that may lose value.

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

Upon completion of this offering, our existing significant stockholders, executive officers, directors and their affiliates will beneficially own, in the aggregate, approximately % of our outstanding shares of common stock, and if the underwriters' option to purchase additional shares is exercised in full, such persons and their affiliates will beneficially own, in the aggregate, approximately % 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 upon the closing of this offering, 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, which will become effective upon the closing of this offering, 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 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.

After the completion of this offering, we expect to have approximately shares 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.

SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS AND INDUSTRY DATA

This prospectus contains forward-looking statements that are based on our management's beliefs and assumptions and on information currently available to our management. The forward-looking statements are contained principally in "Prospectus Summary," "Risk Factors," "Management's Discussion and Analysis of Financial Condition and Results of Operations," "Business" and "Compensation Discussion and Analysis." Forward-looking statements include information concerning our possible or assumed future results of operations, business strategies, financing plans, competitive position, industry environment, potential growth opportunities and the effects of competition. Forward-looking statements include all statements that are not historical facts and can be identified by terms such as "anticipates," "believes," "could," "seeks," "estimates," "expects," "intends," "may," "plans," "potential," "predicts, "projects," "should," "will," "would" or similar expressions and the negatives of those terms.

Forward-looking statements involve known and unknown risks, uncertainties and other factors that may cause our actual results, performance or achievements to be materially different from any future results, performance or achievements expressed or implied by the forward-looking statements. We discuss these risks in greater detail in "Risk Factors" and elsewhere in this prospectus. Given these uncertainties, you should not place undue reliance on these forward-looking statements. Also, forward-looking statements represent our management's beliefs and assumptions only as of the date of this prospectus. You should read this prospectus and the documents that we have filed as exhibits to the registration statement, of which this prospectus is a part, completely and with the understanding that our actual future results may be materially different from what we expect.

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.

This prospectus also contains estimates and other information concerning our industry, including market size and growth rates, that are based on industry publications, surveys and forecasts, including those generated by Scientia Advisors. This information involves a number of assumptions and limitations, and you are cautioned not to give undue weight to these estimates. These industry publications, surveys and forecasts generally indicate that their information has been obtained from sources believed to be reliable. The industry in which we operate is subject to a high degree of uncertainty and risk due to variety of factors, including those described in "Risk Factors."

USE OF PROCEEDS

We estimate that the net proceeds from our sale of shares of common stock in this offering at an assumed initial public offering price of $ per share, the midpoint of the price range set forth on the front cover of this prospectus, after deducting estimated underwriting discounts and commissions and estimated offering expenses, will be approximately $ million, or $ million if the underwriters' option to purchase additional shares is exercised in full. A $1.00 increase (decrease) in the assumed initial public offering price would increase (decrease) the net proceeds to us from this offering by $ million, assuming the number of shares offered by us, as set forth on the front cover of this prospectus, remains the same and after deducting the estimated underwriting discounts and commissions.

Although our plans will be subject to revision, assuming an estimated aggregate offering of $200 million resulting in net proceeds to us of approximately $180 million, we plan to invest $60 million to $70 million in current and future applications of our SMRT technologies, use $40 million to $60 million to fund our anticipated future working capital needs, $20 million to $30 million to fund planned capital expenditures and $40 million to $60 million for other general corporate purposes, including, but not limited to, operating expenses, business development activities and operating as a public company. In the event that the underwriters' option to purchase additional shares is exercised, the proceeds will be used to fund our anticipated future working capital needs.

We also may use a portion of the net proceeds to acquire complementary products, services, technologies or businesses. However, we have no understandings, agreements or commitments with respect to any such acquisition at this time.

Pending their use, we plan to invest our net proceeds from this offering in short-term, interest-bearing obligations, investment-grade instruments, certificates of deposit or direct or guaranteed obligations of the U.S. government.

DIVIDEND POLICY

We have never declared or paid cash dividends on our common stock. We currently intend to retain all available funds and any future earnings for use in the operation of our business and do not anticipate paying any dividends on our common stock in the foreseeable future. Any future determination to declare dividends will be made at the discretion of our board of directors and will depend on our financial condition, operating results, capital requirements, general business conditions and other factors that our board of directors may deem relevant.

CAPITALIZATION

The following table sets forth our capitalization as of June 30, 2010 on:

- an actual basis;
- on a pro forma basis to reflect the conversion of all outstanding shares of our convertible preferred stock into 73,305,523 shares of our common stock upon the closing of this offering, the reclassification of our outstanding warrants to purchase convertible preferred stock into warrants to purchase 50,569 shares of common stock upon the closing of this offering and the effectiveness of our amended and restated certificate of incorporation upon the closing of this offering; and
- on a pro forma as adjusted basis to reflect the pro forma adjustments described above and our receipt of the net proceeds from our sale of shares of common stock in this offering at an assumed initial public offering price of $ per share, the midpoint of the price range set forth on the front cover of this prospectus, after deducting estimated underwriting discounts and commissions and estimated offering expenses.

The information below is illustrative only and our capitalization following the closing of this offering will be adjusted based on the actual initial public offering price and other terms of this offering determined at pricing. You should read this table together with "Management's Discussion and Analysis of Financial Condition and Results of Operations" and our financial statements and the related notes appearing elsewhere in this prospectus.

	June 30, 2010		
	Actual	Pro forma	Pro forma as adjusted[1]
		(in thousands)	
Facility financing obligation, less current portion	$ 2,955	$ 2,955	$
Convertible preferred stock warrant liability	282	—	
Convertible preferred stock, $0.0001 par value: 153,394,052 shares authorized, 73,305,523 shares issued and outstanding, actual; no shares authorized, none issued or outstanding, pro forma and pro forma as adjusted	367,036	—	—
Stockholders' equity (deficit):			
Preferred stock, $0.0001 par value; no shares authorized, issued or outstanding, actual; 50,000,000 shares authorized, no shares issued or outstanding, pro forma and pro forma as adjusted	—	—	
Common stock, $0.0001 par value; 121,668,835 shares authorized, 1,921,538 shares issued and outstanding, actual; 1,000,000,000 shares authorized, 75,227,061 shares issued and outstanding, pro forma; and 1,000,000,000 shares authorized, shares issued and outstanding, pro forma as adjusted	—	8	
Additional paid-in capital[1]	19,395	386,705	
Accumulated other comprehensive income (loss)	(5)	(5)	
Accumulated deficit	(255,040)	(255,040)	
Total stockholders' equity (deficit)[1]	(235,650)	131,668	
Total capitalization[1]	$ 134,623	$ 134,623	$

(1) A $1.00 increase (decrease) in the assumed initial public offering price of $ per share, the midpoint of the range set forth on the cover page of this prospectus, would increase (decrease) each of additional paid-in capital, total stockholders' equity and total capitalization by $ million, assuming that the number of shares offered by us, as set forth on the cover page of this prospectus, remains the same, and after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us. Each increase of 1.0 million shares in the number of shares offered by us, together with a $1.00 increase

in the assumed offering price of $ per share, would increase additional paid-in capital, total stockholders' equity and total capitalization by approximately $ million.

The number of shares of our common stock that will be outstanding following this offering is based on 75,227,061 shares of our common stock outstanding as of June 30, 2010 and excludes:

- 17,575,343 shares of common stock issuable upon the exercise of options outstanding as of June 30, 2010, with a weighted-average exercise price of $2.70 per share;
- 50,569 shares of common stock issuable upon the exercise of warrants to purchase 50,569 shares of convertible preferred stock at a weighted-average exercise price of $1.58 per share that upon the closing of this offering will represent warrants to purchase shares of common stock at a weighted-average exercise price of $1.58 per share; and
- 11,537,206 shares of our common stock reserved for future issuance under our stock-based compensation plans, including 5,000,000 shares of common stock reserved for issuance under our 2010 Equity Incentive Plan, 1,500,000 shares of our common stock reserved for issuance under our 2010 Employee Stock Purchase Plan, 1,000,000 shares of our common stock reserved for issuance under our 2010 Outside Director Equity Incentive Plan, and shares that become available under the 2010 Equity Incentive Plan, 2010 Employee Stock Purchase Plan and 2010 Outside Director Equity Incentive Plan pursuant to provisions thereof that automatically increase the shares reserved for issuance under such plans, as more fully described in "Executive Compensation — Employee Benefit Plans." The 2010 Equity Incentive Plan, 2010 Employee Stock Purchase Plan and 2010 Outside Director Equity Incentive Plan will become effective in connection with this offering.

DILUTION

If you invest in our common stock, your interest will be diluted to the extent of the difference between the amount per share paid by purchasers of shares of common stock in this initial public offering and the pro forma as adjusted net tangible book value per share of common stock immediately after the closing of this offering.

At June 30, 2010, our net tangible book value was approximately $(235.7) million, or $(122.64) per share of common stock. Net tangible book value per share represents the amount of our total tangible assets less our total liabilities, divided by the shares of common stock outstanding at June 30, 2010. At June 30, 2010 our pro forma net tangible book value was $131.7 million, or $1.75 per share of common stock. Our pro forma net tangible book value per share represents the amount of our tangible total assets less our total liabilities divided by the total number of shares of our common stock outstanding at June 30, 2010, after giving effect to the conversion of our preferred stock into common stock upon the closing of this offering and the reclassification of our preferred stock warrant liability to additional paid in capital upon the conversion of warrants to purchase shares of our convertible preferred stock into warrants to purchase shares of our common stock upon the closing of this offering.

After giving effect to our sale of shares of common stock in this offering at an assumed initial public offering price of $, the midpoint of the price range set forth on the front cover of this prospectus, and after deducting estimated underwriting discounts and commissions and estimated offering expenses, our pro forma as adjusted net tangible book value at June 30, 2010 would have been $, or $ per share of common stock. This represents an immediate increase in pro forma as adjusted net tangible book value of $ per share to existing stockholders and an immediate dilution of $ per share to new investors.

The following table illustrates this dilution.

Assumed initial public offering price per share		$
Pro forma net tangible book value per share as of June 30, 2010	$	
Increase per share attributable to this offering		
Pro forma as adjusted net tangible book value per share after this offering		
Pro forma net tangible book value dilution per share to new investors in this offering		$

If all our outstanding options had been exercised, the pro forma net tangible book value as of June 30, 2010 would have been $179.2 million, or $1.93 per share, and the pro forma net tangible book value after this offering would have been $ million, or $ per share, causing dilution to new investors of $ per share.

If the underwriters exercise their option to purchase additional shares in full, the pro forma as adjusted net tangible book value will increase to $ per share, representing an immediate increase to existing stockholders of $ per share and an immediate dilution of $ per share to new investors.

The following table summarizes, on a pro forma as adjusted basis as of June 30, 2010, the total number of shares of common stock purchased from us, the total consideration paid to us, and the average price per share paid to us by existing stockholders and by new investors purchasing shares in this offering at the initial public offering price of $, the midpoint of the price range set forth on the front cover of this prospectus, before deducting estimated underwriting discounts and commissions and estimated offering expenses.

	Shares purchased		Total consideration		Average price
	Number	Percent	Amount	Percent	Per share
Existing stockholders		%	$	%	$
New investors					
Total		%	$	%	

If the underwriters exercise their option to purchase additional shares in full, our existing stockholders would own % and our new public investors would own % of the total number of shares of our common stock outstanding upon the closing of this offering.

The foregoing calculations are based on 75,227,061 shares of our common stock outstanding as of June 30, 2010 and exclude:

- 17,575,343 shares of common stock issuable upon the exercise of options outstanding as of June 30, 2010, with a weighted-average exercise price of $2.70 per share;
- 50,569 shares of common stock issuable upon the exercise of warrants to purchase 50,569 shares of convertible preferred stock at a weighted-average exercise price of $1.58 per share that upon the closing of this offering will represent warrants to purchase shares of common stock at a weighted-average exercise price of $1.58 per share; and
- 11,537,206 shares of our common stock reserved for future issuance under our stock-based compensation plans, including 5,000,000 shares of common stock reserved for issuance under our 2010 Equity Incentive Plan, 1,500,000 shares of our common stock reserved for issuance under our 2010 Employee Stock Purchase Plan, 1,000,000 shares of our common stock reserved for issuance under our 2010 Outside Director Equity Incentive Plan, and shares that become available under the 2010 Equity Incentive Plan, 2010 Employee Stock Purchase Plan and 2010 Outside Director Equity Incentive Plan pursuant to provisions thereof that automatically increase the shares reserved for issuance under such plans; as more fully described in “Executive Compensation — Employee Benefit Plans.” The 2010 Equity Incentive Plan, 2010 Employee Stock Purchase Plan and 2010 Outside Director Equity Incentive Plan will become effective in connection with this offering.

SELECTED FINANCIAL DATA

This selected statement of operations data for the years ended December 31, 2007, 2008 and 2009 and selected balance sheet data as of December 31, 2008 and 2009 have been derived from our audited financial statements and related notes included elsewhere in this prospectus. The summary statement of operations data for the six-month periods ended June 30, 2009 and 2010 and the balance sheet data as of June 30, 2010 have been derived from our unaudited financial statements included elsewhere in this prospectus. The statement of operations data for the years ended December 31, 2005 and 2006 and the balance sheet data as of December 31, 2005, 2006 and 2007 has been derived from our audited financial statements not included in this prospectus. The unaudited interim financial statements have been prepared on the same basis as the annual financial statements and reflect all adjustments necessary to fairly state our financial position as of June 30, 2010 and results of operations for the six-month periods ended June 30, 2009 and 2010.

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 financial statements and related notes included elsewhere in this prospectus.

	Years ended December 31,					Six-month periods ended June 30,	
	2005	2006	2007	2008	2009	2009	2010
	(in thousands, except share and per share amounts)						
Statement of Operations Data:							
Revenue	$ 1,400	$ 2,011	$ 2,163	$ 901	$ 135	$ —	$ 1,174
Operating expenses							
Research and development[1]	8,688	10,364	19,216	37,997	75,879	30,090	52,406
Sales, general and administrative[1]	3,652	3,501	6,338	7,713	12,326	5,338	11,717
Total operating expenses	12,340	13,865	25,554	45,710	88,205	35,428	64,123
Loss from operations	(10,940)	(11,854)	(23,391)	(44,809)	(88,070)	(35,428)	(62,949)
Interest income (expense), net	82	271	1,940	1,157	451	327	(35)
Other income (expense), net	(19)	(105)	(67)	(102)	(84)	(10)	(55)
Net loss	$(10,877)	$(11,688)	$ (21,518)	$ (43,754)	$ (87,703)	$ (35,111)	$ (63,039)
Basic and diluted—net loss per share[2]	(*)	(*)	$ (136.46)	$ (66.91)	$ (86.52)	$ (37.69)	$ (49.79)
Weighted-average shares outstanding used to calculate basic and diluted net loss per share[2]	—	1,993	157,683	653,910	1,013,730	931,511	1,266,038
Pro forma net loss per share basic and diluted (unaudited)[2]					$ (1.58)		$ (1.01)
Pro forma weighted-average shares outstanding used to calculate net loss per share—basic and diluted (unaudited)[2]					55,477,488		62,405,225

	As of December 31,					June 30,
	2005	2006	2007	2008	2009	2010
	(in thousands)					
Balance Sheet Data:						
Cash, cash equivalents and investments	$ 9,686	$ 50,090	$ 30,090	$106,051	$ 92,735	$ 138,756
Working capital	8,349	48,043	27,082	102,224	85,326	123,896
Total assets	11,894	52,533	34,349	113,107	101,098	152,897
Notes payable(3)	2,100	2,092	1,700	1,300	—	—
Convertible preferred stock warrant liability	—	140	151	142	226	282
Convertible preferred stock	31,649	81,154	81,222	201,085	269,101	367,036
Total stockholders' deficit	(23,019)	(32,412)	(52,135)	(93,389)	(177,123)	(235,650)

(1) Includes stock-based compensation expense. For further information, see "Stock Option Plans" in the Notes to Financial Statements of this prospectus.

(2) For further information, see "Summary of Significant Accounting Policies—Net Loss Per Share and Pro Forma Net Loss Per Share" in the Notes to Financial Statements of this prospectus for an explanation of the method used to calculate basic and diluted net loss per share of common stock, the pro forma 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) For further information, see "Facility Financing and Debt Obligations" in the Notes to Financial Statements of this prospectus for an explanation of our notes payable.

(*) Due to the limited number of weighted-average unrestricted shares of our common stock outstanding during 2005 and 2006 the calculated net loss per share is not meaningful.

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 financial statements and the related notes appearing at the end of this prospectus. Some of the information contained in this discussion and analysis or set forth elsewhere in this prospectus, 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 prospectus 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 use our SMRT technology in the DNA sequencing market where we have developed and are preparing to commercialize our first product, the PacBio *RS*, a third generation sequencing platform. The PacBio *RS* consists of an instrument platform that uses our proprietary consumables, including our SMRT Cells and reagent kits, providing a complete solution to the customer.

We are a development stage company with limited operating history and have not recognized any revenue from sales or related services resulting from our planned principal operations. Our revenue to date has come from U.S. government grants. Our operations to date have been primarily focused on developing our technology, undertaking engineering activities to develop our products and conducting initial marketing of our products. We operate in a single segment. From inception through June 30, 2010, we have received net proceeds of $356.0 million from the issuance of convertible preferred stock. All of our outstanding convertible preferred stock will automatically convert into common stock upon the closing of this offering.

Since our inception, we have incurred significant net losses and we expect to continue to experience significant losses as we invest in research and development, sales and administrative infrastructure. As of June 30, 2010, we had a deficit accumulated during the development stage of $255.0 million. We incurred net losses of $21.5 million, $43.8 million and $87.7 million in 2007, 2008 and 2009, respectively.

Basis of Presentation

Revenue

To date, our revenue has consisted of amounts earned from government grants. The terms of these grants generally provide for reimbursement for certain research and development expenditures incurred by us over a contractually defined period. We expect to receive continued revenue in the future from government grants. For the six-month period ended June 30, 2010 we have earned approximately $1.2 million in funding from U.S. government grants.

We will recognize revenue when persuasive evidence of an arrangement exists, delivery has occurred or services have been rendered, the price to the buyer is fixed or determinable and collectability is reasonably assured.

We anticipate that our future revenue will be generated primarily from sales of our PacBio *RS* instrument and consumables including SMRT Cells, reagent kits and system service agreements. Provided the criteria for revenue recognition has been met, we generally expect to recognize instrument revenue upon delivery and customer acceptance. Service revenue is expected to consist of revenue derived from warranty and service agreements, which will be recognized in the period during which the related services are rendered. The timing of revenue recognition and the amount of revenue actually recognized in each case will be dependent upon a number of considerations and will require significant judgments and estimates based on the terms of each arrangement and the deliverables and obligations set forth therein.

Deliveries and subsequent customer acceptances of limited production release units of our PacBio *RS* will not result in revenue recognition as the contracts pursuant to which the units were delivered require the delivery of a full commercial release unit. Any amounts collected from customers will be deferred until such time as the full commercial release unit has been accepted at which time revenue will be recognized.

Operating Expenses

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. We generally expense research and development costs as they are incurred unless we make non-refundable upfront payments for delivery of future goods or services, in which case we capitalize the payments and recognize the expense in the statement of operations when the goods or services are delivered. In the near term, we expect to hire additional employees, as well as incur contract-related expense, as we continue to invest in the development of our products.

Since inception, we have incurred approximately $206.7 million of research and development expense. In 2010, we incurred approximately $3.6 million in prototype expense included in research and development that we do not expect to recur in 2011. In addition, manufacturing related expenses in 2010 were recorded in research and development expense as we have not yet recorded revenue. We expect that our research and development expense in 2011 will decline as compared to 2010 as we transition to commercial operations.

Sales, General and Administrative Expense. Sales, general and administrative expense consists primarily of personnel-related expense related to our executive, legal, finance, sales, marketing, human resource, information technology and operations functions, as well as fees for professional services and facility costs. Professional services consist principally of external legal, accounting and other consulting services. We expect sales, general and administrative expense to increase as we incur additional costs related to commercializing our products and operating as a publicly traded company, including increased legal fees, accounting fees and costs of compliance with securities laws and other regulations. In addition, we expect to incur additional costs as we hire personnel and enhance our infrastructure to support the anticipated growth of our business.

Other Income and Expense

Interest Income (Expense), Net. Interest income (expense), net consists primarily of interest income earned on investment balances. Our interest income will vary each reporting period depending on our average investment balances during the period and market interest rates. We expect interest income to fluctuate in the future with changes in average investment balances and market interest rates. Interest income (expense), net also includes interest expense relating to loan and debt agreements and facility financing obligations resulting from lease agreements. We expect interest expense to fluctuate in the future with changes in the obligations.

Other Income (Expense), Net. Other income (expense), net consists primarily of the change in the fair value of our convertible preferred stock warrants. Our outstanding convertible preferred stock warrants are classified as liabilities and, as such, are marked-to-market at each balance sheet date with the corresponding gain or loss from the adjustment recorded as other income (expense), net. We will continue to record adjustments to the fair value of the warrants until they are exercised, automatically converted into warrants to purchase common stock or expire, at which time the warrants will no longer be remeasured at each balance sheet date. Upon the closing of this offering, our outstanding warrants will automatically convert into warrants to purchase common stock.

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

Our discussion and analysis of our financial condition and results of operations are based upon our financial statements, which have been prepared in accordance with accounting principles generally accepted in the United States, or GAAP. The preparation of financial statements in accordance with GAAP requires us to make estimates and assumptions that affect the reported amounts of assets, liabilities, revenue, expense and related disclosures. We base our estimates and assumptions on historical experience and on various other factors that we believe to be reasonable under the circumstances. We evaluate our estimates and assumptions on an ongoing basis. The results of our analyses form the basis for making assumptions about the carrying values of assets and liabilities that are not readily apparent from other sources. Our actual results may differ, potentially materially, from these estimates under different assumptions or conditions.

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

We currently recognize revenue from government grants. 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.

Government grants are made pursuant to agreements that generally provide cost reimbursement for certain types of expenditures in return for research and development activities over a contractually defined period. Revenue from government grants are recognized in the period during which the related costs are incurred, provided that the conditions under which the government grants were issued have been met.

Convertible Preferred Stock Warrants

We classify freestanding warrants to purchase shares of our convertible preferred stock as liabilities on our balance sheets at fair value because the warrants may conditionally obligate us to redeem the underlying convertible preferred stock at some point in the future. The warrants are subject to remeasurement at each balance sheet date, and any change in fair value is recognized as a component of other income (expense), net in the statements of operations. We estimate the fair value of these warrants at the respective balance sheet dates using the Black-Scholes option pricing model. We use a number of assumptions to estimate the fair value, including the remaining contractual terms of the warrant, risk-free interest rates, expected dividend yield and expected volatility of the price of the underlying common stock. These assumptions are highly judgmental and could differ significantly in the future.

During 2007, 2008 and 2009, we recorded charges (gains) of $10,000, $(9,000) and $84,000, respectively, through other income (expense), net to reflect the change in the fair value of the warrants. For the six-month periods ended June 30, 2009 and 2010 we recorded charges of $10,000 and $56,000, respectively, as a result of an increase in the fair value of the warrants.

Valuation of Stock-based Awards, Common Stock and Warrants

Stock-based Compensation

Prior to January 1, 2006, we accounted for our stock options granted to employees using the intrinsic value method. The intrinsic value method requires the recognition of compensation expense for stock options granted to employees based on differences between the exercise price of the stock options granted and the fair value of the underlying common stock. Pursuant to the intrinsic value method, any compensation cost relating to stock options was recorded on the date of the grant as a component of stockholders' equity as deferred compensation and was subsequently amortized to expense over the vesting period of the award. We generally did not recognize stock-based compensation for stock options granted to our employees prior to January 1, 2006 as we granted stock options with an exercise price equal to the fair value of the underlying common stock.

Effective January 1, 2006, we adopted the fair value method of accounting for our stock options granted to employees which requires us to measure the cost of employee services received in exchange for the stock options based on the grant date fair value of the award. We estimated the value, and resulting cost, of stock-based compensation awards using the Black-Scholes option pricing model. The resulting cost is recognized over the period during which an employee is required to provide service in exchange for the award, generally the vesting period, which is four to five years.

We adopted the fair value method using the prospective transition method as prior to adoption we used the minimum value method for the previously required pro forma disclosures. The prospective transition method requires us to continue to apply the intrinsic value method in future periods to equity awards outstanding as of January 1, 2006. Under the prospective transition method, any compensation costs that will be recognized from January 1, 2006 will include only (i) compensation cost for all stock-based awards granted prior to, but not yet vested as of December 31, 2005, based on the intrinsic value method and (ii) compensation cost for all stock-based awards granted or modified subsequent to December 31, 2005, net of estimated forfeitures, based on the fair value method. We amortize the fair value of our stock-based compensation for the equity awards granted after January 1, 2006 on a straight-line basis, which reflects the length of service to be provided by our employees over the vesting period of the awards.

The fair values of each new employee option awarded were estimated on the grant date for the periods below using the Black-Scholes option pricing model with the following assumptions.

	Years ended December 31,			Six-month periods ended June 30,	
	2007	2008	2009	2009	2010
				(unaudited)	
Expected term	7.0 years	7.0 years	5.7 years	5.7 years	5.9 years
Expected volatility	60%	50 - 52%	46 - 48%	48%	46 - 55%
Risk-free interest rate	3.5 - 5.1%	2.8 - 3.5%	1.8 - 3.0%	1.8 - 3.0%	2.2 - 2.6%
Dividend yield	—	—	—	—	—

If in the future we determine that another method for calculating the fair value of our stock options is more reasonable, or if another method for calculating the above input assumptions is prescribed by authoritative guidance, the fair value calculated for our employee stock options could change significantly.

The Black-Scholes option pricing model requires inputs such as the risk-free interest rate, expected term and expected volatility. Further, the forfeiture rate also affects the amount of aggregate compensation. These inputs are subjective in nature and generally require us to apply significant judgment.

The risk-free interest rate that we use is based on the U.S. Treasury yield in effect at the time of grant with maturities approximating each grant's expected life. The expected term for our employee grants is based on our historic cancellation and exercise experience and trends as well as our expectations for future periods.

Our expected volatility is derived from the historical volatilities of several unrelated public companies within industries comparable to our business, including companies providing genetic sequencing equipment, supplies and services, because we have no trading history on our common stock. When making the selections of our peer companies and considering factors relating to volatility, we also considered the historical development of the peer enterprises relative to our planned development as it pertains to the expected term of our option grants as well as the size and financial leverage of potential comparable companies. The peer companies used in determining our expected volatility were, at the time of volatility determination, significantly larger and operationally further developed than us. However, the operational and financial growth and development of the peer companies during the period in which historical volatility were considered, were determined to be sufficiently similar to our expectations for future growth to provide a reasonable basis on which to establish our expected volatility. After considering both quantitative and qualitative factors, we combined the various factors to conclude a single volatility factor.

We estimate our forfeiture rate based on an analysis of our actual forfeitures and will continue to evaluate the appropriateness of the forfeiture rate based on actual forfeiture experience, analysis of employee turnover behavior and other factors. Quarterly changes in the estimated forfeiture rate can have a significant effect on reported stock-based compensation expense, as the cumulative effect of adjusting the rate for all expense amortization is recognized in the period the forfeiture estimate is changed. If a revised forfeiture rate is higher than the previously estimated forfeiture rate, an adjustment is made that will result in a decrease to the stock-based compensation expense recognized in the financial statements. If a revised forfeiture rate is lower than the previously estimated forfeiture rate, an adjustment is made that will result in an increase to the stock-based compensation expense recognized in the financial statements. The effects of forfeiture adjustments during the years ended December 31, 2007, 2008, 2009 and the six-month period ended June 30, 2010 have not been significant.

We will accumulate additional employee option data over time and incorporate market data related to our common stock which may result in future refinements to our estimates of volatility, expected lives and forfeiture rates, which could materially impact the future valuation of our stock-based awards and the future stock-based compensation expense that we recognize.

We recognized stock-based compensation expense related to employees and non-employees as follows:

	Years ended December 31,			Six-month periods ended June 30, (unaudited)	
	2007	2008	2009	2009	2010
			(in thousands)		
Research and development	$398	$1,183	$2,314	$ 1,062	$ 2,498
Sales, general and administrative	184	387	748	332	1,242
Total stock-based compensation expense	$582	$1,570	$3,062	$ 1,394	$ 3,740

As of June 30, 2010, we had $15.8 million of unrecognized stock-based compensation expense, net of estimated forfeitures, that is expected to be recognized over a weighted-average period of 3.3 years. In future periods, our stock-based compensation expense is expected to increase as a result of our existing unrecognized stock-based compensation and as we issue additional stock-based awards to attract and retain employees and non-employee directors.

We also account for stock options issued to non-employees based on their estimated fair value determined using the Black-Scholes option pricing model. However, the fair value of the equity awards granted to non-employees is remeasured as the awards vest, and the resulting increase in value, if any, is recognized as expense during the period the related services are rendered.

Common Stock Valuation

The fair values of the common stock underlying stock options granted through 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. We believe that the composition of our board of directors resulted in a fair and reasonable view of the stock value and, together with the board of directors' cumulative knowledge of, and experience with, similar companies, resulted in a fair valuation of our common stock.

Given the absence of a public trading market, 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 initial public offering, or IPO, given prevailing market conditions. If we had made different assumptions and estimates, the amount of our stock-based compensation expense could have been materially different. We believe that we have used reasonable methodologies, approaches and assumptions in determining the fair value of our common stock.

Factors Considered and Methodologies Used in Determining Common Stock Fair Value

In valuing our common stock, we determine our business equity value by taking a weighted combination of the value indications using two valuation approaches, an income approach and a market approach.

The income approach estimates the present value of future estimated cash flows, based upon forecasted revenue and costs. These discounted cash flows are added to the present value of our estimated enterprise terminal value. These future cash flows are discounted to their present values using a discount rate corresponding to our estimated required rate of return. The discount rate is derived from an analysis of the cost of capital of our publicly traded peer group as of each valuation date and is adjusted to reflect the risks inherent in our cash flows.

The market approach estimates the fair value of a company by applying the market multiples of comparable publicly traded companies. We calculate a multiple of key metrics implied by the enterprise values or acquisition values of our publicly traded peers. Based on the range of these observed multiples, we apply judgment in determining an appropriate multiple to apply to our metrics in order to derive an indication of value.

Once we determine the fair value, we use two methods to allocate our company value to each of our classes of stock, the Option Pricing Method and the Probability Weighted Expected Return Method.

- The Option Pricing Method values each equity class by creating a series of call options on our enterprise value, with exercise prices based on the liquidation preferences, participation rights and strike prices of derivatives. This method is generally preferred when future outcomes are difficult to predict and dissolution or liquidation is not imminent.
- The Probability Weighted Expected Return Method involves a forward-looking analysis of the possible future outcomes of the enterprise. This method is particularly useful when discrete future outcomes can be predicted at a high confidence level with a probability distribution. Discrete future outcomes considered under the Probability Weighted Expected Return Method included non-IPO market based outcomes as well as IPO scenarios. In the non-IPO scenario, a large portion of our equity value is allocated to our convertible preferred stock as the aggregate liquidation preference was approximately $258.8 million at December 31, 2009. In the IPO scenario, the equity value is allocated pro rata among the shares of common stock and each series of convertible preferred stock, which causes our common stock to have a higher relative value per share than under the non-IPO scenario.

Over time, as certainty developed regarding possible discrete events, including an IPO, the allocation methodology utilized to allocate our value transitioned from the Option Pricing Method, or OPM, which was utilized through July 2009, to the Probability Weighted Expected Return Method, or PWERM, which has been utilized since December 2009.

Information regarding our stock option grants to our employees and certain non-employee members of our board of directors since January 1, 2009 is summarized as follows:

Date of issuance	Number of options granted	Exercise price	Common stock value	Option fair value[1]
March 19, 2009	1,462,500	$ 1.93	$ 1.93	$ 0.89
April 21, 2009	43,000	$ 1.93	$ 1.93	$ 0.90
May 19, 2009	40,000	$ 1.93	$ 1.93	$ 0.91
June 10, 2009	505,000	$ 2.82	$ 2.82	$ 1.36
July 21, 2009	206,000	$ 2.82	$ 2.82	$ 1.31
July 24, 2009	330,000	$ 2.82	$ 2.82	$ 1.32
December 15, 2009	986,000	$ 4.25	$ 4.25	$ 1.94
February 3, 2010	2,203,555	$ 4.25	$ 4.25	$ 2.00
February 17, 2010	1,095,000	$ 4.25	$ 4.25	$ 2.00
February 22, 2010	750,000	$ 4.25	$ 4.25	$ 2.01
June 8, 2010	947,500	$ 5.42	$ 5.42	$ 2.77
June 9, 2010	200,000	$ 5.42	$ 5.42	$ 2.77
July 8, 2010	74,500	$ 6.37	$ 6.37	$ 3.32
July 19, 2010	573,000	$ 6.37	$ 6.37	$ 3.32
July 29, 2010	360,000	$ 6.37	$ 6.37	$ 3.32
August 4, 2010	218,583	$ 6.71	$ 6.71	$ 3.50
August 12, 2010	500,000	$ 6.71	$ 6.71	$ 3.50

(1) Option fair value determined using the Black-Scholes option pricing model using the input assumptions outlined above.

The intrinsic value of all outstanding options as of June 30, 2010 was $ million based on the estimated value of $ per share, the midpoint of the planned range of this offering.

We granted stock options with exercise prices between $4.25 and $6.71 per share during 2010 while stock options with exercise prices between $1.93 and $4.25 per share were granted during 2009. No single event caused the valuation of our common stock to increase or decrease from January 2009 to August 2010, rather, it has been a combination of the following factors that led to the changes in the fair value of the underlying common stock.

March 2009 to May 2009. After a period of significant volatility in the U.S. and global capital markets during the third and fourth quarters of 2008, U.S. capital market conditions began to stabilize and recover in early 2009. During this time period, we introduced our SMRT technology and began to successfully manufacture key aspects of our system consumables in-house. Although the progression towards a commercial product continued to track to established timeframes, the depth and residual impacts of the economic turmoil of 2008, coupled with an inactive private capital market during early 2009, required us to reassess our potential exit scenarios, which had a material adverse effect on our value conclusions when compared to prior periods.

In deriving our enterprise value during the period, we applied a 65% weighting towards values derived using a market approach and 35% to those using an income approach based on discounted cash flows. In applying the OPM to the concluded value during this period, the expected term of our equity of 2.8 years was based on the weighted average time to liquidity of several assumed liquidity events. The volatility was based on the annualized average daily volatility over the expected term for our peer companies and was determined to be 56%. The risk-free interest rate was 0.84%, based on U.S. Treasury Securities corresponding to the expected term. Based on this information, we determined the total value of each security. We applied a discount of 33% for lack of marketability to the value of the common stock based upon a protective put calculation using the same assumptions as those used for the OPM allocation. For options granted during this period, we estimated the fair value of our common stock to be $1.93 per share compared to the previous estimate of $3.48 per share in December 2008.

June 2009 to July 2009. Between June 2009 and July 2009, the weak recovery of the U.S. economy continued and, although signs of stability were becoming evident, access to private and public capital remained challenging. During this period, however, enterprise values of our publicly-traded peers outperformed the broader market. Our operational and development progress continued as expected and internal commercial launch timelines remained on schedule.

In deriving our enterprise value during the period, we applied a 65% weighting towards IPO scenarios occurring during 2010 and 2011 and 35% to remaining a private operating company. In applying the OPM to the concluded value during this period, the expected term of our equity of 2.7 years was based on the weighted average time to liquidity of several assumed liquidity events. The volatility was based on the annualized average daily volatility over the expected term for our peer companies and was determined to be 50%. The risk-free interest rate was 1.4%, based on U.S. Treasury Securities corresponding to the expected term. Based on this information, we determined the total value of each security. We applied a discount of 29% for lack of marketability to the value of the common stock based upon a protective put calculation using the same assumptions as those used for the OPM allocation. For options granted during this period, we estimated the fair value of our common stock to be $2.82 per share.

December 2009 to February 2010. Between December 2009 and February 2010, the U.S. economy and U.S. capital markets began to stabilize. During the period leading up to December 2009, our peer group underperformed the market and experienced significant value declines as evidenced by decreases in the trading prices of their stocks. As a result, certain market multiples used as assumption inputs into our valuation models decreased. During this time period, however, we identified and entered into sales agreements with customers for our initial nine limited production release units of the PacBio *RS* instrument with expected deliveries commencing during mid-2010. We also continued to make progress in developing our full commercial release units. The combination of these factors supported our improved outlook regarding the fair value of our common stock under various IPO scenarios.

As noted previously, the OPM is preferred when future outcomes are difficult to predict and the PWERM becomes useful when discrete future outcomes become more predictable. During the period between July and December 2009, when the Board of Directors did not make valuation determinations or grant options, the range of discrete events, specifically IPO scenarios, became fairly well established, therefore the PWERM was utilized to determine the fair value of our common stock. The increase in the probability of a liquidity event from prior valuations was primarily related to commencement of sales and marketing operations and entering into sales agreements with customers for our instrument. The PWERM allocation method used a risk-adjusted discount of 31% based upon an adjusted capital asset pricing model, or adjusted CAPM, a marketability discount to specified events of 17% to 25% based on the average estimated time to each event ranging from 0.95 to 4.1 years. The expected outcomes were weighted 70% towards IPO scenarios occurring during late 2010 and through 2011, valued using the market approach, and 30% to remaining a private operating company, valued using the income approach. For options granted during this period, we estimated the fair value of our common stock to be $4.25 per share.

June 2010. During June 2010, the equity markets demonstrated modest weakness as the broader markets and the stock prices of our peer companies declined in May and into June. However, through June, we secured multiple orders for the full commercial release of the PacBio *RS*, as well as an order for an additional limited production release unit.

The PWERM allocation method used an adjusted CAPM discount rate of 27%, a marketability discount to specified events of 9% to 25% based on the average estimated time to each event ranging from 0.53 to 4.7 years. The expected outcomes were weighted 88% towards IPO scenarios occurring during late 2010 and through 2011 and 12% to remaining a private operating company. For options granted June 3, 2010, we estimated the fair value of our common stock to be $5.42 per share.

July 2010. During late June and early July 2010 the U.S. capital markets and the trading prices of our peer companies demonstrated modest stability. During this period, we completed our Series F convertible preferred stock financing raising a total of $108.8 million. During July we also shipped three limited production release

units to customers and commenced installation and testing of two of these units at customer locations. Finally, during July we conducted our IPO organizational meeting, which impacted our probability weightings regarding the timing of the IPO.

The PWERM allocation method used an adjusted CAPM discount rate of 26%, a marketability discount to specified events of 8% to 26% based on the average estimated time to each event ranging from 0.39 to 4.6 years. The expected outcomes were weighted 90% towards IPO scenarios occurring during late 2010 and through 2011 and 10% to remaining a private operating company. For options granted during July 2010, we estimated the fair value of our common stock to be $6.37 per share.

August 2010. During mid- to late-July 2010, the U.S. capital markets weakened and, as a result, certain equity values and multiples of our peer public companies on which we base certain valuation calculations declined. The value we achieved as a company through research and commercial milestones more than offset the general declines in the markets and our peer companies. Specifically, during the first week of August, our first limited production release unit of the PacBio *RS* was accepted by a customer while additional units were being installed at customer sites.

The PWERM allocation method used an adjusted CAPM discount rate of 25%, a marketability discount to specified events of 7% to 27% based on the average estimated time to each event ranging from 0.30 to 4.5 years. The expected outcomes were weighted 90% towards IPO scenarios occurring during late 2010 and through 2011 and 10% to remaining a private operating company. For options granted during August 2010, we estimated the fair value of our common stock to be $6.71 per share.

As noted above, our board of directors estimated the fair value of our common stock during these periods. We believe that the composition of our board of directors resulted in a fair and reasonable view of the stock value and, together with the board of directors' cumulative knowledge of, and experience with, similar companies, resulted in a fair valuation of our common stock.

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 2007, 2008 and 2009 was $0.2 million, $0.3 million and $0.4 million, respectively. Stock-based compensation expense of $0.1 million and $0.6 million was recorded for the six-month periods ended June 30, 2009 and 2010, 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.

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 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 “Facility Financing and Debt Obligations” in the Notes to Financial Statements of this prospectus.

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 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, 2009, we had a full valuation allowance against all of our deferred tax assets. At December 31, 2009, we had a full valuation allowance against all of
our deferred tax assets which totaled $74.0 million, including net operating loss carryforwards and research and development tax credits of $60.5 million and $7.6 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, 2007, 2008, and 2009, our total unrecognized tax benefits were $0.9, $2.0, 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.

Results of Operations

Comparison of the Six-month Periods Ended June 30, 2009 and 2010

	Six-month periods ended June 30,		Increase/ (decrease)	% Increase/ (decrease)
	2009	2010		
	(unaudited)		(in thousands, except percentages)	
Revenue	$ —	$ 1,174	$ 1,174	—
Research and development	30,090	52,406	22,316	74%
Sales, general and administrative	5,338	11,717	6,379	120%
Loss from operations	(35,428)	(62,949)	27,521	78%
Interest income (expense), net	327	(35)	(362)	(111)%
Other income (expense), net	(10)	(55)	45	450%
Net Loss	(35,111)	(63,039)	27,928	80%

Revenue

Revenue is comprised solely of government grant revenue. This revenue 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.

Research and Development Expense

The $22.3 million increase in research and development expense was driven primarily by a $12.3 million increase to laboratory and equipment expense, including prototypes, a $6.7 million increase in personnel-related expense from increased headcount and an increase in facility and information technology expense of $1.1 million. Research and development expense included stock-based compensation expense of $1.1 million and $2.5 million during the six-month periods ended June 30, 2009 and 2010, respectively.

Sales, General and Administrative Expense

The $6.4 million increase in sales, general and administrative expense was driven primarily by a $3.4 million increase in personnel related expense resulting from increased headcount, a $1.5 million increase in customer application, demonstration and marketing initiatives and a $1.2 million increase in equipment expense and depreciation. Furthermore, sales, general and administrative expense included stock-based compensation expense of $0.3 million and $1.2 million during the six-month periods ended June 30, 2009 and 2010, respectively.

Interest Income (Expense), Net

The decrease in interest income was due primarily to lower investment balances and lower interest rates on our investments. In addition we recorded interest expense as a result of the financing obligation under a lease agreement.

Other Income (Expense), Net

The change in other income (expense), net primarily reflects the remeasurement of our warrant liabilities.

Comparison of the Years Ended December 31, 2008 and 2009

	Years ended December 31,		Increase/ (decrease)	% Increase/ (decrease)
	2008	2009		
	(in thousands, except percentages)			
Revenue	$ 901	$ 135	$ (766)	(85)%
Research and development	37,997	75,879	37,882	100%
Sales, general and administrative	7,713	12,326	4,613	60%
Loss from operations	(44,809)	(88,070)	43,261	97%
Interest income (expense), net	1,157	451	(706)	(61)%
Other income (expense), net	(102)	(84)	(18)	(18)%
Net Loss	(43,754)	(87,703)	43,949	100%

Revenue

Revenue is comprised solely of government grant revenue. This revenue is dependent on the grant received, the amount of the grant and subsequent work performed pursuant to the grant. The $0.8 million decrease in revenue realized was due to a reduction in the amount of awarded government grants in 2009 as compared to 2008.

Research and Development Expense

The $37.9 million increase in research and development expense was driven primarily by an $18.9 million increase in prototype-related expenditures, equipment and development supplies, and an $11.9 million increase in personnel-related expense resulting from increased headcount. In addition, contract services and other professional services increased $3.0 million and information technology and facility expense increased by $2.2 million. Research and development expense included stock-based compensation expense of $1.2 million and $2.3 million during 2008 and 2009, respectively.

Sales, General and Administrative Expense

The $4.6 million increase in sales, general and administrative expense was driven primarily by a $2.8 million increase in professional services mainly due to higher legal costs and a $1.7 million increase in personnel-related expense resulting from a significant increase in headcount for operations activities and the expansion of the marketing team to support increased public relations and market research activities. Sales, general and administrative expense included stock-based compensation expense of $0.4 million and $0.7 million during 2008 and 2009, respectively.

Interest Income (Expense), Net

The decrease in interest income was primarily a result of lower average investment balances and lower interest rates in 2009 as compared to 2008.

Other Income (Expense), Net

The change in other income (expense), net reflects the remeasurement of our convertible preferred stock warrant liability.

Comparison of the Years Ended December 31, 2007 and 2008

	Years ended December 31,		Increase/ (decrease)	% Increase/ (decrease)
	2007	2008		
	(in thousands, except percentages)			
Revenue	$ 2,163	$ 901	$ (1,262)	(58)%
Research and development	19,216	37,997	18,781	98%
Sales, general and administrative	6,338	7,713	1,375	22%
Loss from operations	(23,391)	(44,809)	21,418	92%
Interest income (expense), net	1,940	1,157	(783)	(40)%
Other income (expense), net	(67)	(102)	35	52%
Net loss	(21,518)	(43,754)	22,236	103%

Revenue

Revenue is comprised solely of government grant revenue. This revenue is dependent on the grant received, the amount of the grant and subsequent work performed pursuant to the grant. The $1.3 million decrease in revenue realized was due to a reduction in the amount of awarded government grants in 2008 as compared to 2007.

Research and Development Expense

The $18.8 million increase in research and development expense was driven primarily by a $10.3 million increase in personnel related expense resulting from increased headcount, a $4.4 million increase in prototype-related expenditures, equipment and development supplies, a $2.3 million increase in information technology and facility expense and a $0.9 million increase in contract services and other professional services. Research and development expense included stock-based compensation expense of $0.4 million and $1.2 million during 2007 and 2008, respectively.

Sales, General and Administrative Expense

The $1.4 million increase in sales, general and administrative expense was driven primarily by a $1.9 million increase in personnel related expense resulting from increased headcount primarily in operations and recruiting activities and a $0.2 million increase in trade show and promotional expense related to increased public relations and market research activities, offset by a $1.0 million decrease in professional services primarily driven by non-recurring legal fees. Sales, general and administrative expense included stock-based compensation expense of $0.2 million and $0.4 million during 2007 and 2008, respectively.

Interest Income (Expense), Net

The decrease in interest income was due primarily to lower investment balances and lower interest rates on our investments.

Other Income (Expense), Net

The change in other income (expense), net was insignificant.

Liquidity and Capital Resources

Since our inception, and as of June 30, 2010, we have financed our operations primarily through an aggregate of $356.0 million from private placements of convertible preferred stock.

As of June 30, 2010, we had cash, cash equivalents and investments of $138.8 million and no debt obligations. For the six-month period ended June 30, 2010, we closed private placements of convertible preferred stock with net proceeds of $97.9 million.

The following table summarizes our working capital and cash, cash equivalents and investments for the periods indicated.

	As of December 31,		June 30, 2010
	2008	2009	(unaudited)
		(in thousands)	
Working capital	$ 102,224	$ 85,326	$ 123,896
Cash, cash equivalents and investments	106,051	92,735	138,756

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

	Years ended December 31,			Six-month periods ended June 30, (unaudited)	
	2007	2008	2009	2009	2010
			(in thousands)		
Net cash used in operating activities	$(16,732)	$(38,303)	$(74,838)	$(29,374)	$(49,595)
Net cash provided by (used in) investing activities	(18,338)	(10,393)	18,594	160	(48,227)
Net cash provided by (used in) financing activities	(225)	119,927	67,014	(394)	98,734

During the years ended December 31, 2007, 2008 and 2009 and in the six-month period ended June 30, 2010, we used $3.0 million, $5.7 million, $5.2 million and $3.0 million in cash, respectively, to fund capital expenditures. We currently anticipate making significant capital expenditures in the future primarily for purchases of equipment to be used in research and manufacturing scale-up.

Beyond our investment in research and manufacturing equipment, we expect to invest capital in additional production arrangements, the timing and amount of which will depend on our business and financial outlook and the specifics of the opportunity. We may also consider additional strategic investments or acquisitions. This may require us to access additional capital through equity or debt offerings. If we are unable to access additional capital, our growth will be limited due to the inability to invest in additional production facilities.

We believe that the net proceeds from this offering, existing cash, cash equivalents and investments will be sufficient to fund our projected operating requirements for at least 12 months. Until we can generate a sufficient amount of product revenue, we expect to finance future cash needs through public or private equity offerings, debt financings or corporate collaboration and licensing arrangements. 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 ownership of our stockholders will be diluted and the new equity securities may have priority rights over existing stockholders.

Cash Flows From Operating Activities

Our primary uses of cash from operating activities are for personnel-related expenditures and equipment related to research and development activities. Cash used in operating activities was $16.7 million, $38.3 million and $74.8 million for the years ended December 31, 2007, 2008 and 2009, respectively and $29.4 million and $49.6 million for the six-month periods ended June 30, 2009 and 2010, respectively.

Cash used in operating activities of $49.6 million for the six-month period ended June 30, 2010 reflected a net loss of $63.0 million, partially offset by aggregate non-cash charges of $6.3 million and a net change of $7.1 million in our net operating assets and liabilities. Non-cash charges primarily included $2.3 million of depreciation and $4.0 million in stock-based compensation. The net change in our operating assets and liabilities was primarily a result of the increase in accrued expenses and other current liabilities of $5.5 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 used in operating activities of $38.3 million in 2008 reflected a net loss of $43.8 million, partially offset by aggregate non-cash charges of $5.1 million and a net change of $0.3 million in our net operating assets and liabilities. Non-cash charges primarily included $3.0 million of depreciation and $2.1 million of stock-based compensation. The net change in our operating assets and liabilities was primarily a result of the increase in lease incentives and other long-term liabilities of $0.5 million.

Cash used in operating activities of $16.7 million in 2007 reflected a net loss of $21.5 million, partially offset by aggregate non-cash charges of $3.2 million and a net change of $1.6 million in our net operating assets and liabilities. Non-cash charges primarily included $1.6 million of depreciation and $1.7 million of stock-based compensation. The net change in our operating assets and liabilities was primarily a result of the increase in accounts payable of $1.4 million.

Cash Flows From Investing Activities

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

For the six-month period ended June 30, 2010, cash used in investing activities was $48.2 million as a result of $45.2 million in net investment purchases and $3.0 million of capital expenditures.

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.

In 2008, cash used in investing activities was $10.4 million as a result of $5.7 million of capital expenditures and $4.7 million in net investment purchases.

In 2007, cash used in investing activities was $18.3 million as a result of $15.3 million in net investment purchases and $3.0 million of capital expenditures.

Cash Flows From Financing Activities

For the six-month period ended June 30, 2010, cash provided by financing activities was $98.7 million, primarily as a result of the receipt of $97.9 million from our sale 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 principal repayments on our debt of $1.3 million.

In 2008, cash provided by financing activities was $119.9 million, primarily as a result of the receipt of $119.8 million from our sale of Series E convertible preferred stock.

In 2007, cash used in financing activities was $0.2 million, primarily as a result of net repayments on our debt of $0.4 million.

Contractual Obligations, Commitments and Contingencies

The following table provides summary information concerning our future contractual obligations as of June 30, 2010.

	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]	$ 7,111	$ 2,586	$ 2,543	$ 1,920	$ 62
Facility financing obligation	2,029	333	852	844	—
Total contractual obligations	$9,140	$ 2,919	$ 3,395	$ 2,764	$ 62

(1) Maintenance, insurance, taxes and contingent rent obligations are excluded. See our financial statements and related notes included elsewhere in this prospectus for a discussion of our operating leases.

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 on the balance sheet as of June 30, 2010. See our financial statements and related notes included elsewhere in this prospectus for a discussion of this commitment.

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.

An estimate of significant payments related to licensing and other arrangements not included in the contractual obligations table include payments related to four cancelable license agreements 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. Pursuant to the terms of the agreements, future license maintenance fees and minimum royalty payments amount to $0.3 million for 2010, and $0.4 million for each of 2011, 2012 and 2013 and thereafter.

In addition, upon commercialization of products that incorporate the licensed technologies, we may be obligated to pay certain milestone fees of up to $80,000. In addition, upon commercialization of products incorporating a technology provided under one license agreement, the milestone fees owed by us under that license decrease by $5,000 in the first year following commercialization, return to the pre-commercialization amounts for the second year following commercialization, increase by $10,000 the third year and by $25,000 the fourth year following commercialization of products incorporating that licensed technology.

Off-Balance Sheet Arrangements

We do 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. 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.

Quantitative and Qualitative Disclosures About 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.

Recent Accounting Pronouncements

In October 2009, the FASB issued an accounting standards update that provides application guidance on whether multiple deliverables exist, how the deliverables should be separated and how the consideration should be allocated to one or more units of accounting. This update establishes a selling price hierarchy for determining the selling price of a deliverable. The selling price used for each deliverable will be based on vendor-specific objective evidence, if available, third-party evidence if vendor-specific objective evidence is not available, or estimated selling price if neither vendor-specific nor third-party evidence is available. We will be required to apply this guidance prospectively for revenue arrangements entered into or materially modified after January 1, 2011. Our revenue to date has been limited to government grant revenue and no revenue has been recognized from the sale of our products. Therefore, adoption of this guidance is not expected to have a material impact on our financial statements.

In April 2010, the FASB issued an accounting standards update which provides guidance on the criteria to be followed in recognizing revenue under the milestone method. The milestone method of recognition allows a vendor who is involved with the provision of deliverables to recognize the full amount of a milestone payment upon achievement, if, at the inception of the revenue arrangement, the milestone is determined to be substantive as defined in the standard. The guidance is effective on a prospective basis for milestones achieved in fiscal years and interim periods within those fiscal years, beginning on or after June 15, 2010. The adoption of this guidance is not expected to have a material impact on our financial statements.

BUSINESS

Overview

We develop, manufacture and market an integrated platform for genetic analysis. We have developed an approach 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 called 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 research community with a new tool for investigating basic biochemical processes such as DNA synthesis. We believe our SMRT technology has the potential to advance scientific understanding by providing a window into biological processes that has not previously been open.

In the past fifteen years, there have been a number of important advances in the understanding of biological systems, including the initial characterization of the cellular blueprints, or genomes, of humans and a number of other organisms. These discoveries which were expected to herald a new age in science and medicine have yet to deliver on their promise, due in part to the limitations of currently available life science tools that rely on averages and aggregates. These techniques often mask potentially important sources of variation that are believed to underlie diseases such as cancer. We believe our technology addresses these limitations and may lead to important new advances in the understanding of biological systems.

Our initial focus is on the DNA sequencing market where we have developed and introduced a third generation sequencing platform, the PacBio *RS*. We believe that the PacBio *RS*, which uses our proprietary SMRT technology, maintains many of the key attributes of currently available sequencing technologies while solving many of the inherent limitations of the first and second generation technologies, including short readlengths, limited flexibility, long time to result, lower throughput, 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 three chemical reagent kits. Customers use these reagent kits to format and sequence their DNA samples. The Template Prep Kit includes ligase and restriction enzymes, the Binding Kit includes our DNA polymerase and the Sequencing Kit includes our phospholinked nucleotides. The system is designed to be integrated into existing laboratory workflows and information systems. Customers that have placed orders for our products include research institutions and commercial companies that plan to use the PacBio *RS* for clinical, basic and agricultural research, drug discovery and development, biosecurity and bio-fuels. Our customers are also interested in a number of other potential applications, including molecular diagnostics, food safety and forensics, which may require us to enhance the capabilities of our current products or develop additional products. To date, we have neither commercially launched nor generated any revenue from our products.

We believe that our SMRT technology has the potential to impact scientific study beyond DNA sequencing. We, and our scientific collaborators, have published a number of peer-reviewed articles in journals including *Science*, *Nature* and *Nature Methods* highlighting the power and potential applications of the SMRT platform. Potential applications that have been demonstrated include the study of chemical and structural modifications of DNA and the processing of RNA and proteins although these applications will not be available at commercial launch of the PacBio *RS*. We plan to provide these additional capabilities through enhancements to software and consumables without modifications to the PacBio *RS*.

Evolution of Biology

Classical Biology

Genetic inheritance in living systems is conveyed through a naturally occurring information storage system known as deoxyribonucleic acid, or DNA. DNA stores information in a linear sequence of the chemical bases adenine, cytosine, guanine and thymine, represented by the symbols, A, C, G and T. These bases are attached to a repeating linear chain made up of alternating sugar and phosphate segments. 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 an RNA message or mRNA. The mRNA carries the same sequence as the DNA, except that the DNA base thymine is replaced by uracil, so that the RNA alphabet is A, C, G and U. These messages are taken to the cellular protein factories, called ribosomes, for translation into proteins. These proteins go on to play crucial roles in the structure and function of the cell, including the regulation and execution of transcription and translation. The characterization of these events as a simple multi-step linear process from DNA to RNA to protein has been referred to as the Central Dogma of Molecular Biology and has formed the backbone of classical biology.

The linear process implied by the Central Dogma led to the development of tools that focused on isolated elements of living systems. These tools collect data reflecting averages of isolated events at static points in time, missing many of the complex dynamics and biological contexts critical to a full understanding of biological processes. Therefore, the study of biology is predisposed towards incomplete and deterministic pictures of biological systems.

Based on the Central Dogma, a common expectation developed that once the full genetic code of a human was available, the mechanisms of human biology would be substantially revealed. The International Human Genome Project, designed to map the human genome, took 13 years at a cost of over $3 billion and resulted in only approximately 92% coverage of the genome at its conclusion in 2004. The project resulted in many important insights regarding human biology, including a reduction in the number of estimated genes in the human genome from 100,000 or more to approximately 23,000. The data analysis techniques available at the time were able to identify single-nucleotide polymorphisms, or SNPs, places in the genome where individuals commonly differ by a single letter. This resulted in a view that there is a “reference genome” approximating all humans, with SNPs representing the dominant source of genetic variation. This view fostered an expectation that a new era of diagnosing and treating disease would emerge.

However, this promise has not been delivered due to our incomplete understanding of biological mechanisms underlying human disease. With the expectation that knowledge of the genome would guide the process towards safe and effective drugs, the pharmaceutical industry has spent billions of dollars on high-throughput screening of potential drug compounds without a significant increase in research productivity. Today, biological science remains largely unable to effectively determine which proteins should be targeted in order to treat disease.

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.

The genomics research community has realized that a single reference sequence is not sufficient to decipher the inner workings of life. This led to a new type of study, commonly called genome-wide association studies, or GWAS, in which the genomes of large numbers of individuals are checked at known SNPs, and these findings are correlated with specific conditions, such as disease. While these studies have advanced our general understanding, in most cases they have not improved diagnosis and treatment as hoped. The correlations found by these methods are generally not large enough to be useful in detecting or treating human disease. Further, the research community has developed a deeper appreciation for the importance of additional sources of genomic variation, including chemical, structural and functional genomic modifications.

Future Biology

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 GWAS 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.

Differences between genomes at different positions can be highly interactive, for example, a mutation that increases lifetime risk of cancer in one genomic context may decrease risk in another context. While the two copies of the 23 chromosomes we inherit from our parents are enormously important in determining who we are, our genomes continue to change as we age. Understanding the genetic makeup of an individual, including mutations that take place after conception, is key to understanding and treating diseases. For example, the genomes of cells within a particular individual's tumor may show significant variation from one cell to the next and from one time-point to the next.

Recent discoveries have highlighted additional complexities in the building blocks of DNA (A, C, G and T) and RNA (A, C, G and U), including the presence of additional bases. It has long been known that in humans and many other multicellular organisms the C 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.

It is now understood that the role of RNA as detailed in the Central Dogma requires significant revision. The RNA components of the cell, which were originally thought only to relate to the production of proteins, are now known to play important regulatory roles. Numerous functional elements have been identified and located in regions far from any protein-coding sequence, many with no indications of how they might function. Not surprisingly, significant discrepancies have been found between the levels of mRNAs and the levels of the proteins for which they code. This is caused by regulation of the translation process that takes place after the mRNA is made. For example, binding of short RNA segments called micro-RNAs or miRNAs to mRNA have been shown to inhibit translation of their mRNA target.

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 comprising 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, these 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. The ability to use sequence-based information is contingent not only on assembly, but the accuracy of the assembled sequence. There are two principal forms of accuracy that are commonly cited, referred to as raw read accuracy and finished or consensus accuracy. The former can be a platform specific performance metric while consensus accuracy is critical to successful reassembly.

First Generation Sequencing

First generation sequencing, also called “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. This 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 addition to introducing errors in the sequence, the process of amplification increases the complexity and time associated with sample preparation.

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

We have developed a technology platform that enables single molecule, real-time, or SMRT, detection of biological processes. Our SMRT technology harnesses the natural activity of key enzymes involved in the synthesis and regulation of biomolecules including DNA, RNA and protein. 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, including short readlengths, limited flexibility, long time to result, lower throughput, complex sample preparation and risk of amplification bias, and may also enable other types of biological research, including kinetic detection, RNA transcription monitoring, RNA sequencing, protein translation and ligand binding. We refer to this new paradigm of study as SMRT Biology.

Pacific Biosciences' SMRT Technology

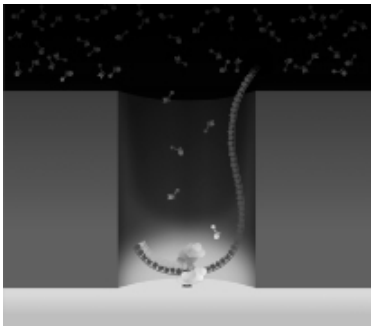
Our SMRT technology harnesses the natural process of DNA replication, which in nature is a highly efficient and accurate process. The enzyme responsible for replicating DNA in nature is called the DNA polymerase. The DNA polymerase attaches itself to a strand of DNA to be replicated, examines the individual 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.

Our SMRT technology enables the observation of DNA synthesis as it occurs in real time. To overcome the challenges inherent in observing an enzyme that is 15 nanometers, or nm, in diameter running in real time, we developed 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 applied the same principle that operates in the metallic screen of a microwave oven door. In a microwave oven, the screen is perforated with holes that are much smaller than the wavelength of the microwaves. Because of their relative size, the holes prevent the much longer microwaves from passing through and penetrating the glass. However, the much smaller wavelength visible light is able to pass through the holes in the screen, allowing food to be visible. We have reduced this same principle to the nanoscale and we call our innovation a zero-mode waveguide, or ZMW.



A ZMW is a hole, tens of nanometers in diameter, fabricated in a 100nm metal film deposited on a glass substrate. 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 exponentially decays as it enters the ZMW. Therefore, by shining a laser through the glass 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 glass surface 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. Diffusion at the nanoscale is incredibly fast. Within microseconds, labeled nucleotides

travel down into the ZMW, surround the DNA polymerase, then diffuse back up and exit the hole. 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 75,000 ZMWs. Each ZMW is capable of containing a DNA polymerase loaded with a different strand of DNA sample. As a result, the SMRT Cell enables the potential detection of approximately 75,000 single molecule sequencing reactions in parallel. Currently, our immobilization process randomly distributes polymerases into ZMWs across the SMRT Cell, resulting in only approximately one-third of the ZMWs being available for use.

Phospholinked Nucleotides

Previous labeling technologies for nucleotides attach a fluorescent label to the base of the nucleotide, which is incorporated into the DNA strand. This is problematic for any system attempting to observe DNA synthesis in real time because the dye's large size relative to the DNA can interfere with the activity of the DNA polymerase. In second generation sequencing, a DNA polymerase can incorporate only a few base-labeled nucleotides before it halts. 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.

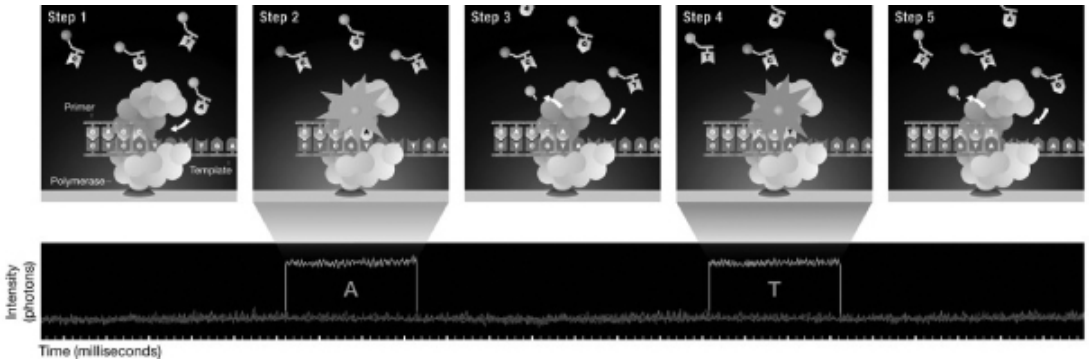
The PacBio RS

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.

Putting the Three Innovations Together

Our three innovative technologies work together to allow researchers to sequence long reads of DNA in minutes. As discussed above, the DNA polymerase is immobilized on the floor of the ZMW. Phospholinked nucleotides are introduced into the SMRT Cell from above. As the phospholinked nucleotides diffuse through the bottom 30nm of each ZMW in the SMRT Cell, the PacBio *RS* detects the presence of free nucleotides as low intensity flashes of light. When the DNA polymerase encounters the nucleotide complementary to the next base in the template, it is incorporated into the growing DNA chain. During incorporation, the DNA polymerase holds the nucleotide for tens of milliseconds, orders of magnitude longer than the average diffusing nucleotide. While held by the polymerase, the fluorescent label emits colored light. The PacBio *RS* detects this as a higher intensity flash of light whose color corresponds to the base identity, which is recorded. Upon incorporation, the fluorescent label is cleaved and the signal immediately returns to baseline and the process repeats, with the DNA polymerase continuing to incorporate multiple bases per second.

SMRT Sequencing



The top graphic is an illustration of DNA sequencing. The bottom graphic represents the output of the PacBio *RS* identifying the incorporation of nucleotides in a growing DNA strand.

Step 1: As nucleotides diffuse into the ZMW, low intensity flashes of light are generated.

Step 2: When the DNA polymerase encounters the nucleotide complementary to the next base in the template, the DNA polymerase holds the nucleotide for tens of milliseconds and the fluorescent label emits a higher intensity flash of light whose color corresponds to the base identity, which is recorded as an A in the graphics above.

Step 3: Upon incorporation of the nucleotide, the fluorescent label is cleaved and signal returns to baseline.

Step 4: The process repeats, and in this illustrative example the nucleotide being incorporated is a T.

Step 5: Following incorporation of the next nucleotide, the next fluorescent label is cleaved and signal returns to baseline again.

SMRT Sequencing Advantages

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

- ***Single molecule, real-time analysis.*** SMRT technology harnesses the power of the DNA polymerase to enable single molecule, real-time sequencing. 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. In addition, our platform does not require the routine PCR amplification needed by most second generation sequencing systems thereby avoiding systematic amplification bias.
- ***Longer readlengths.*** Our SMRT technology is designed to produce a distribution of readlengths with greater than 1,000 base pairs on average and instances of over 10,000 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. Most second generation technologies require higher coverage to compensate for short readlengths. However, even with high coverage, short readlengths are difficult to assemble, especially in highly repetitive areas of the genome. In addition, 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 as observed in cancer. We believe that the long readlengths produced by our SMRT technology may allow insights into biology that are not possible with existing technologies.
- ***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. This speed enables the research community to ask and answer questions much faster than with existing technologies which often 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.

- ***Ease of use.*** We believe that our system is 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. It can be used with a variety of sample types and can output a range of DNA lengths. Sample preparation processes for second generation technology often involve costly additional capital equipment, reagents, supplies and physical space. This process can take multiple days. 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 will allow for easy training and rapid adoption at customer sites.
- ***Flexibility and granularity.*** The PacBio *RS* system offers multiple protocols, including standard, circular consensus and strobe sequencing, enabling the user to optimize performance based on the needs for a particular project. The system also has the ability to scale the throughput and cost of sequencing across a range of small and large projects. We call this granularity, and it results from our flexible consumables format. The ability to run a single SMRT Cell, or batch multiple SMRT Cells in a single run, provides flexibility in experiment design and implementation.
- ***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 presence or absence of a methyl group can determine whether or not a gene is expressed in a particular cell, tissue or organism. The impact of such chemical modification of DNA on the expression of genes has been hypothesized to play a role in many diseases, including cancer. Importantly, it has been shown that changes in kinetics which can be detected automatically by the PacBio *RS*, may reflect the presence of DNA methylation.

Our Products

We are preparing to enter 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 will 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 changes to the hardware.

The PacBio *RS* is compatible with existing customer infrastructure, from sample preparation to biological results and analysis. This includes our SMRTbell sample preparation protocol, remote experimental management, touchscreen instrument operation, integration with preferred IT infrastructures and backwards-compatibility with existing informatics pipelines. Together, this results in quick system setup times, fast scaling to multi-unit configurations and short turnover time between experiments. We believe these factors will result in a new paradigm for sequencing experiments from days and weeks to minutes and hours.

Our sequencing system includes the PacBio *RS* instrument and proprietary consumables, including 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 robotics perform reagent mixing and prepare

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 the secondary processing of the sequencing data being produced on the SMRT Cells. For a description of the process from sample preparation to sequencing results using the PacBio *RS*, see "—Using the PacBio *RS*" below. The PacBio *RS* has been designed to allow for performance improvements without an upgrade or replacement of the instrument hardware. These performance enhancements will be delivered through software upgrades and new consumables. A comprehensive informatics tools suite that enables users to generate finished sequence data is also included. The list price for the PacBio *RS* will be $695,000 in the United States.

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 three 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.

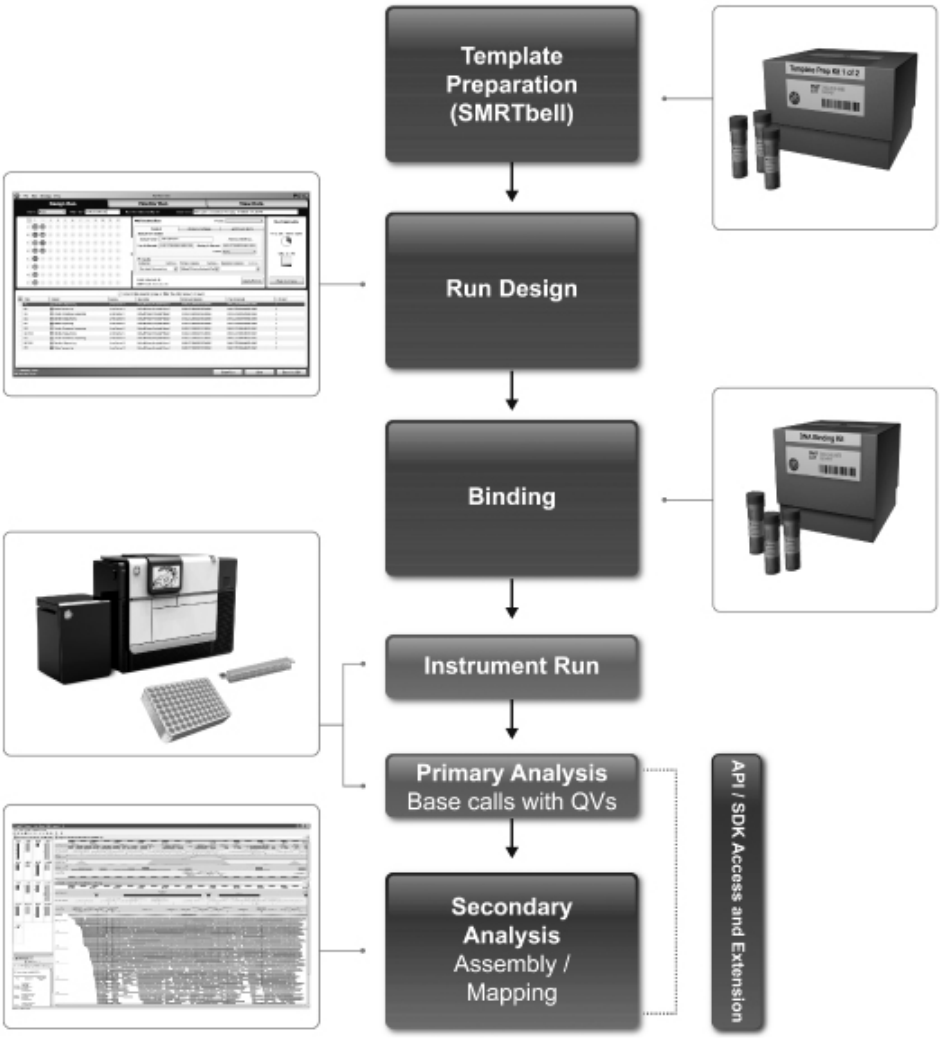
Using the PacBio RS

The PacBio *RS* delivers a complete product solution from sample preparation to biological results. The instrument has the capability for multiple sequencing protocols, enabling a high degree of flexibility in experimental design.

- ***Standard sequencing.*** The standard SMRT sequencing protocol is designed to generate single pass long reads. The protocol uses long insert lengths so that the polymerase can continuously synthesize along a single strand. As with all protocols, this process runs in parallel across thousands of ZMWs in a single SMRT Cell at the same time. This protocol has utility for a range of both resequencing and *de novo* applications. Our system achieves consensus accuracy of 99.99% which is commensurate with leading second generation sequencing systems.
- ***Circular consensus sequencing.*** The PacBio *RS* has the capability for circular consensus sequencing. The circular consensus sequencing protocol uses a circular DNA template which enables multiple reads across the same sequence to achieve 99.99% accuracy at single molecule resolution from a single DNA strand. Furthermore, this approach provides reads on both the forward and reverse strands of a double stranded template. This method offers potential advantages for the discovery and confirmation of rare variants.
- ***Strobe sequencing.*** The PacBio *RS* also has the capability for strobe sequencing. Using this protocol, the physical coverage and effective readlength of the system can be increased by "strobing" the illumination on and off. When the illumination is on, sequence data is collected, but when the illumination is off, the polymerase continues to synthesize in the dark at a predictable speed for thousands of bases. After a user-defined interval, the illumination can be turned back on and the system can resume collecting data. Multiple sub-reads at varying sequence advance lengths can be generated from a single molecule. The length of the strobe sub-reads and advances can be controlled dynamically as a run parameter, thereby eliminating the need to create multiple libraries of different sizes. This method will be useful for scaffolding, or mapping a series of short fragments on a longer DNA strand, genomic assembly and identifying and resolving structural variation.

- ***Combining sequencing modes.*** The system's flexibility also offers the ability to approach a problem in multiple ways. For example, users may first want to scaffold the sequence using the strobe sequencing protocol, then generate long linear single molecule reads, and finally, apply circular consensus sequencing to identify rare sequence variants.

The PacBio *RS* requires limited manual intervention. The illustration below outlines the flow of the process from sample preparation to sequencing results.



The sample preparation protocol employs simple, standard molecular biology techniques and can be completed in hours. The same protocol can be used with a variety of sample types and can generate a range of library sizes. The Template Preparation Kit is used to convert DNA into our SMRTbell library format. The Binding Kit is then used to bind this library to the polymerase in preparation for sequencing.

Customers design, manage and monitor experiments from their desktop. This experimental information can be integrated with internal laboratory information management systems, or LIMS, or other tracking systems.

Instrument operation occurs through a touchscreen interface, *RS* Touch, and requires minimal user intervention. The instrument is both an automated liquid handling and detection platform. Customers load SMRT Cells and the sequencing kit components directly into two drawers on the instrument, from which point dispensing and handling are automated by the robotic station. Barcode tracking provides efficient management of samples and reagents.

Once the sequencing reaction has been initiated, the high performance optics monitor the thousands of ZMWs in real time. Throughout the sequencing process, the *RS* Touch provides feedback on the status of the PacBio *RS*, its contents and the experimental progress.

Concurrent with the sequencing process, base calling and quality assessment are performed through the Blade Center, the computational brain of the PacBio *RS*. Primary analysis data can be streamed directly to the secondary analysis system as well as visualized. Secondary analysis provides data-rich reports for the user, including informative quality and application-specific metrics. Users can then interact visually with the data at all relevant levels, from the genome view to individual SNPs.

We are committed to providing users with access to the right types of high-performance computing environments to not only store and organize the data, but to also interact with and analyze the data on different levels. These informatics solutions are designed to efficiently integrate with on-premises or cloud-based LIMS systems making these solutions accessible not only to high-end informatics researchers, but also to biologists and clinicians.

Developer tools enable seamless integration with existing bioinformatics pipelines. All data files are directly accessible, giving the user flexibility to perform further analysis through third-party software or share data with collaborators. To maximize the flexibility and functionality for all users, all of the secondary analysis algorithms are open source.

Market Opportunity

Despite the limitations of currently available sequencing platforms, the market for sequencing products is large and is expected to grow significantly. In 2009, the sequencing market was estimated to be $1.2 billion, which is comprised of $600 million and $600 million for first and second generation sequencing, respectively, and is expected to grow to more than $3.6 billion by 2014 according to Scientia Advisors, a life sciences consulting firm. The growth in this market is expected to be driven by increases in the demand for sequencing products from both research institutions and commercial companies, including academic institutions, reference labs and genomics service providers, pharmaceutical companies and agriculture biology, or AgBio, companies.

The primary areas of market growth are expected to be genomics, increasing from approximately $700 million in 2009 to $1.9 billion by 2014, and AgBio, increasing from approximately $200 million in 2009 to $1.3 billion by 2014. 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 accelerate 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.

Pacific Biosciences' Strategy

We plan to execute the following strategy:

- ***Define the future of biological analysis based on SMRT technology.*** Our SMRT technology provides a window into biological processes that has not previously been available. We have and will continue to communicate the benefits and advantages of our SMRT technology platform through our commercial and marketing activities. In addition, we will continue to pursue publication of

biological insights using our SMRT technology in top-tier scientific, peer-reviewed journals. For example, a recent publication in Nature demonstrated the broad applicability of the SMRT detection technology by enabling new, high resolution insights into ribosome function and composition during translation at physiological concentrations of transfer RNAs. We plan to continue to develop the applications of our SMRT technology in the fields of DNA, RNA and protein biology.

- ***Focus initially on the DNA sequencing market.*** We will initially sell our products into the rapidly growing DNA sequencing market. 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 believe that the introduction of the PacBio *RS* will expand the market for genetic analysis tools. Customers that have placed orders for our products include research institutions and commercial companies that plan to use the PacBio *RS* for clinical, basic and agricultural research, drug discovery and development, biosecurity and bio-fuels. Our customers are also interested in a number of other potential applications, including molecular diagnostics, food safety and forensics, which may require us to enhance the capabilities of our current products or develop additional products.
- ***Continually enhance product performance to increase market share.*** The design of the PacBio *RS* will allow for significant performance improvements without an upgrade or replacement of the instrument hardware. These performance enhancements will be delivered through software upgrades and new consumables. 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. We believe that our ability to offer performance improvements without requiring new hardware investment by our customers will increase the attractiveness of our products.
- ***Leverage platform to develop and launch additional applications.*** We plan to leverage our SMRT technology platform to develop new applications targeting kinetic detection, RNA transcription monitoring, RNA sequencing, protein translation and ligand binding. We believe these applications will 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 software developer's open network 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 the secondary analysis algorithms are open source.

Future Commercial Applications

We believe that the power of SMRT detection extends beyond DNA sequencing to the detection and characterization of other fundamental biological functions. The ability of the SMRT technology to observe kinetic information of individual molecules provides the ability to detect nucleic acid variations, including detection of base modifications and the detection of binding of biomolecules to DNA. SMRT detection has been applied by researchers to directly observe, on a single molecule basis, transcription, reverse transcription, translation and ligand binding. Although these applications will not be available at the commercial launch of the PacBio *RS*, we plan to further develop them and, if successful, we may commercially introduce them in the future.

SMRT Kinetic Detection. SMRT analysis enables the observation of the kinetics of DNA and RNA synthesis. Kinetic analysis may permit detection of base modifications in DNA and RNA beyond simple methylation. These modifications, which are hypothesized to play an important role in diseases such as cancer,

have not been systematically studied due to a lack of efficient tools. The analysis of synthesis kinetics is not limited to studies of molecular structure, but is also applicable to the detection of inter-molecular interactions, for example, detecting kinetic impacts of protein-DNA interactions. Both of these applications of the SMRT platform may have important applications in disease characterization, diagnosis and treatment.

SMRT Transcription. By replacing the DNA polymerase with an RNA polymerase, SMRT detection provides the ability to directly observe in real time the regulation of transcription of a gene into an RNA message, the first phase of protein expression. The combined power of direct observation of transcription and the sequence context that SMRT sequencing provides has the potential to replace present transcription assays and enable transcription analysis on a whole genome scale. It is possible that this process plays a role in diseases, such as cancer.

SMRT RNA Sequencing. By replacing the DNA polymerase with a reverse transcriptase in the ZMW, SMRT detection provides the ability to directly sequence RNA and observe kinetic data similar to that seen with DNA sequencing. Directly sequencing RNA may provide advantages over traditional methods including speed, longer readlengths and reduced errors into the determined sequence.

SMRT Translation. We have demonstrated the ability to observe protein translation in real time at the single molecule level by placing the ribosomal complex into the ZMW and attaching fluorescent tags to the molecules that escort the amino acids to the ribosome for protein production. It is understood that the levels of mRNA do not always correlate with the amounts of the corresponding proteins, due in part to RNA regulatory mechanisms such as miRNA binding. For this reason it is desirable to measure the levels of the many proteins as synthesized by the ribosome. As proteins represent an important target for therapeutics, understanding the dynamics of protein synthesis may be important for future drug discoveries.

SMRT Ligand Binding. The interaction between ligands, including drugs and their respective biological targets, referred to as ligand binding, is an important facet of basic science. Most current ligand binding analysis techniques detect average interactions over large populations of molecules and do not detect changes in the interactions in real time. This results in an inability to detect weak interactions, or detect multi-body interactions where individual components can be interacting on a transient basis. Because it detects individual molecular interactions, we believe the SMRT detection system can probe binding interactions that are far weaker than those detected by other techniques. Further, because of its real-time observation, it can detect binding events lasting only a few milliseconds. Given the importance of ligand binding to the drug discovery process and other potential commercial applications, this new application may offer significant advantages over traditional methods.

Marketing and Sales

We market our products through a direct sales force in North America and the United Kingdom. Our sales strategy involves the use of a combination of sales managers, sales representatives and field application specialists. As of June 30, 2010, we had six sales managers and sales representatives and five field application specialists. We expect to increase our sales force as we expand our business.

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, including four with PhDs, and generally have extensive experience in academic research and core sequencing lab experience.

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

We are targeting customers that 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 AgBio companies may have DNA samples isolated from different strains of corn or other crops.

We instituted a limited production release program pursuant to which we received orders for eleven limited production release instruments from entities such as genome centers, clinical, government and academic institutions and agricultural companies. This program was designed to help us garner quality feedback on the product prior to our full commercial launch scheduled for early 2011. We received orders for our limited production release instrument from Baylor College of Medicine, the Broad Institute of MIT and Harvard, Cold Spring Harbor Laboratory, the U.S. Department of Energy Joint Genome Institute, The Genome Center at Washington University, Monsanto Company, the National Cancer Institute/SAIC-Frederick, the National Center for Genome Resources, the Ontario Institute for Cancer Research, Stanford University and Wellcome Trust Sanger Institute. As of September 15, 2010, we have shipped a total of seven PacBio *RS* limited production release instruments, and we intend to ship the remaining four later this year. Limited production release instruments are designed to provide early access to the technology, while we complete the research, development and testing required for full commercial release. Therefore, performance during the limited production release phase will not be equal to that of the system at commercial release. There will be a continuous evolution of these performance variables, including readlength and throughput, during the limited production release phase as we develop new versions of our software and consumables. During a testing period, which we expect to last at least through the end of 2010, we will be working with these customers to obtain feedback and plan to incorporate relevant improvements into the commercial release version of the PacBio *RS*. Generally, each customer is obligated to pay us a deposit after accepting a limited production release instrument, and is entitled to receive an upgrade to a commercial release version of the PacBio *RS*, at which time each customer will be obligated to pay the balance of their order and we will then recognize revenue. While we expect to deliver upgrades to all of these customers, we cannot provide assurance that we will succeed and recognize revenue from our limited production release customers.

Backlog

As of June 30, 2010, our backlog was approximately $15 million. 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 deliver all orders in our backlog by December 31, 2011, however we do not expect to recognize revenue on any orders prior to December 31, 2010. Estimating the dollar value of backlog requires significant judgments and estimates. We may never ship these units or receive revenue from these orders, and our backlog may not be indicative of our future revenue. If our orders in backlog do not result in sales, our operating results will suffer.

Manufacturing

Our 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.

The manufacture of our instruments is complex involving a number of separate processes and components. Our manufacturing processes are detailed in written procedures and extensive testing and data collection is performed throughout the process. We have implemented quality control procedures to help assure that our

products meet our specifications. We also use manufacturing process control software to help us ensure key processes are followed with a high degree of integrity.

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 instruments are currently either sole sourced or single sourced.

Service and Support

Service for our instruments is performed by our field service engineers. As of June 30, 2010, we had five field service engineers, and we intend to hire additional field service engineers as we grow our business. 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.

Our instruments are designed with remote diagnostics that generate automated alerts that will allow us to promptly initiate preventive maintenance or repair. We intend to establish an online customer portal and case management system to aid in the technical support of our instruments. We also intend to establish a contact center in each region to handle incoming inquiries via telephone, email or live chat.

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.

Our research and development group is comprised of eight departments, Biochemistry, Organic Chemistry, Surface Chemistry, Nanofabrication, Mechanical/Optical/Electrical Engineering, Software Engineering and Bioinformatics, Systems Integration and Single Molecule Sample Prep and Detection. Combined, these groups are responsible for the research and development of the various technologies needed to supply the basic chemistry components and protocols, reaction cells, instrument platform and the embedded and downstream software that are needed to prepare, process, detect, analyze and interpret single molecule, real-time data. Research and development expense incurred for these activities was $19.2 million, $38.0 million and $75.9 million in 2007, 2008 and 2009, respectively. As of June 30, 2010, we had 208 scientists and engineers in our research and development group of which 146 have advanced degrees including 105 with PhDs.

We will continue to invest in research and development to support the ongoing development of chemistry components and protocols to enhance overall system performance. Our goals are to continuously improve sequencing readlength, raw read accuracy and the number of reactions on each 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, reducing costs, increasing sample throughput 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 by 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, reagents for use in nucleic acid sequencing, including phospholinked nucleotides, and other methods for analyzing biological samples, optical components and systems, processes for identifying nucleotides within nucleic acid sequences and processes for analysis and comparison of nucleic acid sequence data.

As of June 30, 2010, we own or hold exclusive licenses to 47 issued U.S. patents, 118 pending U.S. patent applications, six granted foreign patents and 138 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 17, 2016 and May 9, 2028.

Of these patents and patent applications, 18 issued U.S. patents, six pending U.S. patent applications, one granted foreign patent and five 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 whereby the U.S. Government may disregard our exclusive patent rights under our license from Cornell 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. 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., Oxford Nanopore Technologies Ltd. and Ion Torrent Systems Inc., which recently announced that it had entered into a definitive agreement to be acquired by Life Technologies Corporation.

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

Employees

As of June 30, 2010, we had 369 full-time employees. Of these employees, 208 were in research and development, 88 were in operations and program management, 43 were in sales and marketing and 30 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.

Facilities

Our corporate headquarters and manufacturing facilities are located in Menlo Park, California where we lease approximately 147,000 square feet of office, lab and manufacturing space. The schedule below summarizes our facilities as of September 15, 2010. We consider our manufacturing facilities sufficient to meet our current and planned operational requirements. We intend to add new facilities as we add employees and expand our markets, and we believe that suitable additional or substitute space will be available as needed to accommodate any such expansion of our operations.

Size (Square Feet)	Lease Expiration	Functions
30,240	May 2011	Office/Lab
31,560	May 2011	Office/Lab
33,792	July 2015	Office/Training
22,267	September 2013	Manufacturing
29,371	April 2015	Manufacturing

Legal Proceedings

We are presently involved in a patent interference with Life Technologies Corporation, or Life, related to U.S. Patent No. 7,329,492, that was acquired by Life from its acquisition of Visigen Biotechnologies, Inc., and U.S. Patent Application Serial No. 11/459,182, owned by us relating to a particular method for single molecule sequencing. An interference is a phased process whereby the U.S. Patent and Trademark Office, or USPTO, determines which of two patents, or a patent and a patent application, that claim the same or overlapping subject matter, is entitled to the earliest priority date of invention, and thus which patent or patent application is entitled to be issued covering that same or overlapping subject matter. In this interference, it was determined that we are the senior party in the interference based upon an initially accorded priority date prior to that of the Life patent. The first phase concluded on December 1, 2009, when the parties presented oral arguments to the USPTO's Board of Patent Appeals and Interferences, or BPAI. As of July 31, 2010, no decision has yet been rendered by the BPAI on the parties' respective arguments.

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. While we cannot guarantee any outcome of this lawsuit, we intend to defend against these claims and argue that we do not infringe the claims of the asserted patents and that the claims of the asserted patents are invalid and unenforceable.

We are not currently a party to any other material legal proceedings.

MANAGEMENT

Executive Officers and Directors

The following table sets forth the names, ages and positions of our executive officers and directors as of June 30, 2010.

Name	Age	Position
Hugh C. Martin	56	Chairman, Chief Executive Officer and President
Susan K. Barnes	56	Senior Vice President and Chief Financial Officer
Stephen Turner, PhD	42	Chief Technology Officer
Michael Phillips	60	Senior Vice President Research and Development
William Ericson[2]	51	Lead Independent Director
David Baltimore	72	Director
Brook Byers[1][3]	64	Director
Michael Hunkapiller, PhD[2]	61	Director
Randy Livingston[1]	56	Director
Susan Siegel[2][3]	50	Director
David Singer[1][3]	47	Director

(1) Member of our audit committee

(2) Member of our compensation committee

(3) Member of our corporate governance and nominating committee

Executive Officers

Hugh C. Martin has served as our Chairman, Chief Executive Officer, President and a member of our board of directors since joining us in 2004. From 2003 to 2004, Mr. Martin was a chief executive officer coach at Kleiner Perkins Caufield & Byers. From 1998 to 2002, Mr. Martin was chairman, president and chief executive officer of ONI Systems, a high-speed optical telecommunications company he founded. Mr. Martin served on the board of directors of Infinera Corporation from July 2003 to June 2009. We believe that Mr. Martin possesses specific attributes that qualify him to serve as a member of our board of directors, including the perspective and experience he brings as our Chief Executive Officer and his experience as a seasoned executive with a 25-year track record managing companies bringing leading edge technologies to market and managing high growth businesses. Mr. Martin holds a B.S. degree in Electrical Engineering from Rutgers University.

Susan K. Barnes has served as our Senior Vice President and Chief Financial Officer since she joined us in February 2010. From 1997 to 2005, she was senior vice president, finance and chief financial officer of Intuitive Surgical, Inc. Ms. Barnes served on several boards of directors of public and private companies, including Northstar Neuroscience, Inc. from February 2006 to December 2009, where she also served as audit committee chair, and RAE Systems from September 2004 to May 2006, where she served as chair of the audit committee. Ms. Barnes holds an A.B. from Bryn Mawr College and an M.B.A. from the Wharton School, University of Pennsylvania.

Stephen Turner, PhD co-founded Pacific Biosciences in July 2000. Dr. Turner served as our President and Chief Executive Officer from the company's inception until March 2004, when he assumed his current role as our Chief Technology Officer. He served as a member of our board of directors from inception until July 2010. Prior to founding the company Dr. Turner contributed to the establishment of the Nanobiotechnology Center at Cornell University in January 2000. Dr. Turner holds a PhD in Physics from Cornell University. He received B.S. degrees in Applied Mathematics, Electrical Engineering and Physics from the University of Wisconsin, Madison.

Michael Phillips joined Pacific Biosciences in April 2005 as our Vice President of Product Development and since February 2010 has served as our Senior Vice President of Research and Development. Prior to joining

us, Mr. Phillips held various management roles at Applied Biosystems spanning research and development, test, manufacturing operations and service support from 1986 to April 2005. His most recent position at Applied Biosystems was Director of Research and Development. Mr. Phillips earned a B.S. degree in Bacteriology from the University of California, Davis.

Directors

William Ericson has been a member of our board of directors since 2004 and has been appointed our Lead Independent Director. Mr. Ericson is a Managing Partner at Mohr Davidow Ventures, or MDV, a venture capital firm. He joined Mohr Davidow Ventures in 2000 after more than a decade of working closely with entrepreneurs to start and build innovative businesses in the role of lawyer, board member, entrepreneur and investor, and has led MDV's focus on personalized medicine investing since 2003 . We believe that Mr. Ericson possesses specific attributes that qualify him to serve as a member of our board of directors, including his experience with multiple companies in the life sciences industry and his focus on companies with molecular diagnostic platforms that will enable the vision of personalized medicine. Mr. Ericson holds a B.S.F.S. from Georgetown University of Foreign Service and J.D. from Northwestern University School of Law.

David Baltimore, PhD has been a member of our board since September 2010. Since 2006, he has been President Emeritus and the Robert Andrews Millikan Professor of Biology at the California Institute of Technology, or Caltech. From 1997 to 2006, Dr. Baltimore served as President of Caltech. Prior to joining Caltech, Dr. Baltimore was a professor at the Massachusetts Institute of Technology, or MIT, and at The Rockefeller University where he also served as the President. He received the Nobel Prize in Medicine as a co-recipient in 1975 and the National Medal of Science in 1999. Dr. Baltimore is a member of the U.S. National Academy of Sciences as well as a member of the Royal Society of London and the French Academy of Sciences. Dr. Baltimore has served as a director of Amgen Inc. since 1999 and BB Biotech, AG since 2004. Dr. Baltimore was also a director of MedImmune, Inc. from 2003 to 2007. We believe that Dr. Baltimore possesses specific attributes that qualify him to serve as a member of our board of directors, including his extensive scientific knowledge and leadership positions at highly regarded research institutions. Dr. Baltimore holds a B.A. in Chemistry from Swarthmore College, a PhD from Rockefeller University and was a post-doctoral fellow at MIT and Albert Einstein College of Medicine.

Brook Byers has been a member of our board of directors since 2004. Mr. Byers has been a venture capital investor since 1972 and is a Managing Partner of Kleiner Perkins Caufield & Byers. He has been closely involved with more than 50 new technology-based ventures, many of which have already become public companies. He formed the first life sciences practice group in the venture capital profession in 1984 and led Kleiner Perkins Caufield & Byers to become a premier venture capital firm in the medical, healthcare and biotechnology sectors. Currently, Mr. Byers serves on the board of directors of Genomic Health, Inc. and seven private companies. We believe that Mr. Byers possesses specific attributes that qualify him to serve as a member of our board of directors, including his experience with growing multiple companies in the life sciences industry and his leadership in personalized medicine initiatives. Mr. Byers holds a B.S. degree in Electrical Engineering from the Georgia Institute of Technology and an M.B.A from Stanford University.

Michael Hunkapiller, PhD has been a member of our board of directors since 2005. Since November 2004, Dr. Hunkapiller has been a General Partner at Alloy Ventures, or Alloy, a venture capital firm. Prior to Alloy, Dr. Hunkapiller spent 21 years at Applied Biosystems. At Applied Biosystems, he held various positions, most recently serving as president and general manager. We believe that Dr. Hunkapiller possesses specific attributes that qualify him to serve as a member of our board of directors, including his experience at Applied Biosystems, where he helped grow the company from a startup to a public company with almost $2 billion in annual revenue, leading groundbreaking innovations, including the development of the automated DNA sequencing systems used to sequence the human genome. He is member of the National Academy of Engineering. Dr. Hunkapiller holds a PhD in Chemical Biology from the California Institute of Technology and a B.S. in Chemistry from Oklahoma Baptist University.

Randy Livingston has been a member of our board of directors since 2009. He has served as Vice President for Business Affairs and Chief Financial Officer of Stanford University since March 2001. Before joining Stanford, Mr. Livingston served as the executive vice president, chief financial officer and a director of OpenTV Corp. from 1999 to 2001. Before joining OpenTV in 1999, Mr. Livingston served as a consultant and part-time chief financial officer for Silicon Valley technology companies with such diverse specialties as genomics, Internet commerce, medical devices, chemical synthesis and enterprise software. Previously, he was director of corporate development at Apple Computer and chief financial officer for Taligent, a 400-employee Apple-IBM-Hewlett-Packard joint venture system software company. Mr. Livingston currently serves as a director of Genomic Health, Inc. and eHealth, Inc. We believe that Mr. Livingston possesses specific attributes that qualify him to serve as a member of our board of directors, including his executive experience and his financial and accounting expertise with public companies. Mr. Livingston holds a B.S. in Mechanical Engineering and an M.B.A. from Stanford University.

Susan Siegel has been a member of our board of directors since 2006. Since March 2007 she has been a General Partner at Mohr Davidow Ventures, a venture capital firm, where she leads investments in life sciences, healthcare and personalized medicine. Prior to joining MDV, Ms. Siegel was at Affymetrix, Inc. from April 1998 to April 2006. Ms. Siegel served as Affymetrix's Senior Vice President of Sales and Marketing until 1999 when she became President and in 2000 a member of the board of directors. We believe that Ms. Siegel possesses specific attributes that qualify her to serve as a member of our board of directors, including her experience of growing biotechnology companies for nearly 25 years by bringing key enabling technologies to the forefront of biomedical research and healthcare. Ms. Siegel holds a B.S. in Biology from the University of Puerto Rico and a M.S. in Biochemistry and Molecular Biology from Boston University Medical School.

David Singer has been a member of our board of directors since 2006. Since 2004 Mr. Singer has been a Limited Partner at Maverick Capital Ltd., a private investment firm, where he is responsible for the firm's private investments globally. Previously Mr. Singer was an entrepreneur, acting as the founding President and Chief Executive Officer of three healthcare companies, including Affymetrix, Inc. He currently serves on a number of private company boards and previously served on the board of directors of Affymetrix from 1993 to June 2008, Concept Therapeutics from 1998 to June 2008, and Oscient Pharmaceuticals from February 2004 to June 2006, and has served as the senior financial officer of two publicly traded companies. We believe that Mr. Singer possesses specific attributes that qualify him to serve as a member of our board of directors, including his executive experience and his financial and accounting experience with both public and private companies. Mr. Singer holds a B.A. from Yale University and an M.B.A. from Stanford University.

Board Composition

Our board of directors is currently composed of eight members. Six of our directors have been determined to be independent within the meaning of the independent director guidelines of The NASDAQ Stock Market. Immediately prior to this offering, our board of directors will be divided into three staggered classes of directors. At each annual meeting of stockholders, a class of directors will be elected for a three-year term to succeed the same class whose terms are then expiring. The terms of the directors will expire upon the election and qualification of successor directors at the annual meeting of stockholders to be held during the years 2011 for the Class I directors, 2012 for the Class II directors and 2013 for the Class III directors.

- Our Class I directors will be Hugh Martin, Brook Byers and Susan Siegel.
- Our Class II directors will be Michael Hunkapiller, Randy Livingston and David Baltimore .
- Our Class III directors will be William Ericson and David Singer.

Our amended and restated certificate of incorporation and bylaws provide that the number of our directors shall be fixed from time to time by a resolution of the majority of our board of directors. Each officer serves at the discretion of the board of directors and holds office until his successor is duly elected and qualified or until his or her earlier resignation or removal. There are no family relationships among any of our directors or executive officers.

The division of our board of directors into three classes with staggered three-year terms may delay or prevent a change of our management or a change of control. See "Description of Capital Stock — Anti-Takeover Effects of Delaware Law and Our Amended and Restated Certificate of Incorporation and Bylaws" for a discussion of other anti-takeover provisions found in our amended and restated certificate of incorporation and bylaws.

Director Independence

Upon the closing of this offering, our common stock will be listed on The NASDAQ Global Market. Under the rules of The NASDAQ Stock Market, independent directors must comprise a majority of a listed company's board of directors within a specified period of the closing of its initial offering. In addition, the rules of The NASDAQ Stock Market require that, subject to specified exceptions, each member of a listed company's audit, compensation and corporate governance and nominating committees be independent. Audit committee members must also satisfy the independence criteria set forth in Rule 10A-3 under the Securities Exchange Act of 1934, as amended. Under the rules of The NASDAQ Stock Market, a director will only qualify as an "independent director" if, in the opinion of that company's board of directors, that person does not have a relationship that would interfere with the exercise of independent judgment in carrying out the responsibilities of a director.

In order to be considered to be independent for purposes of Rule 10A-3, a member of an audit committee of a listed company may not, other than in his or her capacity as a member of the audit committee, the board of directors or any other board committee: (1) accept, directly or indirectly, any consulting, advisory or other compensatory fee from the listed company or any of its subsidiaries; or (2) be an affiliated person of the listed company or any of its subsidiaries.

In July 2010, our board of directors undertook a review of its composition, the composition of its committees and the independence of each director. Based upon information requested from and provided by each director concerning his or her background, employment and affiliations, including family relationships, our board of directors has determined that none of Messrs. Byers, Ericson, Livingston and Singer, Dr. Hunkapiller and Ms. Siegel, representing six of our seven directors at that time, has a relationship that would interfere with the exercise of independent judgment in carrying out the responsibilities of a director and that each of these directors is "independent" as that term is defined under the rules of The NASDAQ Stock Market. Our board of directors also determined that Messrs. Byers, Livingston and Singer, who comprise our audit committee, Mr. Ericson, Dr. Hunkapiller and Ms. Siegel, who comprise our compensation committee, and Messrs. Byers and Singer and Ms. Siegel, who comprise our nominating and corporate governance committee, satisfy the independence standards for those committees established by applicable SEC rules and the rules of The NASDAQ Stock Market. In making this determination, our board of directors considered the relationships that each non-employee director has with our company and all other facts and circumstances our board of directors deemed relevant in determining their independence, including the beneficial ownership of our capital stock by each non-employee director.

Board Committees

Our board of directors has an audit committee, a compensation committee and a corporate governance and nominating committee, each of which has the composition and the responsibilities described below. The audit committee, compensation committee and corporate governance and nominating committee all operate under charters approved by our board of directors, which charters will be available on our website upon the closing of this offering.

Audit Committee. Our audit committee oversees our corporate accounting and financial reporting process and assists the board of directors in monitoring our financial systems and our legal and regulatory compliance. Our audit committee is responsible for, among other things:

- selecting and hiring our independent auditors;
- appointing, compensating and overseeing the work of our independent auditors;

- approving engagements of the independent auditors to render any audit or permissible non-audit services;
- reviewing the qualifications and independence of the independent auditors;
- monitoring the rotation of partners of the independent auditors on our engagement team as required by law;
- reviewing our financial statements and reviewing our critical accounting policies and estimates;
- reviewing the adequacy and effectiveness of our internal controls over financial reporting; and
- reviewing and discussing with management and the independent auditors the results of our annual audit, our quarterly financial statements and our publicly filed reports.

The members of our audit committee are Messrs. Byers, Livingston and Singer. Mr. Livingston is our audit committee chairman and was appointed to our audit committee on September 1, 2009. Our board of directors has determined that each member of the audit committee meets the financial literacy requirements under the rules of The NASDAQ Stock Market and the SEC and each of Messrs. Livingston and Singer qualifies as our audit committee financial experts as defined under SEC rules and regulations. Our board of directors has concluded that the composition of our audit committee meets the requirements for independence under the current requirements of The NASDAQ Stock Market and SEC rules and regulations. We believe that the functioning of our audit committee complies with the applicable requirements of The NASDAQ Stock Market and SEC rules and regulations.

Compensation Committee. Our compensation committee oversees our corporate compensation policies, plans and programs. The compensation committee is responsible for, among other things:

- reviewing and recommending policies, plans and programs relating to compensation and benefits of our directors, officers and employees;
- reviewing and recommending compensation and the corporate goals and objectives relevant to compensation of our Chief Executive Officer;
- reviewing and approving compensation and corporate goals and objectives relevant to compensation for executive officers other than our Chief Executive Officer;
- evaluating the performance of our executive officers in light of established goals and objectives;
- developing in consultation with our board of directors and periodically reviewing a succession plan for our Chief Executive Officer; and
- administering our equity compensations plans for our employees and directors.

The members of our compensation committee are Mr. Ericson, Dr. Hunkapiller and Ms. Siegel. Mr. Ericson is the chairman of our compensation committee. Our board of directors has determined that each member of our compensation committee is independent within the meaning of the independent director guidelines of The NASDAQ Stock Market. We believe that the composition of our compensation committee meets the requirements for independence under, and the functioning of our compensation committee complies with, any applicable requirements of The NASDAQ Stock Market and SEC rules and regulations.

Our compensation committee and our board of directors have approved a succession plan for our Chief Executive Officer.

Corporate Governance and Nominating Committee. Our corporate governance and nominating committee oversees and assists our board of directors in reviewing and recommending corporate governance policies and nominees for election to our board of directors. The corporate governance and nominating committee is responsible for, among other things:

- evaluating and making recommendations regarding the organization and governance of the board of directors and its committees;

- assessing the performance of members of the board of directors and making recommendations regarding committee and chair assignments;
- recommending desired qualifications for board of directors membership and conducting searches for potential members of the board of directors; and
- reviewing and making recommendations with regard to our corporate governance guidelines.

The members of our corporate governance and nominating committee are Messrs. Byers and Singer and Ms. Siegel. Mr. Singer is the chairman of our corporate governance and nominating committee. Our board of directors has determined that each member of our corporate governance and nominating committee is independent within the meaning of the independent director guidelines of The NASDAQ Stock Market.

Our board of directors may from time to time establish other committees.

Director Compensation

The following table sets forth information concerning compensation paid or accrued for services rendered to us by members of our board of directors for the fiscal year ended December 31, 2009. The table excludes Mr. Martin and Dr. Turner, who are named executive officers and did not receive director compensation in the fiscal year ended December 31, 2009.

Name	Fees earned or paid in cash ($)	Option awards ($)[1][3]	Total ($)
Brook Byers	—	—	—
William Ericson	—	—	—
Michael Hunkapiller, PhD	—	—	—
Susan Siegel	—	—	—
David Singer	—	—	—
Randy Livingston	17,500	105,600[2]	123,100

(1) Amounts shown represent the aggregate grant date fair value of the option awards computed in accordance with FASB Topic ASC 718. These amounts do not correspond to the actual value that will be recognized by the directors. The assumptions used in the valuation of these awards are consistent with the valuation methodologies specified in the notes to our financial statements.

(2) Mr. Livingston was granted an option on July 24, 2009 to purchase up to 80,000 shares of our common stock at a price per share of $2.82. The option vests beginning on July 24, 2009 and vests as to 1/4th of the shares subject to the option after one year of the option commencement date, and as to 1/48th of the shares subject to the option per month for the subsequent three years, subject to Mr. Livingston's continued service through each vesting date.

(3) The aggregate number of shares subject to stock awards and stock options outstanding at December 31, 2009 for each director is as follows:

Name	Aggregate Number (#) of Stock Awards Outstanding as of December 31, 2009
Brook Byers	—
William Ericson	—
Michael Hunkapiller, PhD	—
Susan Siegel	130,000
David Singer	—
Randy Livingston	80,000

Upon consummation of our initial public offering, non-employee directors will receive an annual retainer of $35,000. The chair of our audit committee will be paid an additional annual retainer of $20,000, and members of our audit committee other than the chair will be paid an additional annual retainer of $10,000. The chair of our compensation committee will be paid an additional annual retainer of $14,000, and members of our compensation committee other than the chair will be paid an additional annual retainer of $7,000. The chair of our corporate governance and nominating committee will be paid an additional annual retainer of $10,000, and members of our corporate governance and nominating committee other than the chair will be paid an additional annual retainer of $5,000. Our lead independent director will be paid an additional annual retainer of $15,000.

Our outside director equity compensation policy will become effective immediately upon the closing of this offering. The policy is intended to formalize the granting of equity compensation to our non-employee directors under the 2010 Outside Director Equity Incentive Plan. The policy provides for automatic and nondiscretionary grants of nonstatutory stock options subject to the terms and conditions of the policy and the 2010 Outside Director Equity Incentive Plan.

Under the policy, in connection with the pricing of this initial public offering, each non-employee director serving on our board of directors at the time of this offering will be automatically granted an option to purchase 50,000 shares of our common stock at the price per share at which such common stock is sold in this offering. Each non-employee director, who first becomes a non-employee director following the effective date of the first registration statement filed by us and declared effective with respect to any class of our securities, will be automatically granted a stock option to purchase 50,000 shares of our common stock on the date such person first becomes a non-employee director. A director who is an employee and who ceases to be an employee, but who remains a director will not receive such an initial award.

In addition, each non-employee director will be automatically granted an annual stock option to purchase 25,000 shares of our common stock on the date of each annual meeting beginning on the date of the first annual meeting that is held at least four months after such non-employee director received his or her initial award, provided such non-employee director continues to serve as a director through such date. Our audit committee chairperson will also be automatically granted an additional annual stock option to purchase 10,000 shares of our common stock on the date of each annual meeting beginning on the date of the first annual meeting that is held at least four months after such audit committee chairperson received his or her initial award.

The exercise price of all stock options granted pursuant to the policy will be equal to the fair market value of our common stock on the date of grant. The term of all stock options will be 10 years. Subject to the adjustment provisions of the 2010 Outside Director Equity Incentive Plan, initial awards, including such awards granted in connection with this offering, will vest over three years, with one third of the shares subject to the option vesting on the one year anniversary of the date of grant, and the remaining shares vesting monthly over the following two years, provided such non-employee director continues to serve as a director through each vesting date. Subject to the adjustment provisions of the 2010 Outside Director Equity Incentive Plan, the annual awards, including the additional annual awards to our audit committee chairperson, will vest monthly over one year, provided such non-employee director continues to serve as a director through each vesting date.

The administrator of the 2010 Outside Director Equity Incentive Plan in its discretion may change or otherwise revise the terms of awards granted under the outside director equity compensation policy.

In the event of a “change in control,” as defined in our 2010 Outside Director Equity Incentive Plan, with respect to awards granted under the 2010 Outside Director Equity Incentive Plan to non-employee directors, the participant non-employee director will fully vest in and have the right to exercise awards as to all shares underlying such awards and all restrictions on awards will lapse, and all performance goals or other vesting criteria will be deemed achieved at 100% of target level and all other terms and conditions met.

Code of Business Conduct and Ethics

We have adopted a code of business conduct that is applicable to all of our employees, officers and directors. In addition, we have adopted a code of ethics that is applicable to our chief executive and senior financial officers.

Compensation Committee Interlocks and Insider Participation

None of the members of our compensation committee is an officer or employee of our company. None of our executive officers currently serves, or in the past year has served, as a member of the board of directors or compensation committee of any entity that has one or more executive officers serving on our board of directors or compensation committee.

EXECUTIVE COMPENSATION

Compensation Discussion and Analysis

The following discussion and analysis of compensation arrangements of our named executive officers for 2009 and 2010 should be read together with the compensation tables and related disclosures set forth below. This discussion contains forward-looking statements that are based on our current considerations, expectations and determinations regarding future compensation programs. The actual amount and form of compensation and the compensation programs that we adopt may differ materially from current or planned programs as summarized in this discussion.

Overview

Our compensation program is overseen and administered by the compensation committee of our board of directors, which currently is comprised of William Ericson, who serves as the Chairman, Sue Siegel and Michael Hunkapiller. Each of Mr. Ericson, Dr. Hunkapiller and Ms. Siegel qualify as (i) an "independent director" under the rules of The NASDAQ Stock Market and (ii) as an "outside director" under Section 162(m) of the Internal Revenue Code of 1986, as amended, or the Code.

The compensation committee's goal is to ensure that the total compensation paid to our executive officers is fair, reasonable and competitive. Our compensation program is designed to attract talented individuals to lead, manage and operate all aspects of our business and reward and retain those individuals who continue to meet our high expectations over time. Our executive compensation program combines short- and long-term components, cash and equity in amounts and proportions that we believe are most appropriate to incentivize and reward our executive officers for achieving our objectives. Our executive compensation program is also intended to make us competitive in our industry, where there is considerable competition for talented executives.

Objectives and Principles of Our Executive Compensation

The guiding principle in the development of our compensation strategy is to create and nurture a pay-for-performance culture, where exceptional company and individual performance contribution has the potential to be matched with appropriate financial rewards for the whole compensation package. The objectives of our compensation program are:

- to attract the best and brightest employees;
- to motivate successful execution of our corporate objectives;
- to ensure that broad-based compensation programs are aligned with company objectives that when achieved will lead to an increase in value for our stockholders; and
- to ensure retention of key staff.

Our current compensation programs reflect our startup origins in that they consist primarily of salary and stock options for our executive officers. We anticipate increasing the flexibility and elements of our compensation structure going forward, while striving to maintain transparency, simplicity and a clear pay-for-performance orientation. As our needs evolve, we intend to continue to evaluate our philosophy and compensation programs as circumstances require, and we will review executive compensation annually. We anticipate making new equity awards and adjustments to the components of our executive compensation program in connection with our yearly compensation review, which will be based, in part, upon the market analysis performed by the compensation consultant retained by our compensation committee, Radford.

Role of Compensation Consultant

Our compensation committee has the authority to engage the services of outside consultants to assist it in making decisions regarding the establishment of our compensation programs and philosophy. Our compensation committee retained Radford as its compensation consultant in 2010 to advise the compensation committee in

matters related to executive and equity compensation. Radford reviewed and compiled data from companies in our peer group, as discussed below, and presented them to our compensation committee to assist it in determining our executive compensation.

Role of Executive Officers in Compensation Decisions

For executive officers other than our Chief Executive Officer, our compensation committee has historically sought and considered input from our Chief Executive Officer regarding such executive officers' responsibilities, performance and compensation. Specifically, our Chief Executive Officer recommends base salary increases and equity award levels that are used throughout our compensation plans, and advises our compensation committee regarding the compensation program's ability to attract, retain and motivate executive talent. These recommendations reflect compensation levels that our Chief Executive Officer believes are qualitatively commensurate with an executive officer's individual qualifications, experience, responsibility level, functional role, knowledge, skills and individual performance, as well as our company's performance. Our compensation committee considers our Chief Executive Officer's recommendations, and approves the specific compensation for all the executive officers. Our compensation committee also relies on the experience of our directors affiliated with venture capital firms, which have representatives on the board of directors of numerous private companies, in determining and approving the specific compensation amounts.

Our compensation committee meets in executive session, and our Chief Executive Officer does not attend compensation committee discussions where recommendations are made regarding his compensation. Our compensation committee applies a similar pay-for-performance philosophy when setting compensation for our Chief Executive Officer. Our compensation committee discusses with the Chief Executive Officer the core metrics to drive the business forward, and how various forms of variable and incentive compensation can be applied at the executive level to achieve our goals. When setting the structure of compensation for Mr. Martin, our compensation committee discusses the balance between near-term and long-term performance in structuring Mr. Martin's compensation. Mr. Martin does not provide input into setting his level of pay, which is under the purview of the compensation committee and board of directors. He also abstains from voting in sessions of the board of directors where the board of directors acts on the compensation committee's recommendations regarding his compensation.

Peer Group

In May 2010, based on the recommendation of our executive compensation consultant, our compensation committee adopted a peer group of companies. We have chosen our peer group from companies in both information technology and life sciences because our business requires skill sets from both industries. We used the following criteria in selecting a peer group:

- companies with a similar industry focus;
- companies with revenue between $100,000,000 and $500,000,000;
- companies located near life sciences/technology hub markets which influence pay levels; and
- companies with headcount generally between 200 to 1,000 staff members.

We also examined the practices of the peer group with a focus on the compensation arrangements, plans and practices of the companies that had gone public in the past three years to ensure our practices are in line with current industry standards.

Our peer group for 2010 is comprised of following companies:

- 3PAR, Inc.
- Affymetrix, Inc.
- Aruba Networks, Inc.
- Bigband Networks, Inc.
- Caliper Life Sciences Inc.
- Cavium Networks, Inc.
- Celera Corporation
- Cepheid
- Dionex Corporation
- Entropic Communications, Inc.
- Fortinet, Inc.
- Genomic Health Inc.
- Genoptix, Inc.
- Gen-Probe Incorporated
- Illumina Inc.
- Infinera Corporation
- Intuitive Surgical
- Life Technologies Corporation
- Opnext, Inc.
- Riverbed Technology, Inc.
- Sequenom, Inc.

Radford provided our compensation committee with competitive market data obtained from compensation surveys and proxy data to review our compensation programs and identify trends in executive and equity compensation. Radford considers the 25th to 75th percentiles of benchmark data to be a competitive range. Our compensation committee used the data provided by Radford to compare each element of total executive compensation within our peer group.

We believe that the practices of the companies in the surveys we reviewed provide us with appropriate compensation benchmarks because many of these companies have similar organizational structures and tend to compete with us for executives. We work within the general framework of this market-competitive philosophy to determine each component of an executive's compensation package based on numerous factors, including:

- the demand for the particular skill sets we need within the marketplace;
- performance goals and other expectations for the position and the individual;
- the individual's background and relevant expertise, including training and prior relevant work experience;
- the individual's role with us and the compensation paid to similar persons at the companies that participate in the surveys that we review; and
- comparison to other executives within our company having similar levels of expertise and experience.

Components of Our Executive Compensation Program

The components of our executive compensation program through 2009 have consisted primarily of base salaries, equity awards and broad-based benefits programs. We combine short-term compensation components, namely base salaries, and long-term compensation components, such as equity incentive awards, to provide an overall compensation structure that is designed to both attract and retain key executives as well as provide incentive for the achievement of short- and long-term corporate objectives. In addition, we introduced annual bonus plans for certain of our executives beginning in 2009, which provided for incentive cash bonuses based on the achievement of certain goals.

The components of our executive compensation programs reflect our stage of development and have, historically, placed a higher reliance on longer-term equity compensation than on total cash compensation, comprised of base salary and bonus compensation. Relative to the benchmark data, our total cash compensation generally compares near or below the competitive range, both in aggregate compensation and relative to the individual compensation elements. During future periods, as we focus on commercial operations, we expect to place a greater emphasis on benchmark data when setting our aggregate executive compensation and underlying elements.

Base Salary. Our compensation strategy has been to secure the talent we need in a way that carefully manages our cash resources. The base salaries of our executive officers may in some instances be lower than market, but we offer competitive equity incentives which are discussed below. Factors considered in determining base salaries include internal comparisons, individual skills and experience, performance contributions and competitiveness of the marketplace. Salaries are reviewed on an annual basis, taking into account the factors described above. Our compensation committee sought to achieve internal equity by setting salary levels at or

near those of other executives with similar levels of responsibilities in our company. This practice has generally resulted in setting salary levels within the competitive range of executives in similar positions in the benchmark data reviewed.

Bonus. Due to our need to attract and retain our executive management team as a private research and development company, we limited the use of cash bonuses and did not establish or follow a cash bonus program. As a result, bonus compensation afforded to certain executive officers was based on individually determined amounts and payment structures necessary, in the opinion of the board, to attract and retain the individual.

As we are now moving towards the commercialization of our first product, we have initiated a cash incentive bonus program for our senior management, including our executive officers. For the second half of 2010, bonuses paid under our incentive bonus program will be tied to achievement of a critical goal necessary for our company to be successful in launching commercial sales of our PacBio *RS*. To foster teamwork, all of our executive officers, other than our Chief Executive Officer, have the same goal. The second half 2010 bonuses are structured as a percentage of base salary. The bonus target has been developed to allow our executives to earn total cash compensation within a competitive range based on benchmark data, if our company meets its objectives.

Equity Incentives. Our equity award program is the primary vehicle for offering long-term incentives to our key employees, including executive officers. Our equity-based incentives have historically been granted in the form of options to purchase shares of our common stock, including the grant of options after the commencement of employment. We have also awarded periodic equity grants, which are designed to ensure retention of key employees at all levels of our company. We believe that equity grants align the interests of our key employees with our stockholders, provide our key employees with incentives linked to long-term performance and create an ownership culture. In addition, the vesting feature of our equity grants contributes to employee retention because this feature provides an incentive to our key employees to remain in our employ during the vesting period.

In 2009 and 2010, we awarded focal equity grants to our named executive officers as discussed below. Focal grants are post-hire equity grants that are awarded to all employees based on performance and the need to encourage retention.

Benefits. We provide the following benefits to our named executive officers on the same basis provided to all of our employees:

- health, dental and vision insurance;
- life insurance and accidental death and dismemberment insurance;
- a 401(k) plan;
- long-term disability;
- medical and dependent care flexible spending account; and
- an employee assistance program.

Executive Officer Compensation

Base Salary

Chief Executive Officer. Mr. Martin’s base salary for fiscal 2009 was $300,000. In order to help our company conserve cash, Mr. Martin’s base salary will remain at $300,000 for 2010.

Other Executive Officers. Dr. Turner’s base salary for fiscal 2009 was $275,000 and will remain the same in 2010. Mr. Phillips’ base salary for fiscal 2009 was $220,000. His base salary was increased to $270,000 effective February 1, 2010 in conjunction with his promotion to Senior Vice President. Our compensation committee took into account the salary levels of executives in similar positions in the market surveys it reviewed in determining Mr. Phillips’ salary increase.

Ms. Barnes was appointed our Chief Financial Officer in February 2010 and our compensation committee set her base salary at $300,000.

Bonus

Chief Executive Officer. When Mr. Martin was hired in 2004, our board of directors agreed to pay Mr. Martin a $100,000 bonus subject to achievement of certain objectives. His bonus was initially payable semi- monthly. After the first year of Mr. Martin's employment, our board of directors continued the practice of setting Mr. Martin's bonus target at $100,000 and in 2009, our compensation committee recommended and our board of directors approved paying Mr. Martin's bonus on a quarterly basis. The bonus payment for 2009 was determined 50% based on actual achievement of certain quarterly deliverables by Mr. Martin relating to products, finance, organization and personnel, and 50% based on our board of directors' assessment of Mr. Martin's progress towards certain major goals set by our board of directors relating to conserving cash, the product development timeline and developing and executing market strategies. In March 2010, our compensation committee determined that all the quarterly deliverables and two-thirds of the major goals were achieved. Thus, Mr. Martin was eligible for 83% of his bonus for fiscal 2009. Our compensation committee and board of directors have determined that a substantial portion of Mr. Martin's compensation should be structured as a longer-term incentive, so he will not be eligible for a cash bonus in 2010.

Other Executive Officers. In 2009, Dr. Turner was not eligible to receive any cash bonus payments. Prior to 2009, we had a bonus commitment of a fixed amount of $40,000 per year to Mr. Phillips, which was subsequently extended by the board through the end of 2009. Despite the lack of a formal guarantee, we continued to pay the bonus during the first two quarters of 2010.

For the second half of 2010, Dr. Turner is eligible to receive a cash bonus equal to 30% of his base salary, pro-rated for the portion of the year covered by our incentive bonus program and Mr. Phillips is eligible to receive $20,000 plus up to 40% of his base salary, pro-rated for the portion of the year covered by our incentive bonus program.

For 2010, Ms. Barnes is eligible to receive a bonus of $18,270 plus up to 40% of her base salary, pro-rated for the portion of the year covered by our incentive bonus program.

Equity Incentives

In 2009, we considered a number of factors in determining the amount of focal grants, if any, granted to our key employees, including:

- the number of shares subject to outstanding options, both vested and unvested, held by our key employees;
- the vesting schedule of the unvested stock options held by our key employees; and
- the periodic equity incentive award practices observed in the surveys we reviewed.

Chief Executive Officer. In March 2009, Mr. Martin was granted an option to purchase up to 1,100,000 shares of our common stock at an exercise price of $1.93 per share. This option grant was Mr. Martin's focal grant for 2008. The size of the grant was based on the compensation committee's review of data from surveys we considered, grants made to individuals at similar levels within our company, and correlated with the level of authority and responsibility of the named executive officer. Consistent with the retention purposes of focal awards, the option granted to Mr. Martin is scheduled to vest as to twenty percent of the shares subject to the option after one year, and the remaining shares will vest monthly over the following four years. In February 2010, Mr. Martin was granted an option to purchase up to 300,000 shares of our common stock at an exercise price of $4.25 per share. This option grant was Mr. Martin's focal grant for 2009. This option is scheduled to vest as to twenty percent of the shares subject to the option after one year, and the remaining shares will vest monthly over the following four years.

In August 2010, after a thorough review of market compensation standards, our compensation committee determined that in order to incent and align our chief executive officer's interest with those of our stockholders and in order to continue to preserve cash, we should focus a substantial portion of Mr. Martin's compensation on equity incentives that are aligned with our company's performance. We determined we should increase his equity ownership to a level that is commensurate with his peers through an additional stock option grant of 500,000 shares that will vest over five years. In addition, we adopted a longer-term incentive plan for Mr. Martin. Under this plan, effective on the date of this offering, Mr. Martin will be granted performance options to purchase up to 300,000 shares with an exercise price equal to the initial public offering price that he will earn based on our achievement of certain performance targets in 2011 and 2012. For Mr. Martin to earn the full number of performance option shares, we must achieve certain revenue, gross margin and operating income targets that our compensation committee established and our board of directors approved. Mr. Martin will not earn any of the performance option shares until after the financial results of our 2011 fiscal year are complete. He is eligible to earn up to 50% of the performance options based on our financial performance in 2011 and up to 50% of the performance options based on our financial performance in 2012. The performance targets are based on our current operating plan for fiscal years 2011 and 2012, which is an internal, non-public financial plan approved by our board of directors. The performance targets include certain non-GAAP financial metrics that we believe are important in managing our business. The performance targets we have established are aggressive, but not unattainable, and are based on management's evaluation of expected demand for our product and the profitability goals we believe are necessary to ensure that we have a long-term, sustainable business model. The performance targets require a minimum threshold of achievement for Mr. Martin to vest in any of the performance options. We are not disclosing the performance targets because their disclosure will result in competitive harm.

Other Executive Officers. In connection with the hiring of Ms. Barnes in 2010, our board of directors granted her an option in February 2010 to purchase up to 750,000 shares of our common stock at an exercise price of $4.25 per share. Consistent with our new hire grants, this option is scheduled to vest as to twenty five percent of the shares subject to the option after one year, and the remaining shares will vest monthly over the following three years.

In reviewing Dr. Turner's contribution to our company for 2009, our compensation committee recommended and the board of directors approved an equity award as a long-term incentive for Dr. Turner. As a result, in February 2010, Dr. Turner was granted an option to purchase up to 100,000 shares of our common stock at an exercise price of $4.25 per share. This option grant was Dr. Turner's focal grant for 2009. The option granted to Dr. Turner is scheduled to vest as to twenty percent of the shares subject to the option after one year, and the remaining shares will vest monthly over the following four years.

In February 2010, Mr. Phillips was granted an option to purchase up to 175,000 shares of our common stock at an exercise price of $4.25 per share. This option grant was Mr. Phillips' focal grant for 2009. The option granted to Mr. Phillips is scheduled to vest as to twenty percent of the shares subject to the option after one year, and the remaining shares will vest monthly over the following four years. The grant was based on Mr. Phillips' 2009 contribution to our company's performance and to provide a long-term retention incentive.

Tax Considerations

We have not provided any executive officer or director with a gross-up or other reimbursement for tax amounts the executive might pay pursuant to Section 280G or Section 409A of the Internal Revenue Code of 1986, as amended, or the Code. Section 280G and related Code sections provide that executive officers, directors who hold significant stockholder interests and certain other service providers could be subject to significant additional taxes if they receive payments or benefits in connection with a change in control that exceeds certain limits, and that we or our successor could lose a deduction on the amounts subject to the additional tax. Section 409A also imposes additional significant taxes on the individual in the event that an executive officer, director or service provider receives "deferred compensation" that does not meet the requirements of 409A.

Because of the limitations of Code Section 162(m), we generally receive a federal income tax deduction for compensation paid to our chief executive officer and to certain other highly compensated officers only if the

compensation is less than $1,000,000 per person during any fiscal year or is "performance-based" under Code Section 162(m). In addition to salary and bonus compensation, upon the exercise of stock options that are not treated as incentive stock options, the excess of the current market price over the option price, or option spread, is treated as compensation and accordingly, in any year, such exercise may cause an officer's total compensation to exceed $1,000,000. Option spread compensation from options that meet certain requirements will not be subject to the $1,000,000 cap on deductibility, and in the past we have granted options that we believe met those requirements. Additionally, under a special Code Section 162(m) exception, any compensation paid pursuant to a compensation plan in existence before the effective date of this public offering will not be subject to the $1,000,000 limitation until the earliest of: (i) the expiration of the compensation plan, (ii) a material modification of the compensation plan (as determined under Code Section 162(m)), (iii) the issuance of all the employer stock and other compensation allocated under the compensation plan or (iv) the first meeting of stockholders at which directors are elected after the close of the third calendar year following the year in which the public offering occurs. While our compensation committee cannot predict how the deductibility limit may impact our compensation program in future years, our compensation committee intends to maintain an approach to executive compensation that strongly links pay to performance. In addition, while our compensation committee has not adopted a formal policy regarding tax deductibility of compensation paid to our named executive officers, our compensation committee intends to consider tax deducibility under Code Section 162(m) as a factor in compensation decisions.

Employment Agreements and Change of Control Arrangements

We have an obligation to make payments to Mr. Martin upon his termination by us without cause, his termination due to death or disability or Mr. Martin's resignation for good reason, which includes a substantial reduction in his rate of compensation, a reduction of his responsibilities such that he is not our Chief Executive Officer or the Chief Executive Officer of our successor or a more than 50 mile relocation of his principal place of employment.

In August 2010, our compensation committee recommended and our board of directors approved certain change of control provisions for our executive officers, including Mr. Martin. For Mr. Martin, upon the occurrence of involuntary termination within 12 months following a change of control, (i) 100% of any unvested equity will vest and (ii) he will receive salary continuation and benefits for 12 months. For the other executive officers, upon the occurrence of involuntary termination within 12 months following a change of control, (i) 100% of any unvested equity will vest and (ii) the executive will receive salary continuation and benefits for 6 months.

The following table describes the potential payments and benefits to each of our named executive officers following a termination of employment without cause, due to death or a disability or for good reason on December 31, 2009, based on the severance and change of control provisions described above and based on equity grants outstanding as of December 31, 2009. Actual amounts payable to each executive listed below upon termination can only be determined definitively at the time of each executive's actual departure. In addition to the amounts shown in the table below, each executive would receive payments for amounts of base salary and vacation time accrued through the date of termination and payment for any reimbursable business expenses incurred.

Termination of Employment

Compensation and benefits	Termination without cause, due to death or disability or for good reason not in connection with a change of control	Involuntary termination after change of control
Hugh C. Martin		
Salary	$ 150,000	$ 300,000
Equity Acceleration	1,057,290	3,813,527(1)
Health Care Benefits	11,332	22,664
Total	$ 1,218,622	$4,136,191
Stephen Turner, PhD		
Salary	$ —	$ 137,500
Equity Acceleration	—	448,942
Health Care Benefits	—	11,332
Total	$ —	$ 597,774
Michael Phillips		
Salary	$ —	$ 110,000
Equity Acceleration	—	190,000
Health Care Benefits	—	11,332
Total	$ —	$ 311,332

(1) Since December 31, 2009, Mr. Martin has received a grant of an additional 800,000 options to purchase common stock and he will receive a performance equity grant of an additional 300,000 options to purchase common stock effective on the date of this offering, which are not included in this amount.

2009 Summary Compensation Table

The following table provides information regarding the compensation of our principal executive officer and each of our other executive officers, together referred to as our named executive officers, during our fiscal year ended December 31, 2009.

Summary Compensation Table

Name and principal position	Year	Salary ($)	Bonus ($)	Option awards ($)(1)	Total ($)
Hugh C. Martin President, Chief Executive Officer and Chairman of the Board of Directors (Principal Executive Officer)	2009	300,000	25,000	979,000	1,304,000
Stephen Turner, PhD Director and Chief Technology Officer	2009	275,000	—	—	275,000
Michael Phillips Senior Vice President Research and Development	2009	220,000	40,000	—	260,000

(1) Amounts shown represent the aggregate grant date fair value of the option awards computed in accordance with FASB Topic ASC 718. These amounts do not correspond to the actual value that will be recognized by Mr. Martin. The assumptions used in the valuation of these awards are consistent with the valuation methodologies specified in the notes to our financial statements.

Susan K. Barnes joined us as Senior Vice President and Chief Financial Officer in February 2010. Her compensation for 2010 is: (i) base salary of $300,000 and (ii) an option grant of 750,000 shares of our common stock vesting over four years. Ms. Barnes is eligible to receive a bonus of $18,270 plus up to 40% of her base salary, pro-rated for the portion of the year covered by our incentive plan.

Grants of Plan-Based Awards

The following table presents information concerning grants of plan-based awards to each of the named executive officers during the fiscal year ended December 31, 2009.

Grants of Plan-Based Awards

Name	Grant date	All Other option awards: number of securities underlying options (#)	Exercise or base price of option awards ($)	Grant date fair value of option awards ($)(1)
Hugh C. Martin	3/19/2009	1,100,000	1.93	979,000
Stephen Turner, PhD	—	—	—	—
Michael Phillips	—	—	—	—

(1) Amounts shown represent the aggregate grant date fair value of the option awards computed in accordance with FASB Topic ASC 718. These amounts do not correspond to the actual value that will be recognized by Mr. Martin. The assumptions used in the valuation of these awards are consistent with the valuation methodologies specified in the notes to our financial statements.

Outstanding Equity Awards at Fiscal Year-End

The following table presents certain information concerning equity awards held by the named executive officers at the end of the fiscal year ended December 31, 2009.

Outstanding Equity Awards at Fiscal Year-End

	Option Awards		
Name	**Number of securities underlying unexercised options (#) exercisable**	**Option exercise price ($)**	**Option expiration date**
Hugh C. Martin	300,000 (1)	0.35	09/08/2015
	664,250(1)	0.98	06/21/2017
	1,100,000(1)	1.93	03/19/2019
Stephen Turner, PhD	210,000 (1)	0.35	09/08/2015
	150,000(1)	0.98	06/21/2017
	150,000(1)	3.48	09/17/2018
Michael Phillips	63,325 (2)	0.35	09/08/2015
	75,000(1)	0.98	06/21/2017
	125,000(1)	3.48	09/17/2018

(1) Stock option vests at the rate of 1/5th of the total number of shares subject to the option after one year and 1/60th per month for the next four years.

(2) Stock option vests at the rate of 1/4th of the total number of shares subject to the option after one year and 1/48th per month for the next three years.

Option Exercises and Stock Vested at Fiscal Year-End

None of the named executive officers exercised stock options during 2009 and none of the named executive officers held stock awards in 2009.

Pension Benefits and Nonqualified Deferred Compensation

We do not provide a pension plan for our employees and none of our named executive officers participated in a nonqualified deferred compensation plan during the fiscal year ended December 31, 2009.

Employee Benefit Plans

2004 Equity Incentive Plan. Our board of directors adopted and our stockholders approved the 2004 Equity Incentive Plan, referred to as the 2004 Plan, in March 2004.

Authorized shares. Our 2004 Plan was terminated in August 2005 and accordingly, no shares are available for issuance under this plan. As of June 30, 2010, options to purchase up to 227,918 shares of our common stock at a weighted-average exercise price per share of $0.11 remained outstanding under this plan. In the event options are returned to this plan upon an optionee's termination, the options are canceled and will not be available for future issuance.

Plan administration. The 2004 Plan is administered by our board of directors which, at its discretion or as legally required, may delegate such administration to our compensation committee and/or one or more additional committees. Subject to the provisions of our 2004 Plan, the administrator has the power to determine the terms of awards, including the recipients, the number of shares subject to each award and other terms, which need not be identical. The administrator may construe and interpret the 2004 Plan and awards granted under it, establish,

amend and revoke rules and for administration of the 2004 Plan, and to amend awards granted under the 2004 Plan. The administrator may exercise such powers and may perform such acts as necessary or expedient to promote the best interests of our company and that are not in conflict with provisions of the 2004 Plan.

Stock Options. The 2004 Plan permitted the grant of incentive and/or nonstatutory stock options, provided that incentive stock options were only permitted to be granted to employees. The exercise price with respect to incentive stock options must equal at least the fair market value of our common stock on the date of grant and with respect to nonstatutory stock options, at least 85% of the fair market value of our common stock on the date of grant. The term of an option may not exceed 10 years. Provided, however, that with respect to a participant who owns more than 10% of the total combined voting power of all classes of our stock, or of certain of our parent or subsidiary corporations, special rules applied with respect to the exercise price and term of the award, including that incentive stock options may not have a term in excess of five years and must have an exercise price of at least 110% of the fair market value of our common stock on the date of grant. The purchase price of an option may be paid in cash or, at the discretion of our board of directors, in shares or other property acceptable to our board of directors. After the termination of service of an employee, director or consultant, the participant may exercise his or her option, to the extent vested as of such date of termination, within three months of termination or such longer or shorter period of time as stated in his or her option agreement, but not less than 30 days, unless such termination is for cause. Generally, if termination is due to death, or if death occurs within a specified period following termination, or disability, the option will remain exercisable for 18 or 12 months, respectively, or such longer or shorter period of time as stated in his or her option agreement, but not less than six months. In no event may an option be exercised later than the expiration of its term.

Stock Bonus Awards. The 2004 Plan permitted the grant of stock bonus awards in consideration for past services actually rendered. Our board of directors determined the vesting schedule, if any, of such awards. Upon termination of service of an employee, director or consultant, we may reacquire any or all of the shares subject to the award that have not vested as of the date of termination of service, subject to the terms of the 2004 Plan and applicable award agreement.

Restricted Stock. The 2004 Plan also permitted the grant of restricted stock. Restricted stock awards are grants of shares that are subject to various restrictions, including restrictions on transferability and forfeiture provisions. Shares of restricted stock will vest and the restrictions on such shares will lapse, in accordance with terms and conditions established by our board of directors. Such terms include, among other things, the purchase price of the awards, which may not be less than 85% of the fair market value of a share of our common stock on the date of grant or time of purchase, and vesting schedule. Upon termination of service of an employee, director or consultant, we may repurchase or otherwise reacquire any or all of the shares subject to the award that have not vested as of the date of termination. The specific terms will be set forth in an award agreement.

Transferability of Awards. Our 2004 Plan generally does not allow for the transfer of awards and only the recipient of an option or stock appreciation right may exercise such an award during his or her lifetime.

Certain Adjustments. In the event of certain changes in our capitalization, our board of directors will make adjustments to class, number and price of shares covered by each outstanding award. In the event of our proposed liquidation or dissolution, all options will terminate immediately prior to the consummation of such proposed transaction and we may repurchase shares subject to other awards.

Merger or Change in Control. Our 2004 Plan provides that in the event of corporate transaction, as defined under the 2004 Plan, each outstanding award will be assumed or substituted for an equivalent award. In the event that awards are not assumed or substituted for, then such awards held by participants whose service has not terminated will fully vest and all restrictions on such awards will lapse prior to the effective time of such transaction, as our board of directors determines. The award will then terminate upon such effective time of the transaction.

Amendment, Termination. Our board of directors may amend the 2004 Plan at any time and from time to time, provided that such amendment does not impair the rights under outstanding awards without the award holder's written consent. Our 2004 Plan was terminated in August 2005. No shares are available for grant under this plan, but awards outstanding under this plan continue to be governed by their existing terms.

2005 Stock Plan. Our board of directors adopted and our stockholders approved the 2005 Stock Plan, referred to as the 2005 Plan, in August 2005.

Authorized Shares. An aggregate of 23,306,169 shares of our common stock is reserved for issuance under this plan. The 2005 Plan provides for the grant of ISOs, NSOs and stock purchase rights. As of June 30, 2010, options to purchase 17,347,425 shares of our common stock at a weighted-average exercise price per share of $2.74 remained outstanding under this plan, and options to purchase 4,037,206 shares of our common stock remained available for future issuance pursuant to awards granted under this plan.

Plan Administration. Our board of directors or a committee thereof appointed by our board of directors, currently the compensation committee, has the authority to administer the 2005 Plan and the awards granted under it. Subject to the provisions of our 2005 Plan, the administrator has the power to determine the terms of awards, including the recipients, the number of shares subject to each award, the exercise price, if any, the fair market value of a share of our common stock, the vesting schedule applicable to the awards, together with any vesting acceleration, and the terms of the award agreement for use under the 2005 Plan. The administrator also has the authority, subject to the terms of the 2005 Plan, to amend existing options to reduce their exercise price, to institute an exchange program by which outstanding options may be surrendered in exchange for options of the same type, which may have lower exercise prices and different terms, options of a different type and/or cash, to prescribe rules and to construe and interpret the 2005 Plan and awards granted thereunder.

Stock Options. The administrator may grant incentive and/or nonstatutory stock options under our 2005 Plan provided that incentive stock options are only granted to employees. The exercise price with respect to incentive stock options must equal at least the fair market value of our common stock on the date of grant and with respect to nonstatutory stock options, at least 85% of the fair market value of our common stock on the date of grant. The term of an option may not exceed 10 years. Provided, however, that an incentive stock option held by a participant who owns more than 10% of the total combined voting power of all classes of our stock, or of certain of our parent or subsidiary corporations, may not have a term in excess of five years and must have an exercise price of at least 110% of the fair market value of our common stock on the date of grant. The administrator will determine the methods of payment of the exercise price of an option, which may include cash, shares or certain other property acceptable to the administrator. After the termination of service of an employee, director or consultant, the participant may exercise his or her option, to the extent vested as of such date of termination, within 30 days of termination or such longer period of time as stated in his or her option agreement. If termination is due to death or disability, the option will remain exercisable, to the extent vested as of such date of termination, for six months or such longer period of time as stated in his or her option agreement. In no event may an option be exercised later than the expiration of its term.

Restricted Stock. Restricted stock may be granted under our 2005 Plan. Restricted stock awards are grants of shares of our common stock that are subject to various restrictions, including restrictions on transferability and forfeiture provisions. Shares of restricted stock will vest and the restrictions on such shares will lapse, in accordance with terms and conditions established by the administrator. Recipients of restricted stock awards generally will have voting and dividend rights with respect to such shares upon grant without regard to vesting. Unless the administrator determines otherwise, shares of restricted stock are subject to a repurchase option in our favor that is exercisable within 90 days of termination of service for any reason, subject to the terms of the 2005 Plan and the award agreement.

Transferability of Awards. Unless the administrator provides otherwise, our 2005 Plan generally does not allow for the transfer of awards and only the recipient of an option or stock appreciation right may exercise such an award during his or her lifetime.

Certain Adjustments. In the event of certain changes in our capitalization, to prevent diminution or enlargement of the benefits or potential benefits available under the 2005 Plan, the administrator will adjust the number and class of shares that may be delivered under the 2005 Plan and/or the number, class and price of shares covered by each outstanding award. In the event of our proposed liquidation or dissolution, the administrator will notify participants as soon as practicable and all awards will terminate immediately prior to the consummation of such proposed transaction.

Merger or Change in Control. Our 2005 Plan provides that in the event of a merger or change in control, as defined under the 2005 Plan, each outstanding award will be assumed or substituted for an equivalent award. In the event that awards are not assumed or substituted for, then such awards will fully vest and such awards will become fully exercisable, if applicable, for a specified period prior to the transaction. The award will then terminate upon the expiration of the specified period of time.

Amendment, Termination. Our board of directors may amend the 2005 Plan at any time, provided that such amendment does not impair the rights under outstanding awards without the award holder's written consent. Following the closing of this offering, the 2005 Plan will be terminated and no further awards will be granted under the 2005 Plan. All outstanding awards will continue to be governed by their existing terms.

2010 Equity Incentive Plan. Our board of directors has adopted, and we expect our stockholders will approve, our 2010 Equity Incentive Plan, or the 2010 Plan, prior to the closing of this offering. Subject to stockholder approval, the 2010 Plan is effective upon its adoption by our board of directors, but is not expected to be used until after the closing of this offering. Our 2010 Plan provides for the grant of incentive stock options, within the meaning of Code Section 422, to our employees and any of our parent and subsidiary corporations' employees, and for the grant of nonstatutory stock options, stock appreciation rights, restricted stock, restricted stock units, performance units and performance shares to our employees, directors and consultants and our parent and subsidiary corporations' employees and consultants.

Authorized Shares. The maximum aggregate number of shares that may be issued under the 2010 Plan is 5,000,000 shares of our common stock, plus (i) any shares that as of the closing of this offering, have been reserved but not issued pursuant to any awards granted under our 2005 Plan and are not subject to any awards granted thereunder and (ii) any shares subject to stock options or similar awards granted under the 2005 Plan that expire or otherwise terminate without having been exercised in full and unvested shares issued pursuant to awards granted under the 2005 Plan that are forfeited to or repurchased by us, with the maximum number of shares to be added to the 2010 Plan pursuant to clauses (i) and (ii) above equal to 21,384,631 shares as of June 30, 2010. In addition, the number of shares available for issuance under the 2010 Plan will be annually increased on the first day of each of our fiscal years beginning with the 2012 fiscal year, by an amount equal to the least of:

- 10,000,000 shares;
- 5% of the outstanding shares of our common stock as of the last day of our immediately preceding fiscal year; or
- such other amount as our board of directors may determine.

Shares issued pursuant to awards under the 2010 Plan that we repurchase or that are forfeited, as well as shares used to pay the exercise price of an award or to satisfy the tax withholding obligations related to an award, will become available for future grant under the 2010 Plan. In addition, to the extent that an award is paid out in cash rather than shares, such cash payment will not reduce the number of shares available for issuance under the 2010 Plan.

Plan Administration. The 2010 Plan will be administered by our board of directors which, at its discretion or as legally required, may delegate such administration to our compensation committee and/or one or more additional committees. In the case of awards intended to qualify as "performance-based compensation" within the meaning of Code Section 162(m), the committee will consist of two or more "outside directors" within the meaning of Code Section 162(m).

Subject to the provisions of our 2010 Plan, the administrator has the power to determine the terms of awards, including the recipients, the exercise price, if any, the number of shares subject to each award, the fair market value of a share of our common stock, the vesting schedule applicable to the awards, together with any vesting acceleration, the form of consideration, if any, payable upon exercise of the award and the terms of the award agreement for use under the 2010 Plan. The administrator also has the authority, subject to the terms of the 2010 Plan, to amend existing awards to reduce or increase their exercise price, to allow participants the opportunity to transfer outstanding awards to a financial institution or other person or entity selected by the

administrator, to institute an exchange program by which outstanding awards may be surrendered in exchange for cash and/or awards of the same or different type that may have different exercise prices and terms, to prescribe rules and to construe and interpret the 2010 Plan and awards granted thereunder.

Stock Options. The administrator may grant incentive and/or nonstatutory stock options under our 2010 Plan provided that incentive stock options are only granted to employees. The exercise price of such options must equal at least the fair market value of our common stock on the date of grant. The term of an option may not exceed 10 years. Provided, however, that an incentive stock option held by a participant who owns more than 10% of the total combined voting power of all classes of our stock, or of certain of our parent or subsidiary corporations, may not have a term in excess of five years and must have an exercise price of at least 110% of the fair market value of our common stock on the date of grant. The administrator will determine the methods of payment of the exercise price of an option, which may include cash, shares or other property acceptable to the plan administrator. After the termination of service of an employee, director or consultant, the participant may exercise his or her option, to the extent vested as of such date of termination, for the period of time stated in his or her option agreement. In no event may an option be exercised later than the expiration of its term.

Stock Appreciation Rights. Stock appreciation rights may be granted under our 2010 Plan. Stock appreciation rights allow the recipient to receive the appreciation in the fair market value of our common stock between the exercise date and the date of grant. Subject to the provisions of our 2010 Plan, the administrator determines the terms of stock appreciation rights, including when such rights vest and become exercisable and whether to settle such awards in cash or with shares of our common stock, or a combination thereof, except that the per share exercise price for the shares to be issued pursuant to the exercise of a stock appreciation right will be no less than 100% of the fair market value per share on the date of grant. The term of a stock appreciation right may not exceed 10 years. Other specific terms will be set forth in an award agreement.

Restricted Stock. Restricted stock may be granted under our 2010 Plan. Restricted stock awards are grants of shares of our common stock that are subject to various restrictions, including restrictions on transferability and forfeiture provisions. Shares of restricted stock will vest and the restrictions on such shares will lapse, in accordance with terms and conditions established by the administrator. The administrator, in its sole discretion, may accelerate the time at which any restrictions will lapse or be removed. Recipients of restricted stock awards generally will have voting and dividend rights with respect to such shares upon grant without regard to vesting, unless the administrator provides otherwise. Shares of restricted stock that do not vest for any reason will be forfeited by the recipient and will revert to us. The specific terms will be set forth in an award agreement.

Restricted Stock Units. Restricted stock units may be granted under our 2010 Plan. Each restricted stock unit granted is a bookkeeping entry representing an amount equal to the fair market value of one share of our common stock. The administrator determines the terms and conditions of restricted stock units including the vesting criteria, which may include achievement of specified performance criteria or continued service to us, and the form and timing of payment. The administrator, in its sole discretion, may accelerate the time at which any restrictions will lapse or be removed. The administrator determines in its sole discretion whether an award will be settled in stock, cash or a combination of both. The specific terms will be set forth in an award agreement.

Performance Units and Performance Shares. Performance units and performance shares may be granted under our 2010 Plan. Performance units and performance shares are awards that will result in a payment to a participant only if performance goals established by the administrator are achieved or the awards otherwise vest. The administrator will establish performance goals in its discretion, which depending on the extent to which they are met, will determine the number and/or the value of performance units and performance shares to be paid out to participants. After the grant of a performance unit or performance share, the administrator, in its sole discretion, may reduce or waive any performance objectives or other vesting provisions for such performance units or performance shares. Performance units will have an initial dollar value established by the administrator prior to the date of grant. Performance shares will have an initial value equal to the fair market value of our common stock on the date of grant. The administrator, in its sole discretion, may pay earned performance units or performance shares in the form of cash, in shares or in some combination thereof. The specific terms will be set forth in an award agreement.

Transferability of Awards. Unless the administrator provides otherwise, our 2010 Plan generally does not allow for the transfer of awards and only the recipient of an option or stock appreciation right may exercise such an award during his or her lifetime.

Certain Adjustments. In the event of certain changes in our capitalization, to prevent diminution or enlargement of the benefits or potential benefits available under the 2010 Plan, the administrator will adjust the number and class of shares that may be delivered under the Plan and/or the number, class and price of shares covered by each outstanding award, and the numerical share limits set forth in the 2010 Plan. In the event of our proposed liquidation or dissolution, the administrator will notify participants as soon as practicable and all awards will terminate immediately prior to the consummation of such proposed transaction.

Merger or Change in Control. Our 2010 Plan provides that in the event of a merger or change in control, as defined under the 2010 Plan, each outstanding award will be treated as the administrator determines, except that if a successor corporation or its parent or subsidiary does not assume or substitute an equivalent award for any outstanding award, then such award will fully vest, all restrictions on such award will lapse, all performance goals or other vesting criteria applicable to such award will be deemed achieved at 100% of target levels and such award will become fully exercisable, if applicable, for a specified period prior to the transaction. The award will then terminate upon the expiration of the specified period of time. If the service of an outside director is terminated on or following a change of control, other than pursuant to a voluntary resignation, his or her awards will become fully vested and exercisable, and all performance goals or other vesting requirements will be deemed achieved at 100% of target levels.

Amendment, Termination. Our board of directors has the authority to amend, suspend or terminate the 2010 Plan provided such action does not impair the existing rights of any participant. Our 2010 Plan will automatically terminate in 2020, unless we terminate it sooner.

2010 Outside Director Equity Incentive Plan. Our board of directors has adopted, and we expect our stockholders will approve our 2010 Outside Director Equity Plan, or the Director Plan, prior to the closing of this offering. Subject to stockholder approval, the Director Plan is effective upon its adoption by our board of directors, but is not expected to be used until after the closing of this offering. Our Director Plan provides for the grant of nonstatutory stock options, stock appreciation rights, restricted stock, restricted stock units, performance units and performance shares.

Authorized Shares. The maximum aggregate number of shares that may be issued under the Director Plan is 1,000,000 shares of our common stock. In addition, the number of shares available for issuance under the Director Plan will be annually increased on the first day of each of our fiscal years beginning with the 2012 fiscal year, by an amount equal to the lesser of:

- 1% of the outstanding shares of our common stock as of the last day of our immediately preceding fiscal year; or
- such other amount as our board of directors may determine.

Shares issued pursuant to awards under the Director Plan that we repurchase or that are forfeited, as well as shares used to pay the exercise price of an award or to satisfy the tax withholding obligations related to an award, will become available for future grant under the Director Plan. In addition, to the extent that an award is paid out in cash rather than shares, such cash payment will not reduce the number of shares available for issuance under the Director Plan.

Plan Administration. The Director Plan will be administered by our board of directors which, at its discretion or as legally required, may delegate such administration to our compensation committee and/or one or more additional committees.

Subject to the provisions of our Director Plan, the administrator has the power to determine the terms of awards, including the outside directors to whom awards may be granted, the exercise price, if any, the number of shares subject to each award, the fair market value of a share of our common stock, the vesting schedule applicable to the awards, together with any vesting acceleration, the form of consideration, if any, payable upon

exercise of the award and the terms of the award agreement for use under the Director Plan. The administrator also has the authority, subject to the terms of the Director Plan, to amend existing awards to reduce or increase their exercise price, to allow participants the opportunity to transfer outstanding awards to a financial institution or other person or entity selected by the administrator, to institute an exchange program by which outstanding awards may be surrendered in exchange for cash and/or awards of the same or different type that may have different exercise prices and terms, to prescribe rules and to construe and interpret the Director Plan and awards granted thereunder.

Stock Options. The administrator may grant nonstatutory stock options under our 2010 Plan. The exercise price of such options must equal at least the fair market value of our common stock on the date of grant. The term of an option may not exceed 10 years. The administrator will determine the methods of payment of the exercise price of an option, which may include cash, shares or other property acceptable to the plan administrator. After the termination of service of an employee, director or consultant, the participant may exercise his or her option, to the extent vested as of such date of termination, for the period of time stated in his or her option agreement. In no event may an option be exercised later than the expiration of its term.

Stock Appreciation Rights. Stock appreciation rights may be granted under our 2010 Plan. Subject to the provisions of our 2010 Plan, the administrator determines the terms of stock appreciation rights, including when such rights vest and become exercisable and whether to settle such awards in cash or with shares of our common stock, or a combination thereof, except that the per share exercise price for the shares to be issued pursuant to the exercise of a stock appreciation right will be no less than 100% of the fair market value per share on the date of grant. The term of a stock appreciation right may not exceed 10 years. Other specific terms will be set forth in an award agreement.

Restricted Stock. Restricted stock may be granted under our 2010 Plan. Shares of restricted stock will vest and the restrictions on such shares will lapse, in accordance with terms and conditions established by the administrator. The administrator, in its sole discretion, may accelerate the time at which any restrictions will lapse or be removed. Recipients of restricted stock awards generally will have voting and dividend rights with respect to such shares upon grant without regard to vesting, unless the administrator provides otherwise. Shares of restricted stock that do not vest for any reason will be forfeited by the recipient and will revert to us. The specific terms will be set forth in an award agreement.

Restricted Stock Units. Restricted stock units may be granted under our 2010 Plan. The administrator determines the terms and conditions of restricted stock units including the vesting criteria, which may include achievement of specified performance criteria or continued service to us, and the form and timing of payment. The administrator, in its sole discretion, may accelerate the time at which any restrictions will lapse or be removed. The administrator determines in its sole discretion whether an award will be settled in stock, cash or a combination of both. The specific terms will be set forth in an award agreement.

Performance Units and Performance Shares. Performance units and performance shares may be granted under our 2010 Plan. The administrator will establish performance goals in its discretion, which depending on the extent to which they are met, will determine the number and/or the value of performance units and performance shares to be paid out to participants. After the grant of a performance unit or performance share, the administrator, in its sole discretion, may reduce or waive any performance objectives or other vesting provisions for such performance units or performance shares. Performance units will have an initial dollar value established by the administrator prior to the date of grant. Performance shares will have an initial value equal to the fair market value of our common stock on the date of grant. The administrator, in its sole discretion, may pay earned performance units or performance shares in the form of cash, in shares or in some combination thereof. The specific terms will be set forth in an award agreement.

Transferability of Awards. Unless the administrator provides otherwise, our Director Plan generally does not allow for the transfer of awards and only the recipient of an option or stock appreciation right may exercise such an award during his or her lifetime.

Certain Adjustments. In the event of certain changes in our capitalization, to prevent diminution or enlargement of the benefits or potential benefits available under the Director Plan, the administrator will adjust the number and class of shares that may be delivered under the Plan and/or the number, class and price of shares covered by each outstanding award, and the numerical share limits set forth in the 2010 Plan. In the event of our proposed liquidation or dissolution, the administrator will notify participants as soon as practicable and all awards will terminate immediately prior to the consummation of such proposed transaction.

Merger or Change in Control. Our Director Plan provides that in the event of a merger or change in control, as defined under the Director Plan, each outstanding award will be treated as the administrator determines. Provided, however, that in the event of a change in control, all of the participant's awards will fully vest and become exercisable and all performance goals or other vesting requirements will be deemed achieved at 100% of target levels. In addition, if an option or stock appreciation right is not assumed or substituted in the event of a change in control, the administrator will notify the participant that such award will be exercisable for a specified period prior to the transaction, and such award will terminate upon the expiration of such period.

Amendment, Termination. Our board of directors has the authority to amend, suspend or terminate the Director Plan provided such action does not impair the existing rights of any participant. Our Director Plan will automatically terminate in 2020, unless we terminate it sooner.

Automatic Director Grants. We have also adopted an automatic director grant policy, which provides for the automatic grant of nonstatutory stock options to our non-employee directors. Under the policy, each non-employee director, who first becomes a non-employee director following the effective date of the first registration statement filed by us and declared effective with respect to any class of our securities, will be automatically granted a stock option to purchase 50,000 shares of our common stock on the date such person first becomes a non-employee director. A director who is an employee and who ceases to be an employee, but who remains a director will not receive such an initial award. In addition, each non-employee director will be automatically granted an annual stock option to purchase 25,000 shares of our common stock on the date of each annual meeting beginning on the date of the first annual meeting that is held at least six months after such non-employee director received his or her initial award. In connection with the pricing of this initial public offering, each non-employee director serving on our board of directors at the time of this offering will be automatically granted an option to purchase 50,000 shares of our common stock at the price per share at which such common stock is sold in this offering.

2010 Employee Stock Purchase Plan. Concurrently with this offering, we are establishing our 2010 Employee Stock Purchase Plan, or the ESPP. Our board of directors has adopted, and we expect our stockholders to approve, the ESPP prior to the closing of this offering. Our executive officers and all of our other employees will be allowed to participate in our ESPP.

A total of 1,500,000 shares of our common stock will be made available for sale under our ESPP. In addition, our ESPP provides for annual increases in the number of shares available for issuance under the ESPP on the first day of each fiscal year beginning with the 2012 fiscal year, equal to the least of:

- 4,000,000 shares;
- 2% of the outstanding shares of our common stock as of the last day of our immediately preceding fiscal year; or
- such other amount as may be determined by the administrator.

Our board of directors or its committee has full and exclusive authority to interpret the terms of the ESPP and determine eligibility.

Our employees are eligible to participate if they are customarily employed by us or any participating subsidiary for at least 20 hours per week and more than five months in any calendar year. However, an employee may not be granted rights to purchase stock under our ESPP if such employee:

- immediately after the grant would own stock possessing 5% or more of the total combined voting power or value of all classes of our capital stock or
- holds rights to purchase stock under all of our employee stock purchase plans that would accrue at a rate that exceeds $25,000 worth of our stock for each calendar year.

Our ESPP is intended to qualify under Code Section 423, and provides for consecutive, overlapping 24-month offering periods. The offering periods generally start on the first trading day on or after March 1 and September 1 of each year, except for the first such offering period which will commence on the first trading day on or after the effective date of this offering and will end on the earlier of the first trading day on or after September 1, 2012, or 27 months from the beginning of the offering period. The second offering period under the ESPP will commence on the first trading day on or after September 1, 2011. Each offering period will generally consist of four purchase periods in which shares may be purchased on a participant's behalf. Each purchase period will be approximately six months and will begin after one exercise date and will end with the next exercise date approximately six months later, except that the first purchase period of an offering period will begin on the enrollment date of each offering period and end on the next exercise date. The administrator may, in its discretion, modify the terms of future offering periods and/or purchase periods.

Our ESPP permits participants to purchase common stock through payroll deductions of up to 20% of their eligible compensation, which includes a participant's base straight time gross earnings, commissions, payments for overtime and shift premium, but exclusive of payments for incentive compensation, bonuses and other similar compensation. A participant may purchase a maximum of 7,500 shares of common stock during each purchase period.

On the first trading day of each offering period, each participant automatically is granted an option to purchase shares of our common stock. The option expires at the end of the offering period or upon termination of employment, whichever is earlier, but is exercised at the end of each purchase period to the extent of the payroll deductions accumulated during such purchase period. The purchase price of the shares will be 85% of the lower of the fair market value of our common stock on the first trading day of the offering period or on the last day of the offering period. To the extent permitted by applicable laws or regulations, if the fair market value of the common stock on any exercise date in an offering period is lower than the fair market value of the common stock on the enrollment date of such offering period, then all participants in the offering period will be automatically withdrawn from the offering period immediately after the exercise of their option and automatically re-enrolled in the immediately following offering period. Participants may end their participation at any time during an offering period, and will be paid their accrued payroll deductions that have not yet been used to purchase shares of common stock. Participation ends automatically upon termination of employment with us.

A participant may not transfer rights granted under the ESPP other than by will, the laws of descent and distribution or as otherwise provided under the ESPP.

In the event of our merger or change in control, as defined under the ESPP, a successor corporation may assume or substitute each outstanding purchase right. If the successor corporation refuses to assume or substitute for the outstanding purchase rights, the offering period then in progress will be shortened, and a new exercise date will be set which will occur prior to the proposed merger or change in control. The administrator will notify each participant in writing that the exercise date has been changed and that the participant's option will be exercised automatically on the new exercise date unless the participant has already withdrawn from the offering period.

Our ESPP will automatically terminate in 2030, unless we terminate it sooner. In addition, our board of directors has the authority to amend, suspend or terminate our ESPP, except that, subject to certain exceptions described in the ESPP, no such action may adversely affect any outstanding rights to purchase stock under our ESPP.

401(k) Plan. We maintain a tax-qualified 401(k) retirement plan for all employees who satisfy certain eligibility requirements, including requirements relating to age and length of service. Under our 401(k) plan, employees may elect to defer any amount of their eligible compensation subject to applicable annual Code limits. We currently do not match any contributions made by our employees, including executives. We intend for the 401(k) plan to qualify under Code Sections 401(a) and 501(a) so that contributions by employees to the 401(k) plan, and income earned on those contributions, are not taxable to employees until withdrawn from the 401(k) plan.

Limitation on Liability and Indemnification Matters

Our amended and restated certificate of incorporation and bylaws that will become effective upon the closing of this offering contain provisions that limit the personal liability of our directors for monetary damages to the fullest extent permitted by Delaware law. Consequently, our directors will not be personally liable to us or our stockholders for monetary damages for any breach of fiduciary duties as directors, except liability for:

- any breach of the director's duty of loyalty to us or our stockholders;
- any act or omission not in good faith or that involves intentional misconduct or a knowing violation of law;
- unlawful payments of dividends or unlawful stock repurchases or redemptions as provided in Section 174 of the Delaware General Corporation Law; or
- any transaction from which the director derived an improper personal benefit.

Our amended and restated certificate of incorporation that will become effective upon the closing of this offering, provides that we indemnify our directors to the fullest extent permitted by Delaware law. In addition, our amended and restated bylaws, that will become effective upon the closing of this offering, provide that we indemnify our directors and officers to the fullest extent permitted by Delaware law. Our amended and restated bylaws that will become effective upon the closing of this offering also provide that we shall advance expenses incurred by a director or officer in advance of the final disposition of any action or proceeding, and permit us to secure insurance on behalf of any officer, director, employee or other agent for any liability arising out of his or her actions in that capacity, regardless of whether we would otherwise be permitted to indemnify him or her under the provisions of Delaware law. We have entered and expect to continue to enter into agreements to indemnify our directors, executive officers and other employees as determined by our board of directors. With certain exceptions, these agreements provide for indemnification for related expenses including, among others, attorneys' fees, judgments, fines and settlement amounts incurred by any of these individuals in any action or proceeding. We believe that these bylaw provisions and indemnification agreements are necessary to attract and retain qualified persons as directors and officers. We also maintain directors' and officers' liability insurance.

The limitation of liability and indemnification provisions in our amended and restated certificate of incorporation and bylaws, that will become effective upon the closing of this offering, may discourage stockholders from bringing a lawsuit against our directors for breach of their fiduciary duty of care. They may also reduce the likelihood of derivative litigation against our directors and officers, even though an action, if successful, might benefit us and other stockholders. Further, a stockholder's investment may be adversely affected to the extent that we pay the costs of settlement and damage awards against directors and officers. At present, there is no pending litigation or proceeding involving any of our directors, officers or employees for which indemnification is sought, and we are not aware of any threatened litigation that may result in claims for indemnification.

CERTAIN RELATIONSHIPS AND RELATED PARTY TRANSACTIONS

In addition to the director and executive compensation arrangements discussed above in "Management," we have been a party to the following transactions since January 1, 2007, in which the amount involved exceeded or will exceed $120,000, and in which any director, executive officer or holder of more than 5% of any class of our voting stock, or any member of the immediate family of or entities affiliated with any of them, had or will have a material interest.

Sales of Series E Convertible Preferred Stock

Between July 2008 and July 2009, we issued and sold an aggregate of 26,866,790 shares of our Series E convertible preferred stock at a per share price of $7.00, for aggregate consideration of approximately $188 million. We believe that the terms obtained and consideration received in connection with the Series E financing are comparable to terms available and the amounts we would have received in an arm's-length transaction.

The table below summarizes purchases of shares of our Series E convertible preferred stock by our directors, executive officers, holders of more than 5% of any class of our voting securities, or any member of the immediate family of or any entities affiliated with any of the foregoing persons. In connection with these sales, we granted the purchasers certain registration rights with respect to their securities. See "Description of Capital Stock — Registration Rights." Each outstanding share of our convertible preferred stock will be converted automatically into one share of our common stock upon the closing of this offering.

Purchasers	Shares of Series E convertible preferred stock	Aggregate purchase price
Entities affiliated with Mohr Davidow Ventures(1)	1,571,429	$ 11,000,003
KPCB Holdings, Inc.(2)	1,025,600	7,179,200
Entities affiliated with Maverick Capital Ltd(3)	2,297,996	16,085,972
Entities affiliated with Alloy Ventures(4)	1,504,751	10,533,257
Blackstone Tenex L.P.	2,857,190	20,000,330
Entities affiliated with Deerfield Partners(5)	3,466,488	24,265,416
AllianceBernstein Venture Fund I, L.P.	1,021,430	7,150,010
Intel Capital Corporation	3,178,275	22,247,925
The Wellcome Trust Limited, trustee of The Wellcome Trust	2,857,143	20,000,001
Brook Byers	14,658	102,606
Total	19,794,960	$138,564,720

(1) Consists of 1,571,429 shares held by MDV VII, L.P. as nominee for MDV VII, L.P., MDV VII Leaders' Fund, L.P., MDV ENF VII(A), L.P. and MDV ENF VII(B), L.P. William Ericson, an affiliate of MDV VII, L.P., is a member of our board of directors. Susan Siegel is a general partner of MDV, but is not an affiliate of MDV VII, L.P.

(2) Brook Byers, an affiliate of KPCB Holdings, Inc., is a member of our board of directors.

(3) Consists of 1,039,844 shares held by Maverick Fund Private Investments, Ltd., 706,035 shares held by Maverick II Private Investments, Ltd., 374,722 shares held by Maverick USA Private Investments, LLC and 177,395 shares held by Maverick Fund II, Ltd. David Singer, an affiliate of Maverick Capital Ltd., is a member of our board of directors.

(4) Consists of 752,375 shares held by Alloy Ventures 2005, L.P., 732,596 shares held by Alloy Ventures 2002, L.P. and 19,780 shares held by Alloy Partners 2002, L.P. Michael Hunkapiller, an affiliate of Alloy Ventures, is a member of our board of directors.

(5) Consists of 2,138,823 shares held by Deerfield Private Design International, L.P. and 1,327,665 shares held by Deerfield Private Design Fund, L.P.

Sales of Series F Convertible Preferred Stock

During June 2010 and July 2010, we issued and sold an aggregate of 14,265,782 shares of our Series F convertible preferred stock at a per share price of $7.63, for aggregate consideration of approximately $109 million. We believe that the terms obtained and consideration received in connection with the Series F financing are comparable to terms available and the amounts we would have received in an arm's-length transaction.

The table below summarizes purchases of shares of our Series F convertible preferred stock by our directors, executive officers, holders of more than 5% of any class of our voting securities, or any member of the immediate family of or any entities affiliated with any of the foregoing persons. In connection with these sales, we granted the purchasers certain registration rights with respect to their securities. See "Description of Capital Stock — Registration Rights." Each outstanding share of our convertible preferred stock will be converted automatically into one share of our common stock upon the closing of this offering.

Purchasers	Shares of Series F convertible preferred stock	Aggregate purchase price
Gen-Probe Incorporated	6,553,080	$50,000,000
Entities affiliated with Mohr Davidow Ventures(1)	524,246	3,999,997
KPCB Holdings, Inc.(2)	470,458	3,589,594
Entities affiliated with Maverick Capital Ltd(3)	997,563	7,611,406
Entities affiliated with Alloy Ventures(4)	78,637	600,000
Entities affiliated with Blackstone Cleantech Venture Partners L.P.(5)	1,965,924	15,000,000
Entities affiliated with Deerfield Partners(6)	577,388	4,405,470
Intel Capital Corporation	196,592	1,499,997
The Wellcome Trust Limited, trustee of The Wellcome Trust	475,894	3,631,071
Brook Byers	6,724	51,304
Total	11,846,506	$90,388,839

(1) Consists of 524,246 shares held by MDV VII, L.P. as nominee for MDV VII, L.P., MDV VII Leaders' Fund, L.P., MDV ENF VII(A), L.P. and MDV ENF VII(B), L.P. William Ericson, an affiliate of MDV VII, L.P., is a member of our board of directors. Susan Siegel is a general partner of MDV, but is not an affiliate of MDV VII, L.P.

(2) Brook Byers, an affiliate of KPCB Holdings, Inc., is a member of our board of directors.

(3) Consists of 668,122 shares held by Maverick II Private Investments, Ltd. and 329,441 shares held by Maverick USA Private Investments, LLC. David Singer, an affiliate of Maverick Capital Ltd., is a member of our board of directors.

(4) Consists of 39,319 shares held by Alloy Ventures 2005, L.P., 38,284 shares held by Alloy Ventures 2002, L.P. and 1,034 shares held by Alloy Partners 2002, L.P. Michael Hunkapiller, an affiliate of Alloy Ventures, is a member of our board of directors.

(5) Consists of 13,363 shares held by Blackstone Family Cleantech Investment Partnership L.P., 126,546 shares held by Blackstone Family Cleantech Investment Partnership SMD L.P., 566,841 shares held by Blackstone Tenex L.P. and 1,259,174 shares held by Blackstone Cleantech Venture Partners L.P.

(6) Consists of 356,248 shares held by Deerfield Private Design International, L.P. and 221,140 shares held by Deerfield Private Design Fund, L.P.

Investor Rights Agreement

Certain holders of our convertible preferred stock are entitled to certain registration rights with respect to the common stock issued or issuable upon conversion of the convertible preferred stock. See "Description of Capital Stock — Registration Rights" for more information.

Collaboration 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.

Transactions with Our Executive Officers and Directors and Entities Affiliated with Our Executive Officers and Directors

One of our directors, Randy Livingston, is the Vice President for Business Affairs and Chief Financial Officer of Stanford University. Stanford University ordered a limited production release version of our instrument. Our board of directors has reviewed and discussed this related party transaction and has determined that it is not a bar to Mr. Livingston's independent director status.

One of our directors, David Baltimore, serves on the board of the Broad Foundations including the Broad Institute. The Broad Institute of MIT and Harvard ordered a limited production release of our instrument. Dr. Baltimore is currently not serving on any committees of the board.

Employment of Related Persons

We employ Roger Martin as our Senior Director, Quality, who is the brother of Hugh Martin, our President, Chief Executive Officer and Chairman. Mr. Roger Martin became an employee in June 2009, and in this capacity Mr. Roger Martin's compensation totaled $107,342 in 2009. His current annual base salary is $191,475. On June 10, 2009, Mr. Roger Martin was granted an option to purchase 45,000 shares of our common stock at an exercise price per share of $2.82. Twenty-five percent of such options vested on June 2, 2010, and the remaining shares vest at a rate of 1/48th of the total number of shares subject to the option each month thereafter, subject to continued service with us. As of June 30, 2010, 11,250 shares subject to such option had vested. We believe that Mr. Roger Martin's compensation is comparable with compensation paid to other employees with similar levels of responsibility and years of experience.

Prior to his employment, we engaged Mr. Roger Martin as a contractor. In this capacity, Mr. Roger Martin's compensation totaled $33,240 in 2008 and $77,188 in 2009 before he became an employee. On March 12, 2008, Mr. Roger Martin was granted an option to purchase 3,000 shares of our common stock at an exercise price of $1.26 per share, which option vested monthly over 12 months. All shares subject to such option are vested. We believe that the compensation paid to Mr. Roger Martin was comparable with compensation paid to other consultants with similar levels of responsibility and years of experience.

We employ Kathryn Keho as our Senior Manager, Scientific Collaborations, who is the daughter of Dr. Michael Hunkapiller, a member of our board of directors. Ms. Keho became an employee in February 2009, and in this capacity Ms. Keho's compensation totaled $162,337 in 2009. Her current annual base salary is $174,500. On March 19, 2009, Ms. Keho was granted an option to purchase 40,000 shares of our common stock at an exercise price per share of $1.93. Twenty-five percent of such options vested on June 2, 2010, and the remaining shares vest at a rate of 1/48th of the total number of shares subject to the option each month thereafter, subject to continued service with us. On February 3, 2010, Ms. Keho was granted an option to purchase 10,000 shares of our common stock at an exercise price per share of $4.25. Twenty percent of such options vested on June 1, 2010, and the remaining shares vest at a rate of 1/60th of the total number of shares subject to the option each month thereafter, subject to continued service with us. As of June 30, 2010, 15,333 shares subject to such

options had vested. We believe that Ms. Keho's compensation is comparable with compensation paid to other employees with similar levels of responsibility and years of experience.

Stock Option Awards

Certain stock option grants to our directors and executive officers and related option grant policies are described above in this prospectus under the caption "Management."

Employment Agreements

We have entered into agreements containing compensation, termination and change of control provisions, among others, with certain of our executive officers as described under the caption "Executive Compensation — Employment Agreements and Change of Control Arrangements" above.

Indemnification of Officers and Directors

We have also entered into indemnification agreements with each of our directors and executive officers. The indemnification agreements and our certificate of incorporation and bylaws require us to indemnify our directors and executive officers to the fullest extent permitted by Delaware law. See "Executive Compensation — Limitations on Liability and Indemnification Matters" above.

Policies and Procedures for Related Party Transactions

We have adopted a formal written policy that our executive officers, directors, nominees for election as directors, beneficial owners of more than 5% of any class of our common stock and any member of the immediate family of any of the foregoing persons, are not permitted to enter into a related party transaction with us without the prior consent of our audit committee, subject to the pre-approval exceptions described below. If advance approval is not feasible then the related party transaction will be considered at the audit committee's next regularly scheduled meeting. In approving or rejecting any such proposal, our audit committee is to consider the relevant facts and circumstances available and deemed relevant to our audit committee, including, but not limited to, whether the transaction is on terms no less favorable than terms generally available to an unaffiliated third party under the same or similar circumstances and the extent of the related party's interest in the transaction. Our board of directors has delegated to the chair of our audit committee the authority to pre-approve or ratify any request for us to enter into a transaction with a related party, in which the amount involved is less than $120,000 and where the chair is not the related party. Our audit committee has also reviewed certain types of related party transactions that it has deemed pre-approved even if the aggregate amount involved will exceed $120,000 including, employment of executive officers, director compensation, certain transactions with other organizations, transactions where all stockholders receive proportional benefits, transactions involving competitive bids, regulated transactions and certain banking-related services. All of the transactions described above were entered into prior to the adoption of this policy.

PRINCIPAL STOCKHOLDERS

The following table sets forth information regarding beneficial ownership of our common stock as of July 31, 2010 and as adjusted to reflect the shares of common stock to be issued and sold in the offering assuming no exercise of the underwriters' over-allotment option, by:

- each person or group of affiliated persons known by us to be the beneficial owner of more than 5% of our common stock;
- each of our named executive officers;
- each of our directors; and
- all executive officers and directors as a group.

We have determined beneficial ownership in accordance with SEC rules. The information does not necessarily indicate beneficial ownership for any other purpose. Under these rules, the number of shares of common stock deemed outstanding includes shares issuable upon exercise of options and warrants held by the respective person or group which may be exercised or converted within 60 days after July 31, 2010. For purposes of calculating each person's or group's percentage ownership, stock options and warrants exercisable within 60 days after July 31, 2010 are included for that person or group but not the stock options or warrants of any other person or group.

Applicable percentage ownership is based on 76,504,994 shares of common stock outstanding at July 31, 2010, assuming the automatic conversion of all outstanding shares of our convertible preferred stock on a one-for-one basis into 74,367,120 shares of common stock. For purposes of the table below, we have assumed that shares of common stock will be outstanding upon the closing of this offering, based upon an assumed initial public offering price of $ per share.

Unless otherwise indicated and subject to applicable community property laws, to our knowledge, each stockholder named in the following table possesses sole voting and investment power over the shares listed. Unless otherwise noted below, the address of each stockholder listed on the table is c/o Pacific Biosciences of California, Inc., 1380 Willow Road, Menlo Park, California 94025.

Name and address of beneficial owner	Shares beneficially owned prior to the offering		Shares beneficially owned after the offering	
	Shares	Percentage	Shares	Percentage
5% Stockholders:				
Entities affiliated with Mohr Davidow Ventures[1]	9,196,798	12.02%	9,196,798	
KPCB Holdings, Inc.[2]	6,634,756	9.66%	6,634,756	
Entities affiliated with Maverick Capital Ltd.[3]	6,986,673	9.13%	6,986,673	
Gen-Probe Incorporated[4]	6,553,080	8.57%	6,553,080	
Entities affiliated with Alloy Ventures[5]	5,274,502	6.89%	5,274,502	
Entities affiliated with The Blackstone Group[6]	4,823,114	6.30%	4,823,114	
Entities affiliated with Deerfield Partners[7]	4,043,876	5.29%	4,043,876	
Named executive officers and directors:				
David Baltimore	0	*	0	
Brook Byers[8]	6,729,577	9.66%	6,729,577	
William Ericson[9]	9,196,798	12.02%	9,196,798	
Michael Hunkapiller, PhD[10]	5,274,502	6.89%	5,274,502	
Susan Siegel[11]	130,000	*	130,000	
David Singer	0	*	0	
Randy Livingston[12]	80,000	*	80,000	
Hugh C. Martin[13]	3,200,052	4.08%	3,200,052	
Susan K. Barnes[14]	750,000	*	750,000	
Stephen Turner, PhD[15]	2,806,128	3.64%	2,806,128	
Michael Phillips[16]	714,950	*	714,950	
All directors and executive officers as a group (10 people)[17]	29,545,741	36.79%	29,545,741	

(*) Represents beneficial ownership of less than 1%.

(1) Includes (i) 8,637,833 shares held of record by MDV VII, L.P. as nominee for MDV VII, L.P., MDV VII Leaders' Fund, L.P., MDV ENF VII(A), L.P. and MDV ENF VII(B), L.P.; (ii) 403,714 shares held of record by MDV VII Leaders' Fund, L.P.; and (iii) 155,251 shares held by MDV ENF VII(A), L.P. and MDV ENF VII(B), L.P. The address of these entities is c/o Mohr Davidow Ventures, 3000 Sand Hill Road, Building 3, Suite 290, Menlo Park, CA 94025. Jon Feiber, Bill Ericson, Nancy Schoendorf and Erik Straser have shared voting and investment powers with respect to the shares, and each disclaims beneficial ownership except to the extent of any pecuniary interest therein.

(2) Includes 6,471,066 shares of common stock held by Kleiner Perkins Caufield & Byers XI-A, L.P. and 163,690 shares of common stock held by Kleiner Perkins Caufield & Byers XI-B, L.P. The shares are held for convenience in the name of "KPCB Holdings, Inc. as nominee" for the account of entities affiliated with Kleiner Perkins Caufield & Byers and other individuals and entities that each exercises its own voting and dispositive control over the shares for its own account. KPCB Holdings, Inc. has no voting, dispositive or pecuniary interest in any such shares. The address for these entities is 2750 Sand Hill Road, Menlo Park, CA 94025. Brook Byers, John Doerr, Joseph Lacob, Raymond Lane, Ted Schlein and Russ Siegelman have shared voting and investment powers with respect to the shares, and each disclaims beneficial ownership except to the extent of any pecuniary interest therein.

(3) Includes (i) 2,913,600 shares held of record by Maverick II Private Investments, Ltd,; (ii) 2,600,866 shares held of record by Maverick Fund Private Investments, Ltd.; (iii) 1,294,812 shares held of record by Maverick USA Private Investments, LLC; and (iv) 177,395 shares held of record by Maverick Fund II, Ltd. Maverick Capital, Ltd. is an investment adviser registered under Section 203 of the Investment Advisers Act of 1940 and, as such, may be deemed to have beneficial ownership of the shares held by Maverick II Private Investments, Ltd., Maverick Fund Private Investments, Ltd., Maverick USA Private Investments, LLC and Maverick Fund II, Ltd. through the investment discretion it exercises over these accounts. Maverick Capital Management, LLC is the general partner of Maverick Capital, Ltd. Lee S. Ainslie III is the manager of

Maverick Capital Management, LLC who possesses sole investment discretion, including the ability to vote and dispose of the shares, pursuant to Maverick Capital Management, LLC's regulations. The address for the entities affiliated with Maverick Capital, Ltd. is 300 Crescent Court, 18th Floor, Dallas, TX 75201.

(4) Includes 6,553,080 shares held of record by Gen-Probe Incorporated. The address of this entity is 10210 Genetic Center Drive, San Diego, CA 92121. Carl W. Hull, Gen-Probe's President and Chief Executive Officer, exercises voting power over such shares. Gen-Probe's board of directors, comprised of Henry L. Nordhoff, Armin M. Kessler, John W. Brown, Carl W. Hull, John Martin, Lucy Shapiro, Abraham D. Sofaer, Brian A. McNamee and Phillip M. Schneider, exercises dispositive power over the shares. The board of directors of Gen-Probe acts by majority vote and no one member may act individually to sell these securities. Each disclaims beneficial ownership of the shares except to the extent of any pecuniary interest therein.

(5) Includes (i) 2,637,251 shares held of record by Alloy Ventures 2005, L.P.; (ii) 2,567,917 shares held of record by Alloy Ventures 2002, L.P.; and (iii) 69,334 shares held of record by Alloy Partners 2002, L.P. The address of these entities is c/o Alloy Ventures, 400 Hamilton Avenue, 4th Floor, Palo Alto, CA 94301. With respect to the shares held by Alloy Ventures 2002, L.P.: the General Partner is Alloy Ventures 2002, LLC, of which the Managing Members are: Craig C. Taylor, Daniel I. Rubin, Douglas E. Kelly, John F. Shoch, and Tony Di Bona. Each Managing Member has indirect shared voting and investment powers and each disclaims beneficial ownership except to the extent of any pecuniary interest therein. With respect to the shares held by Alloy Ventures 2005, L.P.: the General Partner is Alloy Ventures 2005, LLC, of which the Managing Members are: Ammar H. Hanafi, Craig C. Taylor, Daniel I. Rubin, Douglas E. Kelly, Michael W. Hunkapiller, John F. Shoch, and Tony Di Bona. Each Managing Member has indirect shared voting and investment powers and each disclaims beneficial ownership except to the extent of any pecuniary interest therein.

(6) Includes (i) 2,857,190 shares held of record by Blackstone Tenex L.P. and (ii) 1,965,924 shares held by Blackstone Cleantech Venture Partners. The address of these entities is c/o The Blackstone Group, 345 Park Avenue, New York, NY 10154. Stephen A. Schwarzman is the Chairman and Chief Executive Officer of Blackstone and exercises voting power over such shares. Mr. Schwarzman disclaims beneficial ownership except to the extent of any pecuniary interest therein.

(7) Includes (i) 2,495,071 shares held of record by Deerfield Private Design International, L.P. and (ii) 1,548,805 shares held of record by Deerfield Private Design Fund, L.P. The address of these entities is c/o Deerfield Management Co., 780 Third Avenue, New York, NY 10017. Deerfield Capital, L.P. is the general partner of Deerfield Private Design Fund, L.P. and Deerfield Private Design International, L.P. James E. Flynn is the managing member of the general partner of Deerfield Capital, L.P. and exercises voting and dispositive power over such shares. Mr. Flynn disclaims beneficial ownership except to the extent of any pecuniary interest therein.

(8) Includes 6,634,756 shares held by entities affiliated with Kleiner Perkins Caufield & Byers (see Footnote (2)) where Mr. Byers is a Managing Director. Mr. Byers disclaims beneficial ownership of any shares held by entities affiliated with Kleiner Perkins Caufield & Byers except to the extent of his pecuniary interest therein.

(9) Includes 9,196,798 shares held of record by funds affiliated with Mohr Davidow Ventures where Mr. Ericson is a Managing Director. Mr. Ericson disclaims beneficial ownership of any shares held of record by funds affiliated with Mohr Davidow Ventures except to the extent of his pecuniary interest therein.

(10) Includes 5,274,502 shares held of record by funds affiliated with Alloy Ventures where Dr. Hunkapiller is a General Partner. Dr. Hunkapiller disclaims beneficial ownership of any shares held of record by funds affiliated with Alloy Ventures except to the extent of his pecuniary interest therein.

(11) Includes 130,000 shares issuable upon exercise of options exercisable within 60 days after July 31, 2010. Susan Siegel is not affiliated with any of funds affiliated with Mohr Davidow Ventures that have invested in us.

(12) Includes 80,000 shares issuable upon exercise of options exercisable within 60 days after July 31, 2010.

(13) Includes (i) 489,743 shares held of record by Mr. Martin, of which 218,758 are subject to repurchase by the company; (ii) 835,802 shares held of record by Hugh Martin Trust UAD 07/14/09; and (iii) 1,874,507 shares issuable upon exercise of options exercisable within 60 days after July 31, 2010.

(14) Includes (i) 94,116 shares held of record by Ms. Barnes, all of which are subject to repurchase by the Company and (ii) 655,884 shares issuable upon exercise of options exercisable within 60 days after July 31, 2010.

(15) Includes (i) 2,170,503 shares held of record by Stephen W. and Andrea P. Turner, Tenants by the Entirety; (ii) 15,625 shares held of record by Andrea Turner; and (iii) 620,000 shares issuable upon exercise of options exercisable within 60 days after July 31, 2010.

(16) Includes (i) 266,625 shares held of record by Mr. Phillips and (ii) 448,325 shares issuable upon exercise of options exercisable within 60 days after July 31, 2010.

(17) Includes 3,808,716 shares issuable upon exercise of options held by our current executive officers and directors exercisable within 60 days after July 31, 2010.

DESCRIPTION OF CAPITAL STOCK

General

The following is a summary of the rights of our common stock and preferred stock and of certain provisions of our amended and restated certificate of incorporation and bylaws, as they will be in effect upon the closing of this offering. For more detailed information, please see our amended and restated certificate of incorporation and bylaws, which are filed as exhibits to the registration statement of which this prospectus is part.

Immediately following the closing of this offering, our authorized capital stock will consist of 1,050,000,000 shares, all with a par value of $0.001 per share, of which:

- 1,000,000,000 shares are designated as common stock and
- 50,000,000 shares are designated as preferred stock.

As of June 30, 2010, we had outstanding 75,227,061 shares of common stock held of record by 197 stockholders, assuming the automatic conversion of all outstanding shares of our preferred stock on a one-for-one basis into 73,305,523 shares of common stock. Pursuant to the terms of our certificate of incorporation, our preferred stock will automatically convert into common stock effective upon the closing of this offering. In addition, as of June 30, 2010, 17,575,343 shares of our common stock were subject to outstanding options. For more information on our capitalization, see “Capitalization” above.

Common Stock

The holders of our common stock are entitled to one vote per share on all matters to be voted on by our stockholders. Subject to preferences that may be applicable to any outstanding shares of preferred stock, holders of common stock are entitled to receive ratably such dividends as may be declared by our board of directors out of funds legally available for that purpose. In the event of our liquidation, dissolution or winding up, the holders of common stock are entitled to share ratably in all assets remaining after the payment of liabilities, subject to the prior distribution rights of preferred stock then outstanding. Holders of common stock have no preemptive, conversion or subscription rights. There are no redemption or sinking fund provisions applicable to the common stock.

Preferred Stock

Upon the closing of this offering, all currently outstanding shares of preferred stock will convert into shares of our common stock on a one-for-one basis and there will be no shares of preferred stock outstanding.

Though we currently have no plans to issue any shares of preferred stock, upon the closing of this offering and the filing of our amended and restated certificate of incorporation, our board of directors will have the authority, without further action by our stockholders, to designate and issue up to 50,000,000 shares of preferred stock in one or more series. Our board of directors may also designate the rights, preferences and privileges of the holders of each such series of preferred stock, any or all of which may be greater than or senior to those granted to the holders of common stock. Though the actual effect of any such issuance on the rights of the holders of common stock will not be known until our board of directors determines the specific rights of the holders of preferred stock, the potential effects of such an issuance include:

- diluting the voting power of the holders of common stock;
- reducing the likelihood that holders of common stock will receive dividend payments;
- reducing the likelihood that holders of common stock will receive payments in the event of our liquidation, dissolution or winding up; and
- delaying, deterring or preventing a change-in-control or other corporate takeover.

Warrants

At June 30, 2010, we had warrants outstanding to purchase 50,569 shares of our common stock, assuming the automatic conversion of our preferred stock into common stock, at exercise prices ranging from $1.30 to $2.02 per share. Warrants to purchase 30,768 shares of common stock will terminate on November 16, 2011. Warrants to purchase 19,801 shares of common stock will terminate on January 21, 2013. Each warrant contains provisions for the adjustment of exercise price and the number of shares issuable upon exercise in the event of stock dividends, stock splits, reorganizations, and reclassifications, consolidations and the like. Each warrant holder was granted certain registration rights on the same terms as those held by preferred stockholders as described below.

Registration Rights

As of June 30, 2010, the holders of an aggregate of 67,080,613 shares of our common stock issuable upon conversion of outstanding preferred stock, are entitled to the following rights with respect to the registration of such shares for public resale under the Securities Act, pursuant to an investor rights agreement by and among us and certain of our stockholders. We refer to these shares collectively as registrable securities.

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

The registration rights terminate upon the earlier of five years after the closing of this offering or, with respect to the registration rights of an individual holder, when the holder can sell all of such holder's registrable securities in any three-month period pursuant to Rule 144 of the Securities Act or another similar exemption.

Demand Registration Rights

If at any time after this offering the holders of at least 30% of the registrable securities then outstanding request in writing that we effect a registration that has a reasonably anticipated aggregate price to the public in excess of $10,000,000, we may be required to register their shares. At most, we are obligated to effect two registrations for the holders of registrable securities in response to these demand registration rights. Depending on certain conditions, however, we may defer such registration for up to 90 days. If the holders requesting registration intend to distribute their shares by means of an underwriting, the managing underwriter of such offering will have the right to limit the number of shares to be underwritten for reasons related to the marketing of the shares.

Piggyback Registration Rights

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

Form S-3 Registration Rights

If at any time after we become entitled under the Securities Act to register our shares on Form S-3 a holder of registrable securities requests in writing that we register their shares for public resale on Form S-3, we will be required to use our best efforts to effect such registration; provided, however, that if such registration would be seriously detrimental to us or our stockholders, we may defer the registration for up to 90 days. We are only obligated to effect up to two registrations on Form S-3 in any 12-month period.

Indemnification

We are obligated to indemnify the selling stockholders and any person who might be deemed to control them or any of their subsidiaries in the event of material misstatements or omissions in the registration statement or related violations of law attributable to us. Each selling stockholder is severally and not jointly, obligated to indemnify us, each underwriter, if any, each person who controls us or any underwriter within the meaning of Section 15 of the Securities Act, and each other selling stockholder in the event of material misstatements or omissions in the registration statement or company violation of the Securities Act attributable to such stockholder. The liability of such selling stockholder shall be limited to an amount equal to the net proceeds to each such selling stockholder.

Voting Rights

Under the provisions of our amended and restated certificate of incorporation to become effective upon the closing of this offering, holders of our common stock are entitled to one vote for each share of common stock held by such holder on any matter submitted to a vote at a meeting of stockholders.

Anti-takeover Effects of Delaware Law and Our Amended and Restated Certificate of Incorporation and Bylaws

Certain provisions of Delaware law and our amended and restated certificate of incorporation and bylaws that will become effective upon the closing of this offering contain provisions that could have the effect of delaying, deferring or discouraging another party from acquiring control of us. These provisions, which are summarized below, are expected to discourage certain types of coercive takeover practices and inadequate takeover bids. These provisions are also designed in part to encourage anyone seeking to acquire control of us to first negotiate with our board of directors. We believe that the advantages gained by protecting our ability to negotiate with any unsolicited and potentially unfriendly acquirer outweigh the disadvantages of discouraging such proposals, including those priced above the then-current market value of our common stock, because, among other reasons, the negotiation of such proposals could improve their terms.

Certificate of Incorporation and Bylaws

Our amended and restated certificate of incorporation and bylaws to become effective upon the closing of this offering 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;
- require that any action to be taken by our stockholders be effected at a duly called annual or special meeting and not by written consent;
- specify that special meetings of our stockholders can be called only by our board of directors, the Chairman of the Board, the Chief Executive Officer or the President;
- establish an advance notice procedure for stockholder approvals to be brought before an annual meeting of our stockholders, including proposed nominations of persons for election to our board of directors;
- provide that directors may be removed only for cause;
- 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; and
- establish that our board of directors is divided into three classes, Class I, Class II and Class III, with each class serving staggered terms.

Delaware Anti-Takeover Statute

We are subject to the provisions of Section 203 of the Delaware General Corporation Law regulating corporate takeovers. In general, Section 203 prohibits a publicly-held Delaware corporation from engaging, under certain circumstances, in a business combination with an interested stockholder for a period of three years following the date the person became an interested stockholder unless:

- prior to the date of the transaction, the board of directors of the corporation approved either the business combination or the transaction which resulted in the stockholder becoming an interested stockholder;
- upon completion of the transaction that resulted in the stockholder becoming an interested stockholder, the interested stockholder owned at least 85% of the voting stock of the corporation outstanding at the time the transaction commenced, excluding for purposes of determining the voting stock outstanding, but not for determining the outstanding voting stock owned by the interested stockholder, (1) shares owned by persons who are directors and also officers, and (2) shares owned by employee stock plans in which employee participants do not have the right to determine confidentially whether shares held subject to the plan will be tendered in a tender or exchange offer; or
- at or subsequent to the date of the transaction, the business combination is approved by the board of directors of the corporation and authorized at an annual or special meeting of stockholders, and not by written consent, by the affirmative vote of at least 66 2/3% of the outstanding voting stock which is not owned by the interested stockholder.

Generally, a business combination includes a merger, asset or stock sale, or other transaction resulting in a financial benefit to the interested stockholder. An interested stockholder is a person who, together with affiliates and associates, owns or, within three years prior to the determination of interested stockholder status, did own 15% or more of a corporation's outstanding voting stock. We expect the existence of this provision to have an anti-takeover effect with respect to transactions our board of directors does not approve in advance. We also anticipate that Section 203 may discourage business combinations or other attempts that might result in a premium over the market price for the shares of common stock held by our stockholders.

The provisions of Delaware law and our amended and restated certificate of incorporation and bylaws to become effective upon the closing of this offering could have the effect of discouraging others from attempting hostile takeovers and, as a consequence, they may also inhibit temporary fluctuations in the market price of our common stock that often result from actual or rumored hostile takeover attempts. These provisions may also have the effect of preventing changes in our management. It is possible that these provisions could make it more difficult to accomplish transactions that stockholders may otherwise deem to be in their best interests.

Transfer Agent and Registrar

Upon the closing of this offering, the transfer agent and registrar for our common stock will be BNY Mellon Shareowner Services.

Listing

We have applied to list our common stock for quotation on the NASDAQ Global Market under the trading symbol "PACB."

SHARES ELIGIBLE FOR FUTURE SALE

Before this offering, there has not been a public market for shares of our common stock. Future sales of substantial amounts of shares of our common stock, including shares issued upon the exercise of outstanding options or warrants, in the public market after this offering, or the possibility of these sales occurring, could cause the prevailing market price for our common stock to fall or impair our ability to raise equity capital in the future.

Upon the closing of this offering, a total of shares of common stock will be outstanding, assuming that there are no exercises of options or warrants after June 30, 2010. Of these shares, all shares of common stock sold in this offering by us, plus any shares sold upon exercise of the underwriters' over-allotment option, will be freely tradable in the public market without restriction or further registration under the Securities Act, unless these shares are held by "affiliates," as that term is defined in Rule 144 under the Securities Act.

The remaining 75,227,061 shares of common stock will be "restricted securities," as that term is defined in Rule 144 under the Securities Act. These restricted securities are eligible for public sale only if they are registered under the Securities Act or if they qualify for an exemption from registration under Rules 144 or 701 under the Securities Act, which are summarized below.

Subject to the lock-up agreements described below and the provisions of Rules 144 and 701 under the Securities Act, these restricted securities will be available for sale in the public market as follows:

Date	Number of shares
On the date of this prospectus	0
Between 90 and 180 days after the date of this prospectus	0
At various times beginning more than 180 days after the date of this prospectus	75,227,061

In addition, of the 17,575,343 shares of our common stock that were subject to stock options outstanding as of June 30, 2010, options to purchase 6,789,833 shares of common stock were vested as of June 30, 2010 and will be eligible for sale 180 days following the effective date of this offering subject to lock-up agreements described below.

Lock-up Agreements

We and all of our directors and officers, as well as the other holders of substantially all shares of common stock outstanding immediately prior to this offering, have agreed that, without the prior written consent of J.P. Morgan Securities Inc. and Morgan Stanley & Co. Incorporated on behalf of the underwriters, we and they will not, during the period ending 180 days after the date of this prospectus:

- offer, pledge, sell, contract to sell, sell any option or contract to purchase, purchase any option or contract to sell, grant any option, right or warrant to purchase, lend or otherwise transfer or dispose of, directly or indirectly, any shares of our common stock or any securities convertible into or exercisable or exchangeable for shares of our common stock or publicly disclose the intention to make any such offer, sale, pledge or disposition; or
- enter into any swap or other arrangement that transfers to another, in whole or in part, any of the economic consequences of ownership of our common stock;

whether any transaction described above is to be settled by delivery of shares of our common stock or such other securities, in cash or otherwise. This agreement is subject to certain exceptions, and is also subject to extension for additional days, as set forth in "Underwriting."

In addition, certain of our stockholders are subject to restrictions in their respective option agreements and restricted stock agreements whereby they have agreed not to sell or otherwise dispose of any shares of our common stock for a period specified by the representative of the underwriters not to exceed 180 days from the

effective date of the registration statement, and to execute any agreement reflecting these provisions as may be requested by us or the managing underwriters. Certain of our holders of preferred stock and holders of outstanding warrants are also subject to restrictions in an investor rights agreement whereby they have agreed not to sell or otherwise transfer or dispose of any of our securities for a period of 180 days following the offering.

Rule 144

In general, under Rule 144 as currently in effect, once we have been subject to public company reporting requirements for at least 90 days, a person who is not deemed to have been one of our affiliates for purposes of the Securities Act at any time during 90 days preceding a sale and who has beneficially owned the shares proposed to be sold for at least six months, including the holding period of any prior owner other than our affiliates, is entitled to sell such shares without complying with the manner of sale, volume limitation or notice provisions of Rule 144, subject to compliance with the public information requirements of Rule 144. If such a person has beneficially owned the shares proposed to be sold for at least one year, including the holding period of any prior owner other than our affiliates, then such person is entitled to sell such shares without complying with any of the requirements of Rule 144.

In general, under Rule 144, as currently in effect, our affiliates or persons selling shares on behalf of our affiliates are entitled to sell upon expiration of the lock-up agreements described above, within any three-month period beginning 90 days after the date of this prospectus, a number of shares that does not exceed the greater of:

- 1% of the number of shares of common stock then outstanding, which will equal approximately shares immediately after this offering; or
- the average weekly trading volume of the common stock during the four calendar weeks preceding the filing of a notice on Form 144 with respect to such sale.

Sales under Rule 144 by our affiliates or persons selling shares on behalf of our affiliates are also subject to certain manner of sale provisions and notice requirements and to the availability of current public information about us.

Rule 701

Rule 701 generally allows a stockholder who purchased shares of our common stock pursuant to a written compensatory plan or contract and who is not deemed to have been an affiliate of our company during the immediately preceding 90 days to sell these shares in reliance upon Rule 144, but without being required to comply with the public information, holding period, volume limitation or notice provisions of Rule 144. Rule 701 also permits affiliates of our company to sell their Rule 701 shares under Rule 144 without complying with the holding period requirements of Rule 144. All holders of Rule 701 shares, however, are required to wait until 90 days after the date of this prospectus before selling such shares pursuant to Rule 701.

As of June 30, 2010, 4,052,088 shares of our outstanding common stock had been issued in reliance on Rule 701 as a result of exercises of stock options and stock awards. These shares will be eligible for resale in reliance on this rule upon expiration of the lockup agreements described above.

Stock Options

We intend to file a registration statement on Form S-8 under the Securities Act covering all of the shares of our common stock subject to options outstanding or reserved for issuance under our stock plans and shares of our common stock issued upon the exercise of options by employees. We expect to file this registration statement as soon as practicable after this offering. In addition, we intend to file a registration statement on Form S-8 or such other form as may be required under the Securities Act for the resale of shares of our common stock issued upon the exercise of options that were not granted under Rule 701. We expect to file this registration statement as soon as permitted under the Securities Act. However, the shares registered on Form S-8 will be subject to volume limitations, manner of sale, notice and public information requirements of Rule 144 and will not be eligible for resale until expiration of the lock-up agreements to which they are subject.

Registration Rights

The holders of 67,131,182 shares of common stock and common stock issuable upon exercise of warrants or their transferees are entitled to various rights with respect to the registration of these shares under the Securities Act. Registration of these shares under the Securities Act would result in these shares becoming fully tradable without restriction under the Securities Act immediately upon the effectiveness of the registration, except for shares purchased by affiliates. See “Description of Capital Stock — Registration Rights” for additional information.

MATERIAL UNITED STATES FEDERAL INCOME TAX AND ESTATE TAX CONSEQUENCES TO NON-U.S. HOLDERS

The following is a summary of the material U.S. federal income tax and estate tax consequences of the ownership and disposition of our common stock to non-U.S. holders, but does not purport to be a complete analysis of all the potential tax considerations relating thereto. This summary is based upon the provisions of the Internal Revenue Code, Treasury regulations promulgated thereunder, administrative rulings and judicial decisions, all as of the date hereof. These authorities may be changed, possibly retroactively, so as to result in U.S. federal income or estate tax consequences different from those set forth below.

This summary does not address the tax considerations arising under the laws of any non-U.S., state or local jurisdiction or under U.S. federal gift and estate tax laws, except to the limited extent below. In addition, this discussion does not address tax considerations applicable to an investor's particular circumstances or to investors that may be subject to special tax rules, including, without limitation:

- banks, insurance companies or other financial institutions;
- persons subject to the alternative minimum tax;
- tax-exempt organizations;
- controlled foreign corporations, passive foreign investment companies and corporations that accumulate earnings to avoid U.S. federal income tax;
- dealers in securities or currencies;
- traders in securities that elect to use a mark-to-market method of accounting for their securities holdings;
- persons that own, or are deemed to own, more than five percent of our capital stock, except to the extent specifically set forth below;
- certain former citizens or long-term residents of the United States;
- persons who hold our common stock as a position in a hedging transaction, "straddle," "conversion transaction" or other risk reduction transaction;
- persons who do not hold our common stock as a capital asset within the meaning of Section 1221 of the Internal Revenue Code (generally, for investment purposes); or
- persons deemed to sell our common stock under the constructive sale provisions of the Internal Revenue Code.

In addition, if a partnership or entity classified as a partnership for U.S. federal income tax purposes holds our common stock, the tax treatment of a partner generally will depend on the status of the partner and upon the activities of the partnership. Accordingly, partnerships that hold our common stock, and partners in such partnerships, should consult their tax advisors.

YOU ARE URGED TO CONSULT YOUR TAX ADVISOR WITH RESPECT TO THE APPLICATION OF THE U.S. FEDERAL INCOME TAX LAWS TO YOUR PARTICULAR SITUATION, AS WELL AS ANY TAX CONSEQUENCES OF THE PURCHASE, OWNERSHIP AND DISPOSITION OF OUR COMMON STOCK ARISING UNDER THE U.S. FEDERAL ESTATE OR GIFT TAX RULES OR UNDER THE LAWS OF ANY STATE, LOCAL, NON-U.S. OR OTHER TAXING JURISDICTION OR UNDER ANY APPLICABLE TAX TREATY.

Non-U.S. Holder Defined

For purposes of this discussion, you are a non-U.S. holder if you are any holder, other than a partnership or entity classified as a partnership for U.S. federal income tax purposes, that is not:

- an individual citizen or resident of the United States;

- a corporation or other entity taxable as a corporation created or organized in the United States or under the laws of the United States or any political subdivision thereof;
- an estate whose income is subject to U.S. federal income tax regardless of its source; or
- a trust (x) whose administration is subject to the primary supervision of a U.S. court and which has one or more U.S. persons who have the authority to control all substantial decisions of the trust or (y) which has made an election to be treated as a U.S. person.

Distributions

We have not made any distributions on our common stock and we do not plan to make any distributions for the foreseeable future. However, if we do make distributions on our common stock, those payments will constitute dividends for U.S. tax purposes to the extent paid from our current or accumulated earnings and profits, as determined under U.S. federal income tax principles. To the extent those distributions exceed both our current and our accumulated earnings and profits, they will constitute a return of capital and will first reduce your basis in our common stock, but not below zero, and then will be treated as gain from the sale of stock.

Any dividend paid to you generally will be subject to U.S. withholding tax either at a rate of 30% of the gross amount of the dividend or such lower rate as may be specified by an applicable income tax treaty. In order to receive a reduced treaty rate, you must provide us with an IRS Form W-8BEN or other appropriate version of IRS Form W-8 certifying qualification for the reduced rate. A non-U.S. holder of shares of our common stock eligible for a reduced rate of U.S. withholding tax pursuant to an income tax treaty may obtain a refund of any excess amounts withheld by filing an appropriate claim for refund with the IRS. If the non-U.S. holder holds the stock through a financial institution or other agent acting on the non-U.S. holder's behalf, the non-U.S. holder will be required to provide appropriate documentation to the agent, which then will be required to provide certification to us or our paying agent, either directly or through other intermediaries.

Dividends received by you that are effectively connected with your conduct of a U.S. trade or business, and, if an income tax treaty applies, attributable to a permanent establishment maintained by you in the United States, are exempt from such withholding tax. In order to obtain this exemption, you must provide us with an IRS Form W-8ECI or other applicable IRS Form W-8 properly certifying such exemption. Such effectively connected dividends, although not subject to withholding tax, are generally taxed at the same graduated rates applicable to U.S. persons, net of certain deductions and credits. In addition, if you are a corporate non-U.S. holder, dividends you receive that are effectively connected with your conduct of a U.S. trade or business may also be subject to a branch profits tax at a rate of 30% or such lower rate as may be specified by an applicable income tax treaty.

Gain on Disposition of Common Stock

You generally will not be required to pay U.S. federal income tax on any gain realized upon the sale or other disposition of our common stock unless:

- the gain is effectively connected with your conduct of a U.S. trade or business, and, if an income tax treaty applies, the gain is attributable to a permanent establishment maintained by you in the United States;
- you are an individual who is present in the United States for a period or periods aggregating 183 days or more during the calendar year in which the sale or disposition occurs and certain other conditions are met; or
- our common stock constitutes a U.S. real property interest by reason of our status as a "United States real property holding corporation," or a USRPHC, for U.S. federal income tax purposes, at any time within the shorter of the five-year period preceding the disposition or your holding period for our common stock.

We believe that we are not currently and will not become a USRPHC. However, because the determination of whether we are a USRPHC depends on the fair market value of our U.S. real property relative to the fair market value of our other business assets, there can be no assurance that we will not become a USRPHC in the

future. Even if we become a USRPHC, however, as long as our common stock is regularly traded on an established securities market, such common stock will be treated as a U.S. real property interest only if you actually or constructively hold more than five percent of such regularly traded common stock at any time during the applicable period described above.

If you are a non-U.S. holder described in the first bullet above, you will generally be required to pay tax on the gain derived from the sale, net of certain deductions or credits, under regular graduated U.S. federal income tax rates, and corporate non-U.S. holders described in the first bullet above may be subject to branch profits tax at a 30% rate or such lower rate as may be specified by an applicable income tax treaty. If you are an individual non-U.S. holder described in the second bullet above, you will be required to pay a flat 30% tax on the gain derived from the sale, which tax may be offset by U.S. source capital losses, even though you are not considered a resident of the United States. You should consult any applicable income tax or other treaties that may provide for different rules.

Federal Estate Tax

Our common stock beneficially owned by an individual who is not a citizen or resident of the United States, as defined for U.S. federal estate tax purposes, at the time of death will generally be includable in the decedent's gross estate for U.S. federal estate tax purposes, unless an applicable estate tax treaty provides otherwise.

Backup Withholding and Information Reporting

Generally, we must report annually to the IRS the amount of dividends paid to you, your name and address, and the amount of tax withheld, if any. A similar report will be sent to you. Pursuant to applicable income tax treaties or other agreements, the IRS may make these reports available to tax authorities in your country of residence.

Payments of dividends or of proceeds on the disposition of stock made to you may be subject to additional information reporting and backup withholding at a current rate of 28% unless you establish an exemption, for example by properly certifying your non-U.S. status on a Form W-8BEN or another appropriate version of IRS Form W-8. Notwithstanding the foregoing, backup withholding and information reporting may apply if either we or our paying agent has actual knowledge, or reason to know, that you are a U.S. person.

Backup withholding is not an additional tax; rather, the U.S. income tax liability of persons subject to backup withholding will be reduced by the amount of tax withheld. If withholding results in an overpayment of taxes, a refund or credit may generally be obtained from the IRS, provided that the required information is furnished to the IRS in a timely manner.

Recently Enacted Legislation Affecting Taxation of Our Common Stock Held By or Through Foreign Entities

Recently enacted legislation generally will impose a U.S. federal withholding tax of 30% on dividends and the gross proceeds of a disposition of our common stock paid after December 31, 2012 to a "foreign financial institution," as specially defined under these rules, unless such institution enters into an agreement with the U.S. government to withhold on certain payments and to collect and provide to the U.S. tax authorities substantial information regarding U.S. account holders of such institution, which includes certain equity and debt holders of such institution, as well as certain account holders that are foreign entities with U.S. owners. The legislation also will generally impose a U.S. federal withholding tax of 30% on dividends and the gross proceeds of a disposition of our common stock paid after December 31, 2012 to a non-financial foreign entity unless such entity provides the withholding agent with a certification identifying the direct and indirect U.S. owners of the entity. Under certain circumstances, a non-U.S. holder might be eligible for refunds or credits of such taxes. Prospective investors are encouraged to consult with their own tax advisors regarding the possible implications of this legislation on their investment in our common stock.

THE PRECEDING DISCUSSION OF U.S. FEDERAL TAX CONSIDERATIONS IS FOR GENERAL INFORMATION ONLY. IT IS NOT TAX ADVICE. EACH PROSPECTIVE INVESTOR SHOULD CONSULT ITS OWN TAX ADVISOR REGARDING THE PARTICULAR U.S. FEDERAL, STATE AND LOCAL AND NON-U.S. TAX CONSEQUENCES OF PURCHASING, HOLDING AND DISPOSING OF OUR COMMON STOCK, INCLUDING THE CONSEQUENCES OF ANY PROPOSED CHANGE IN APPLICABLE LAWS.

UNDERWRITING

We are offering the shares of common stock described in this prospectus through a number of underwriters. J.P. Morgan Securities Inc. and Morgan Stanley & Co. Incorporated are acting as joint book-running managers of the offering and as representatives of the underwriters. We have entered into an underwriting agreement with the underwriters. Subject to the terms and conditions of the underwriting agreement, we have agreed to sell to the underwriters, and each underwriter has severally agreed to purchase, at the public offering price less the underwriting discounts and commissions set forth on the cover page of this prospectus, the number of shares of common stock listed next to its name in the following table.

Name	Number of shares
J.P. Morgan Securities Inc.	
Morgan Stanley & Co. Incorporated	
Deutsche Bank Securities Inc.	
Piper Jaffray & Co.	
Total	

The underwriters are committed to purchase all the shares of common stock offered by us if they purchase any shares. The underwriting agreement also provides that if an underwriter defaults, the purchase commitments of non-defaulting underwriters may also be increased or the offering may be terminated.

The underwriters propose to offer the shares of common stock directly to the public at the public offering price set forth on the cover page of this prospectus and to certain dealers at that price less a concession not in excess of $ per share. After the initial public offering of the shares, the offering price and other selling terms may be changed by the underwriters. Sales of shares made outside of the United States may be made by affiliates of the underwriters. The representatives have advised us that the underwriters do not intend to confirm discretionary sales in excess of 5% of the shares of common stock offered in this offering.

The underwriters have an option to purchase up to additional shares of common stock from us to cover sales of shares by the underwriters which exceed the number of shares specified in the table above. The underwriters have 30 days from the date of this prospectus to exercise this over-allotment option. If any shares are purchased with this over-allotment option, the underwriters will purchase shares in approximately the same proportion as shown in the table above. If any additional shares of common stock are purchased, the underwriters will offer the additional shares on the same terms as those on which the shares are being offered.

The underwriting discounts and commissions are equal to the public offering price per share of common stock less the amount paid by the underwriters to us per share of common stock. The underwriting discounts and commissions are $ per share. The following table shows the per share and total underwriting discounts and commissions payable by us to the underwriters assuming both no exercise and full exercise of the underwriters' option to purchase additional shares.

	Without over-allotment exercise	With full over-allotment exercise
Per share	$	$
Total	$	$

We estimate that the total expenses of this offering, including registration, filing and listing fees, printing fees and legal and accounting expenses, but excluding the underwriting discounts and commissions, will be approximately $, all of which is payable by us. The underwriters have agreed to reimburse us for a portion of our out-of-pocket expenses in connection with this offering.

A prospectus in electronic format may be made available on the web sites maintained by one or more underwriters, or selling group members, if any, participating in the offering. The underwriters may agree to allocate a number of shares to underwriters and selling group members for sale to their online brokerage account holders. Internet distributions will be allocated by the representatives to underwriters and selling group members that may make Internet distributions on the same basis as other allocations.

We have agreed that we will not, subject to limited exceptions, (i) offer, pledge, sell, contract to sell, sell any option or contract to purchase, purchase any option or contract to sell, grant any option, right or warrant to purchase, lend or otherwise transfer or dispose of, directly or indirectly, or file with the SEC a registration statement under the Securities Act relating to, any shares of our common stock or securities convertible into or exercisable or exchangeable for any shares of our common stock, or (ii) enter into any swap or other arrangement that transfers, in whole or in part, any of the economic consequences associated with the ownership of any shares of common stock or any such other securities, whether any such transaction described in clause (i) or (ii) above is to be settled by delivery of common stock or such other securities, in case or otherwise, without the prior written consent of J.P. Morgan Securities Inc. and Morgan Stanley & Co. Incorporated for a period of 180 days after the date of this prospectus other than (A) the shares of our common stock to be sold in this offering, (B) any shares of our common stock issued upon the exercise of options granted under our stock plans, (C) the grant or issuance of employee, consultant or director stock options under our stock plans in existence at the time of this offering, (D) the issuance of securities in connection with our acquisition of the securities, business, property or other assets of another person or entity, or pursuant to any employee benefit plans assumed by us in connection with any such acquisition, provided that the aggregate number of shares of common stock that we may sell or issue or agree to sell or issue pursuant to this clause (D) shall not exceed 10% of the total number of shares of common stock issued and outstanding immediately prior to the completion of this offering or (E) the issuance of securities in connection with joint ventures, commercial relationships or other strategic transactions, provided that, prior to any issuance the Company shall cause each recipient of such securities to execute and deliver a lock-up agreement to J.P. Morgan Securities Inc. and Morgan Stanley & Co. Incorporated. Notwithstanding the foregoing, if (1) during the last 17 days of the 180-day restricted period, we issue an earnings release or material news or a material event relating to our company occurs; or (2) prior to the expiration of the 180-day restricted period, we announce that we will release earnings results during the 16-day period beginning on the last day of the 180-day period, the restrictions described above shall continue to apply until the expiration of the 18-day period beginning on the issuance of the earnings release or the occurrence of the material news or material event.

Our directors and executive officers and substantially all of our equity holders have entered into lock-up agreements with the underwriters prior to the commencement of this offering pursuant to which each of these persons or entities, with limited exceptions, for a period commencing on the date of the lock-up agreement and ending 180 days after the date of this prospectus, may not, without the prior written consent of J.P. Morgan Securities Inc. and Morgan Stanley & Co. Incorporated, (1) offer, pledge, sell, contract to sell, sell any option or contract to purchase, purchase any option or contract to sell, grant any option, right or warrant to purchase, lend or otherwise transfer or dispose of, directly or indirectly, any shares of our common stock or any securities convertible into or exercisable or exchangeable for shares of our common stock, including without limitation, common stock or such other securities which may be deemed to be beneficially owned by such directors, executive officers and equity holders in accordance with the rules and regulations of the SEC and securities which may be issued upon exercise of a stock option or warrant, or publicly disclose the intention to make any offer, sale, pledge, disposition or filing, or (2) enter into any swap or other agreement that transfers, in whole or in part, any of the economic consequences of ownership of the common stock or such other securities, whether any such transaction described in clause (1) or (2) above is to be settled by delivery of common stock or such other securities, in cash or otherwise, or (3) make any demand for or exercise any right with respect to the registration of any shares of our common stock or any security convertible into or exercisable or exchangeable for our common stock in each case other than (A) any shares of common stock to be sold by the director, officer or stockholder pursuant to the underwriting agreement; (B) shares of common stock or any other securities acquired in this offering or in open market transactions after the completion of this offering; (C) transfers of shares of common stock or any other securities (i) to an immediate family member or a trust formed for the direct or indirect benefit of the director, officer or stockholder or an immediate family member of the director, officer or stockholder or (ii) by bona fide gift, will or intestacy; (D) if the stockholder is a business entity, distributions of shares of common stock or any other securities to (i) members, partners, stockholders or other equity owners of the stockholder, (ii) wholly-owned subsidiaries or any affiliates of the stockholder, or (iii) any business entity that is managed and governed by the same management company as the stockholder or any business entity that is controlled by, under common control with, managed or advised by the same management company or registered

investment advisor (or an affiliate of such management company or registered investment advisor) as the stockholder; (E) if the stockholder is a trust, transfers of shares of common stock or any other securities to a trustor or beneficiary of the trust; provided that in the case of any transfer or distribution pursuant to clauses (C), (D) or (E), each transferee, donee or distributee shall execute and deliver to J.P. Morgan Securities Inc. and Morgan Stanley & Co. Incorporated a lock-up agreement; and provided, further, that in the case of any acquisition, transfer or distribution pursuant to clauses (B), (C), (D) or (E), no filing by any party (acquirer, donor, donee, transferor or transferee) under the Exchange Act, or other public announcement shall be required or shall be made voluntarily in connection with such acquisition, transfer or distribution (other than a filing on a Form 5 made after the expiration of the 180-day period referred to above); or (F) the establishment of a trading plan pursuant to Rule 10b5-1 under the Exchange Act for the transfer of shares of common stock or any other securities, provided that such plan does not provide for the transfer of common stock during the restricted period and no public announcement or filing under the Exchange Act regarding the establishment of such plan shall be required of or voluntarily made by or on behalf of us or the director, officer or stockholder. Notwithstanding the foregoing, if (1) during the last 17 days of the 180-day restricted period, we issue an earnings release or material news or a material event relating to our company occurs; or (2) prior to the expiration of the 180-day restricted period, we announce that we will release earnings results during the 16-day period beginning on the last day of the 180-day period, the restrictions described above shall continue to apply until the expiration of the 18-day period beginning on the issuance of the earnings release or the occurrence of the material news or material event.

We have agreed to indemnify the underwriters against certain liabilities, including liabilities under the Securities Act.

In connection with this offering, the underwriters may engage in stabilizing transactions, which involves making bids for, or purchasing and selling shares of, common stock in the open market for the purpose of preventing or retarding a decline in the market price of the common stock while this offering is in progress. These stabilizing transactions may include making short sales of the common stock, which involves the sale by the underwriters of a greater number of shares of common stock than they are required to purchase in this offering, and purchasing shares of common stock on the open market to cover positions created by short sales. Short sales may be “covered” shorts, which are short positions in an amount not greater than the underwriters’ over-allotment option referred to above, or may be “naked” shorts, which are short positions in excess of that amount. The underwriters may close out any covered short position either by exercising their over-allotment option, in whole or in part, or by purchasing shares in the open market. In making this determination, the underwriters will consider, among other things, the price of shares available for purchase in the open market compared to the price at which the underwriters may purchase shares through the over-allotment option. A naked short position is more likely to be created if the underwriters are concerned that there may be downward pressure on the price of the common stock in the open market that could adversely affect investors who purchase in this offering. To the extent that the underwriters create a naked short position, they will purchase shares in the open market to cover the position.

The underwriters have advised us that, pursuant to Regulation M of the Securities Act, they may also engage in other activities that stabilize, maintain or otherwise affect the price of the common stock, including the imposition of penalty bids. This means that if the representatives of the underwriters purchase common stock in the open market in stabilizing transactions or to cover short sales, the representatives can require the underwriters that sold those shares as part of this offering to repay the underwriting discount received by them.

These activities may have the effect of raising or maintaining the market price of the common stock or preventing or retarding a decline in the market price of the common stock and, as a result, the price of the common stock may be higher than the price that otherwise might exist in the open market. If the underwriters commence these activities, they may discontinue them at any time. The underwriters may carry out these transactions on the NASDAQ Global Market, in the over-the-counter market or otherwise.

Other than in the United States, no action has been taken by us or the underwriters that would permit a public offering of the shares of common stock offered by this prospectus in any jurisdiction where action for that purpose is required. The shares of common stock offered by this prospectus may not be offered or sold, directly or indirectly, nor may this prospectus or any other offering material or advertisements in connection with the

offer and sale of any such shares of common stock be distributed or published in any jurisdiction, except under circumstances that will result in compliance with the applicable rules and regulations of that jurisdiction. Persons into whose possession this prospectus comes are advised to inform themselves about and to observe any restrictions relating to the offering and the distribution of this prospectus. This prospectus does not constitute an offer to sell or a solicitation of an offer to buy any shares of common stock offered by this prospectus in any jurisdiction in which such an offer or a solicitation is unlawful.

This document is only being distributed to and is only directed at (i) persons who are outside the United Kingdom or (ii) to investment professionals falling within Article 19(5) of the Financial Services and Markets Act 2000 (Financial Promotion) Order 2005, referred to as the Order, or (iii) high net worth entities and other persons to whom it may lawfully be communicated, falling within Article 49(2)(a) to (d) of the Order, all such persons together being referred to as relevant persons. The shares of common stock are only available to, and any invitation, offer or agreement to subscribe, purchase or otherwise acquire such shares of common stock will be engaged in only with, relevant persons. Any person who is not a relevant person should not act or rely on this document or any of its contents.

In relation to each Member State of the European Economic Area which has implemented the Prospectus Directive, each referred to as a Relevant Member State, from and including the date, or Relevant Implementation Date, on which the European Union Prospectus Directive, or EU Prospectus Directive, is implemented in that Relevant Member State, an offer of shares of common stock described in this prospectus may not be made to the public in that Relevant Member State prior to the publication of a prospectus in relation to the shares which has been approved by the competent authority in that Relevant Member State or, where appropriate, approved in another Relevant Member State and notified to the competent authority in that Relevant Member State, all in accordance with the EU Prospectus Directive, except that it may, with effect from and including the Relevant Implementation Date, make an offer of shares to the public in that Relevant Member State at any time:

- to legal entities which are authorized or regulated to operate in the financial markets or, if not so authorized or regulated, whose corporate purpose is solely to invest in securities;
- to any legal entity which has two or more of (1) an average of at least 250 employees during the last financial year; (2) a total balance sheet of more than €43,000,000 and (3) an annual net turnover of more than €50,000,000, as shown in its last annual or consolidated accounts;
- to fewer than 100 natural or legal persons, other than qualified investors as defined in the EU Prospectus Directive, subject to obtaining the prior consent of the book-running managers for any such offer; or
- in any other circumstances which do not require the publication by the Issuer of a prospectus pursuant to Article 3 of the Prospectus Directive.

Prior to this offering, there has been no public market for our common stock. The initial public offering price was determined by negotiations among us and the representatives of the underwriters. In determining the initial public offering price of our common stock, we and the representatives of the underwriters considered a number of factors, including:

- our future prospects and those of our industry in general; and
- the price earnings ratios, price sales ratios, market prices of securities and certain financial and operating information of companies engaged in activities similar to ours.

Neither we nor the underwriters can assure investors that an active trading market will develop for our common stock, or that the shares of common stock will trade in the public market at or above the initial public offering price.

For the purposes of this provision, the expression an “offer of securities to the public” in relation to any securities in any Relevant Member State means the communication in any form and by any means of sufficient information on the terms of the offer and the securities to be offered so as to enable an investor to decide to purchase or subscribe for the securities, as the same may be varied in that Member State by any measure

implementing the EU Prospectus Directive in that Member State and the expression EU Prospectus Directive means Directive 2003/71/EC and includes any relevant implementing measure in each Relevant Member State.

Certain of the underwriters and their affiliates have provided in the past to us and our affiliates and may provide from time to time in the future certain commercial banking, financial advisory, investment banking and other services for us and such affiliates in the ordinary course of their business, for which they have received or will receive customary fees and commissions. In addition, from time to time, certain of the underwriters and their affiliates may effect transactions for their own account or the account of customers, and hold on behalf of themselves or their customers, long or short positions in our debt or equity securities or loans, and may do so in the future.

LEGAL MATTERS

The validity of the shares of common stock offered hereby will be passed upon for us by Wilson Sonsini Goodrich & Rosati, Professional Corporation, Palo Alto, California. Certain legal matters in connection with this offering will be passed upon for the underwriters by Davis Polk & Wardwell LLP, Menlo Park, California. Members of Wilson Sonsini Goodrich & Rosati, Professional Corporation and investment funds associated with that firm hold 31,607 shares of our preferred stock.

EXPERTS

The financial statements as of December 31, 2008 and 2009 and for each of the three years in the period ended December 31, 2009 included in this prospectus have been so included in reliance on the report of PricewaterhouseCoopers LLP, an independent registered public accounting firm, given on the authority of said firm as experts in auditing and accounting.

WHERE YOU CAN FIND MORE INFORMATION

We have filed with the SEC a registration statement on Form S-1 under the Securities Act with respect to the shares of common stock we are offering. The registration statement, including the attached exhibits and schedules, contains additional relevant information about us and our common stock. This prospectus does not contain all of the information set forth in the registration statement and the exhibits and schedules thereto. The rules and regulations of the SEC allow us to omit from this prospectus certain information included in the registration statement.

For further information about us and our common stock, you may inspect a copy of the registration statement and the exhibits and schedules to the registration statement without charge at the offices of the SEC at 100 F Street, N.E., Washington, D.C. 20549. You may obtain copies of all or any part of the registration statement from the Public Reference Section of the SEC, 100 F Street, N.E., Washington, D.C. 20549 upon the payment of the prescribed fees.

You may obtain information on the operation of the Public Reference Room by calling the SEC at 1-800-SEC-0330. The SEC maintains a website at www.sec.gov that contains reports, proxy and information statements and other information regarding registrants like us that file electronically with the SEC. You can also inspect our registration statement on this website.

Upon the closing of this offering, we will become subject to the reporting and information requirements of the Exchange Act, and we will file reports, proxy statements and other information with the SEC.

PACIFIC BIOSCIENCES OF CALIFORNIA, INC.
(A development stage enterprise)
Index to Financial Statements

Report of Independent Registered Public Accounting Firm

To the Board of Directors and Stockholders of
Pacific Biosciences of California, Inc.
(A development stage enterprise)

In our opinion, the accompanying balance sheets and the related statements of operations, of convertible preferred stock and stockholders' equity (deficit), and of cash flows present fairly, in all material respects, the financial position of Pacific Biosciences of California, Inc. at December 31, 2008 and December 31, 2009, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2009 and, cumulatively, for the period from July 14, 2000 (date of inception) to December 31, 2009 (not separately presented) 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

PricewaterhouseCoopers LLP
San Jose, California
August 16, 2010

PACIFIC BIOSCIENCES OF CALIFORNIA, INC.
(A development stage enterprise)
Balance Sheets

(in thousands except share and per share amounts)	December 31, 2008	December 31, 2009	June 30, 2010 (unaudited)	Pro Forma Stockholders' Equity at June 30, 2010 (unaudited)
Assets				
Current assets				
Cash and cash equivalents	$ 78,462	$ 89,232	$ 90,144	
Investments	27,589	3,503	48,612	
Prepaid expenses and other current assets	875	1,010	1,251	
Total current assets	106,926	93,745	140,007	
Property and equipment, net	6,027	7,142	12,669	
Other long-term assets	154	211	221	
Total assets	$ 113,107	$ 101,098	$ 152,897	
Liabilities, Convertible Preferred Stock and Stockholders' Equity (Deficit)				
Current liabilities				
Accounts payable	$ 1,845	$ 5,778	$ 7,613	
Accrued expenses and other current liabilities	1,557	2,641	8,437	
Current portion of facility financing obligation	—	—	61	
Notes payable	1,300	—	—	
Total current liabilities	4,702	8,419	16,111	
Lease incentives and other long-term liabilities	567	475	2,163	
Facility financing obligation, less current portion	—	—	2,955	
Convertible Preferred Stock warrant liability	142	226	282	
Total liabilities	5,411	9,120	21,511	
Commitments and contingencies (Note 7)				
Convertible Preferred Stock, $0.0001 par value; 94,627,806, 116,056,382 and 153,394,052 shares authorized at December 31, 2008 and 2009, and June 30, 2010 (unaudited), respectively; 50,367,456, 60,101,338 and 73,305,523 shares issued and outstanding at December 31, 2008 and 2009, and June 30, 2010 (unaudited), respectively and no shares at June 30, 2010 pro forma (unaudited)	201,085	269,101	367,036	
(Liquidation value of $366,029 as of June 30, 2010 (unaudited))				
Stockholders' equity (deficit)				
Common Stock, $0.0001 par value; 89,000,000, 100,000,000 and 121,668,835 authorized shares at December 31, 2008 and 2009, and June 30, 2010 (unaudited), respectively; 1,154,043, 1,312,169, 1,921,538 issued and outstanding shares at December 31, 2008 and 2009, and June 30, 2010 (unaudited), respectively and 75,227,061 shares at June 30, 2010 pro forma (unaudited)	—	—	—	8
Additional paid-in capital	10,907	14,877	19,395	386,705
Deferred stock-based compensation	(42)	—	—	—
Accumulated other comprehensive income (loss)	44	1	(5)	(5)
Deficit accumulated during the development stage	(104,298)	(192,001)	(255,040)	(255,040)
Total stockholders' equity (deficit)	(93,389)	(177,123)	(235,650)	$ 131,668
Total liabilities, Convertible Preferred Stock and stockholders' equity (deficit)	$ 113,107	$ 101,098	$ 152,897	

See accompanying notes to the financial statements.

PACIFIC BIOSCIENCES OF CALIFORNIA, INC.
(A development stage enterprise)
Statements of Operations

(in thousands, except share and per share amounts)	Years Ended December 31,			Six-Month Periods Ended June 30,		Cumulative Period From July 14, 2000 (Date of inception) to June 30, 2010
	2007	2008	2009	2009	2010	
				(unaudited)		(unaudited)
Revenue	$ 2,163	$ 901	$ 135	$ —	$ 1,174	$ 8,098
Operating expenses						
Research and development	19,216	37,997	75,879	30,090	52,406	206,736
Sales, general and administrative	6,338	7,713	12,326	5,338	11,717	47,065
Total operating expenses	25,554	45,710	88,205	35,428	64,123	253,801
Loss from operations	(23,391)	(44,809)	(88,070)	(35,428)	(62,949)	(245,703)
Interest income (expense), net	1,940	1,157	451	327	(35)	3,899
Other income (expense), net	(67)	(102)	(84)	(10)	(55)	(422)
Net loss	$ (21,518)	$ (43,754)	$ (87,703)	$ (35,111)	$ (63,039)	$ (242,226)
Basic and diluted net loss per share	$ (136.46)	$ (66.91)	$ (86.52)	$ (37.69)	$ (49.79)	
Weighted-average shares outstanding used to calculate basic and diluted net loss per share	157,683	653,910	1,013,730	931,511	1,266,038	
Pro forma basic and diluted net loss per share (unaudited)			$ (1.58)		$ (1.01)	
Pro forma weighted-average shares outstanding used to calculate basic and diluted net loss per share (unaudited)			55,477,488		62,405,225	

See accompanying notes to the financial statements.

PACIFIC BIOSCIENCES OF CALIFORNIA, INC.
(A development stage enterprise)
Statements of Convertible Preferred Stock and Stockholders' Equity (Deficit)
Period from July 14, 2000 (Date of inception) to June 30, 2010

(in thousands, except share and per share amounts)	Convertible preferred stock		Common stock		Additional paid-in capital	Deferred stock-based compensation	Accumulated other comprehensive income (loss)	Deficit accumulated during the development stage	Total stockholders' equity (deficit)
	Shares	Amount	Shares	Amount					
Balance at inception (July 14, 2000)	—	$ —	—	$ —	$ —	$ —	$ —	$ —	$ —
Issuance of restricted Common Stock to founders	—	—	4,341,006	—	5	—	—	—	5
Net loss	—	—	—	—	—	—	—	(1)	(1)
Balance at December 31, 2000	—	—	4,341,006	—	5	—	—	(1)	4
Net loss	—	—	—	—	—	—	—	(11)	(11)
Balance at December 31, 2001	—	—	4,341,006	—	5	—	—	(12)	(7)
Issuance of Common Stock in connection with a license agreement	—	—	117,283	—	—	—	—	—	—
Net loss	—	—	—	—	—	—	—	(15)	(15)
Balance at December 31, 2002	—	—	4,458,289	—	5	—	—	(27)	(22)
Net loss	—	—	—	—	—	—	—	(20)	(20)
Balance at December 31, 2003	—	—	4,458,289	—	5	—	—	(47)	(42)
Issuance of Series A Convertible Preferred Stock at $1.00 per share for cash, net of issuance costs of $169 (March 2004)	5,405,992	5,237	—	—	—	—	—	—	—
Issuance of Series B Convertible Preferred Stock at $1.30 per share for cash, net of issuance costs of $55 (July 2004)	3,500,000	4,495	—	—	—	—	—	—	—
Issuance of Series B Convertible Preferred Stock warrants in connection with loan and securities agreement	—	—	—	—	21	—	—	—	21
Issuance of Common Stock upon exercise of stock options for cash ($0.10 to $0.13 per share)	—	—	1,690,750	—	1	—	—	—	1
Issuance of Common Stock in connection with consulting agreements	—	—	246,752	—	—	—	—	—	—
Issuance of Common Stock in connection with a license agreement	—	—	163,967	—	16	—	—	—	16
Non-employee stock-based compensation	—	—	—	—	3	—	—	—	3
Net loss	—	—	—	—	—	—	—	(3,611)	(3,611)
Balance at December 31, 2004	8,905,992	9,732	6,559,758	—	46	—	—	(3,658)	(3,612)
Issuance of Series C Convertible Preferred Stock at $2.02 per share for cash, net of issuance costs of $83 (August 2005)	5,322,396	10,669	—	—	—	—	—	—	—
Issuance of Common Stock upon exercise of stock options for cash ($0.10 to $0.13 per share)	—	—	1,013,395	—	25	—	—	—	25
Conversion of Common Stock to Junior Preferred Stock at $1.70 per share (August 2005)	7,573,153	12,874	(7,573,153)	—	(71)	—	—	(12,803)	(12,874)
Repurchase of Junior Preferred Stock at $1.70 per share (August 2005)	(1,000,000)	(1,700)	—	—	—	—	—	—	—
Issuance of Series B Convertible Preferred Stock warrants in connection with drawdown under 2004 loan and security agreement	—	—	—	—	11	—	—	—	11
Vesting of Junior Preferred Stock options early exercised	—	74	—	—	—	—	—	—	—
Deferred stock-based compensation	—	—	—	—	5,607	(5,607)	—	—	—
Employee stock-based compensation under the intrinsic value method	—	—	—	—	3,199	1,070	—	—	4,269
Non-employee stock-based compensation	—	—	—	—	39	—	—	—	39
Net loss	—	—	—	—	—			(10,877)	(10,877)
Balance at December 31, 2005	20,801,541	31,649	—	—	8,856	(4,537)	—	(27,338)	(23,019)

See accompanying notes to the financial statements.

PACIFIC BIOSCIENCES OF CALIFORNIA, INC.
(A development stage enterprise)
Statements of Convertible Preferred Stock and Stockholders' Equity (Deficit)
Period from July 14, 2000 (date of inception) to June 30, 2010

(in thousands, except share and per share amounts)	Convertible preferred stock		Common stock		Additional paid-in capital	Deferred stock-based compensation	Accumulated other comprehensive income (loss)	Deficit accumulated during the development stage	Total stockholders' equity (deficit)
	Shares	Amount	Shares	Amount					
Balance at December 31, 2005	20,801,541	$ 31,649	—	$ —	$ 8,856	$ (4,537)	$ —	$ (27,338)	$ (23,019)
Issuance of Series D Convertible Preferred Stock at $4.00 per share for cash, net of issuance costs of $188 (December 2006)	12,500,000	49,812	—	—	—	—	—	—	—
Issuance of Junior Preferred Stock upon exercise of stock options for cash ($0.10 to $0.13 per share)	53,604	6	—	—	—	—	—	—	—
Reclassification of Preferred Stock warrants to liability	—	—	—	—	(31)	—	—	—	(31)
Issuance of Common Stock upon exercise of stock options for cash ($0.35 per share)	—	—	273,390	—	24	—	—	—	24
Repurchase of unvested Junior Preferred Stock	(241,325)	(410)	—	—	(1)	383	—	—	382
Repurchase of unvested Common Stock	—	—	(938)	—	(1)	—	—	—	(1)
Vesting of Junior Preferred Stock options early exercised	—	97	—	—	—	—	—	—	—
Employee stock-based compensation expense recorded under the intrinsic value method	—	—	—	—	(880)	2,716	—	—	1,836
Employee stock-based compensation expense recorded under the fair value method	—	—	—	—	48	—	—	—	48
Non-employee stock-based compensation	—	—	—	—	37	—	—	—	37
Net loss	—	—	—	—	—	—	—	(11,688)	(11,688)
Balance at December 31, 2006	33,113,820	81,154	272,452	—	8,052	(1,438)	—	(39,026)	(32,412)
Issuance of Junior Preferred Stock upon exercise of stock options for cash ($0.10 and $0.13 per share)	45,000	5	—	—	—	—	—	—	—
Issuance of Common Stock upon exercise of stock options for cash ($0.35 to $0.98 per share)	—	—	274,266	—	88	—	—	—	88
Repurchase of unvested Common Stock	—	—	(13,126)	—	—	—	—	—	—
Vesting of Junior Preferred Stock options	—	63	—	—	—	—	—	—	—
Vesting of Common Stock options early exercised	—	—	—	—	43	—	—	—	43
Employee stock-based compensation expense recorded under the intrinsic value method	—	—	—	—	95	983	—	—	1,078
Employee stock-based compensation expense recorded under the fair value method	—	—	—	—	426	—	—	—	426
Non-employee stock-based compensation	—	—	—	—	156	—	—	—	156
Other comprehensive income	—	—	—	—	—	—	4	—	4
Net loss	—	—	—	—	—	—	—	(21,518)	(21,518)
Total comprehensive loss	—	—	—	—	—	—	—	—	(21,514)
Balance at December 31, 2007	33,158,820	81,222	533,592	—	8,860	(455)	4	(60,544)	(52,135)

See accompanying notes to the financial statements.

PACIFIC BIOSCIENCES OF CALIFORNIA, INC.
(A development stage enterprise)
Statements of Convertible Preferred Stock and Stockholders' Equity (Deficit)
Period from July 14, 2000 (date of inception) to June 30, 2010

(in thousands, except share and per share amounts)	Convertible preferred stock		Common stock		Additional paid-in capital	Deferred stock-based compensation	Accumulated other comprehensive income (loss)	Deficit accumulated during the development stage	Total stockholders' equity (deficit)
	Shares	Amount	Shares	Amount					
Balance at December 31, 2007	33,158,820	$ 81,222	533,592	$ —	$ 8,860	$ (455)	$ 4	$ (60,544)	$ (52,135)
Issuance of Series E Convertible Preferred Stock at $7.00 per share for cash, net of issuance costs of $169 (July 2008)	17,142,908	119,831	—	—	—	—	—	—	—
Issuance of Junior Preferred Stock upon exercise of stock options for cash ($0.10 to $0.13 per share)	65,728	7	—	—	—	—	—	—	—
Issuance of Common Stock upon exercise of stock options for cash ($0.35 to $3.48 per share)	—	—	620,451	—	267	—	—	—	267
Vesting of Junior Preferred Stock options early exercised	—	25	—	—	—	—	—	—	—
Vesting of Common Stock options early exercised	—	—	—	—	65	—	—	—	65
Employee stock-based compensation expense recorded under the intrinsic value method	—	—	—	—	144	413	—	—	557
Employee stock-based compensation expense recorded under the fair value method	—	—	—	—	1,260	—	—	—	1,260
Non-employee stock-based compensation	—	—	—	—	311	—	—	—	311
Other comprehensive income	—	—	—	—	—	—	40	—	40
Net loss	—	—	—	—	—	—	—	(43,754)	(43,754)
Total comprehensive loss	—	—	—	—	—	—	—	—	(43,714)
Balance at December 31, 2008	50,367,456	201,085	1,154,043	—	10,907	(42)	44	(104,298)	(93,389)
Issuance of Series E Convertible Preferred Stock at $7.00 per share for cash, net of issuance costs of $57 (July 2009)	9,723,882	68,010	—	—	—	—	—	—	—
Issuance of Junior Preferred Stock upon exercise of stock options for cash	10,000	1	—	—	—	—	—	—	—
Issuance of Common Stock upon exercise of stock options for cash ($0.35 to $3.48 per share)	—	—	168,481	—	303	—	—	—	303
Repurchase of unvested Common Stock	—	—	(10,355)	—	—	—	—	—	—
Vesting of Junior Preferred Stock options early exercised	—	5	—	—	—	—	—	—	—
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 income	—	—	—	—	—	—	(43)	—	(43)
Net loss	—	—	—	—	—	—	—	(87,703)	(87,703)
Total comprehensive loss	—	—	—	—	—	—	—	—	(87,746)
Balance at December 31, 2009	60,101,338	269,101	1,312,169	—	14,877	—	1	(192,001)	(177,123)

See accompanying notes to the financial statements.

PACIFIC BIOSCIENCES OF CALIFORNIA, INC.
(A development stage enterprise)
Statements of Convertible Preferred Stock and Stockholders' Equity (Deficit)
Period from July 14, 2000 (date of inception) to June 30, 2010

(in thousands, except share and per share amounts)	Convertible preferred stock		Common stock		Additional paid-in capital	Deferred stock-based compensation	Accumulated other comprehensive income (loss)	Deficit accumulated during the development stage	Total stockholders' equity (deficit)
	Shares	Amount	Shares	Amount					
Balance at December 31, 2009	60,101,338	$269,101	1,312,169	$ —	$ 14,877	$ —	$ 1	$(192,001)	$ (177,123)
Issuance of Series F Convertible Preferred Stock at $7.63 per share for cash, net of issuance costs of $2,813 (June 2010) (unaudited)	13,204,185	97,935	—	—	—	—	—	—	—
Issuance of Common Stock upon exercise of stock options for cash ($0.35 to $4.25 per share) (unaudited)	—	—	609,369	—	440	—	—	—	440
Vesting of Common Stock options early exercised (unaudited)	—	—	—	—	72	—	—	—	72
Employee stock-based compensation expense recorded under the intrinsic value method (unaudited)	—	—	—	—	267	—	—	—	267
Employee stock-based compensation expense recorded under the fair value method (unaudited)	—	—	—	—	3,115	—	—	—	3,115
Non-employee stock-based compensation (unaudited)	—	—	—	—	624	—	—	—	624
Other comprehensive income (unaudited)	—	—	—	—	—	—	(6)	—	(6)
Net loss (unaudited)	—	—	—	—	—	—	—	(63,039)	(63,039)
Total comprehensive loss (unaudited)	—	—	—	—	—	—	—	—	(63,045)
Balance at June 30, 2010 (unaudited)	73,305,523	$367,036	1,921,538	$ —	$ 19,395	$ —	$ (5)	$(255,040)	$ (235,650)

See accompanying notes to the financial statements.

PACIFIC BIOSCIENCES OF CALIFORNIA, INC.
(A development stage enterprise)
Statements of Cash Flows

(in thousands)	Years ended December 31, 2007	2008	2009	Six-month periods ended June 30, 2009	2010	Cumulative Period From July 14, 2000 (Date of inception) to June 30, 2010
				(unaudited)		(unaudited)
Cash flows from operating activities						
Net loss	$(21,518)	$ (43,754)	$(87,703)	$(35,111)	$(63,039)	$ (242,226)
Adjustments to reconcile net loss to net cash used in operating activities						
Depreciation	1,577	2,987	4,104	1,923	2,260	12,716
Stock-based compensation	1,660	2,127	3,630	1,636	4,005	17,653
Amortization of deferred financing cost	16	13	—	—	—	59
Change in Convertible Preferred Stock warrant liability fair value	10	(9)	84	10	56	239
Other items	(104)	10	110	—	—	22
Changes in assets and liabilities						
Prepaid expenses and other current assets	(164)	(78)	27	443	(121)	(854)
Other long-term assets	(94)	(26)	(57)	(4)	(10)	(254)
Accounts payable	1,434	(223)	3,891	847	1,966	7,702
Accrued expenses and other current liabilities	620	156	1,168	977	5,510	7,971
Lease incentives and other long-term liabilities	(169)	494	(92)	(95)	(222)	254
Net cash used in operating activities	(16,732)	(38,303)	(74,838)	(29,374)	(49,595)	(196,718)
Cash flows from investing activities						
Purchase of property and equipment	(3,048)	(5,703)	(5,177)	(1,430)	(2,992)	(20,453)
Purchase of investments	(53,960)	(36,376)	(25,429)	(24,410)	(48,735)	(172,065)
Maturities of investments	38,670	31,686	49,200	26,000	3,500	123,056
Net cash provided by (used in) investing activities	(18,338)	(10,393)	18,594	160	(48,227)	(69,462)
Cash flows from financing activities						
Proceeds from issuance of Convertible Preferred Stock, net	—	119,831	68,010	—	97,935	355,989
Proceeds from exercise of Common Stock options	166	489	311	8	799	2,155
Proceeds from exercise of Junior Preferred Stock options	6	7	1	1	—	20
Repurchases of Common Stock	(5)	—	(8)	(3)	—	(13)
Repurchases of Junior Preferred Stock	—	—	—	—	—	(1,727)
Proceeds from issuance of notes payable	1,042	—	—	—	—	4,037
Payment of notes payable	(1,434)	(400)	(1,300)	(400)	—	(4,137)
Net cash provided by (used in) financing activities	(225)	119,927	67,014	(394)	98,734	356,324
Net increase (decrease) in cash and cash equivalents	(35,295)	71,231	10,770	(29,608)	912	90,144
Cash and cash equivalents at beginning of period	42,526	7,231	78,462	78,462	89,232	—
Cash and cash equivalents at end of period	$ 7,231	$ 78,462	$ 89,232	$ 48,854	$ 90,144	$ 90,144
Supplemental disclosure of cash flow information						
Interest paid	$ (178)	$ (92)	$ (30)	$ (22)	$ —	$ (584)
Supplemental disclosure of non-cash investing and financing activities						
Issuance of Convertible Preferred Stock warrants	16	—	—	—	—	70
Assets acquired under facility financing obligation	—	—	—	—	2,971	2,971
Additions to property and equipment under tenant improvement allowances	—	—	—	—	1,910	1,910
Reclassification of Convertible Preferred Stock warrants to liabilities	—	—	—	—	—	31

See accompanying notes to the financial statements.

PACIFIC BIOSCIENCES OF CALIFORNIA, INC.
(A development stage enterprise)

Notes to Financial Statements

1. Overview

Pacific Biosciences of California, Inc., ("Pacific Biosciences", "we", "us") is focused on developing and commercializing 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. We incorporated in the state of Delaware on July 14, 2000 under the name Nanofluidics, Inc., and changed our name to Pacific Biosciences in 2005. Since inception, substantially all of our resources have been invested in the development and commercialization of our single molecule, real-time technologies.

We continue to report as a development stage enterprise since planned principal operations have not yet commenced. Revenue recognized since inception has been limited to research grants received from government grants and does not constitute the commencement of our principal operations. Since inception, we have incurred net losses and negative cash flows from operations. In order to continue operations, we must raise additional equity or debt financing and achieve profitable operations. There can be no assurance that we will be able to obtain additional equity or debt financing on acceptable terms, or at all. Our failure to obtain sufficient funds on acceptable terms when needed, or at all, could have a material adverse effect on our business, results of operations and financial conditions.

The names "Pacific Biosciences," "PacBio," "SMRT," "SMRTbell" and our logo are our trademarks. All other trademarks and trade names appearing in this prospectus are the property of their respective owners.

2. Summary of Significant Accounting Policies

Basis of Presentation

Our 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.

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 and related warrants and options, stock-based compensation expense, provisions for income taxes and contingencies. Actual results could differ from our estimates, and such differences could be material to our financial position and results of operations.

Unaudited Interim Financial Information

The accompanying unaudited interim balance sheets as of June 30, 2010, the statements of operations and cash flows for the six-month periods ended June 30, 2009 and 2010 and, cumulatively, for the period from July 14, 2000 (date of inception) to June 30, 2010, and the statements of convertible preferred stock and stockholders' equity (deficit) for the six-month period ended June 30, 2010 are unaudited. These unaudited interim financial statements have been prepared in accordance with generally accepted accounting principles for interim financial information. Accordingly, they do not include all of the information and notes required by GAAP for complete financial statements. The unaudited interim financial statements have been prepared on a basis consistent with the audited financial statements. In the opinion of management, the unaudited interim financial statements reflect all adjustments, which include only normal recurring adjustments necessary

PACIFIC BIOSCIENCES OF CALIFORNIA, INC.
(A development stage enterprise)

Notes to Financial Statements—(Continued)

2. Summary of Significant Accounting Policies (continued)

for the fair statement of our financial position as of June 30, 2010 and the results of our operations and our cash flows for the six-month periods ended June 30, 2009 and 2010. The financial data and other financial information disclosed in these notes to the financial statements related to the six-month periods are unaudited. The results for the six-month period ended June 30, 2010 are not necessarily indicative of the results to be expected for the year ending December 31, 2010 or any future periods.

Unaudited Pro Forma Information

The unaudited pro forma stockholders' equity as of June 30, 2010 has been prepared assuming that upon the closing of a qualified public offering all of our outstanding shares of convertible preferred stock will automatically convert into shares of common stock and our outstanding warrants exercisable for convertible preferred stock will convert into warrants exercisable for common stock. The June 30, 2010 unaudited pro forma stockholders' equity reflects the conversion of all 73,305,523 outstanding shares of convertible preferred stock into 73,305,523 shares of common stock and the reclassification of the preferred stock warrant liability to additional paid-in capital immediately prior to the closing of a qualified public offering.

Fair Value of Financial Instruments

The carrying amount of certain of our financial instruments, including 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. Based on currently available borrowing rates, the carrying values of the long-term liabilities approximate fair value.

As a basis for determining the fair value of certain of our financial instruments, we utilize a three-tier value hierarchy which prioritizes the inputs used in measuring fair value as follows: (Level I) observable inputs such as quoted prices in active markets; (Level II) inputs other than the quoted prices in active markets that are observable either directly or indirectly; and (Level III) unobservable inputs in which there is little or no market data which requires us to develop our own assumptions. This hierarchy requires us to use observable market data, when available, and to minimize the use of unobservable inputs when determining fair value. Our financial instruments that are measured at fair value on a recurring basis consist only of cash equivalents, investments and warrant liabilities.

All of our cash equivalents, which include money market funds, are classified within Level I of the fair value hierarchy because they are valued using quoted market prices. Our investments are generally classified as Level II instruments, or instruments valued based on other observable inputs. Our warrant liability is classified within Level III of the fair value hierarchy.

PACIFIC BIOSCIENCES OF CALIFORNIA, INC.
(A development stage enterprise)

Notes to Financial Statements—(Continued)

2. Summary of Significant Accounting Policies (Continued)

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. The following table sets forth our financial instruments that were measured at fair value as of December 31, 2008 and 2009 and June 30, 2010 by level within the fair value hierarchy (in thousands).

	December 31, 2008				December 31, 2009				June 30, 2010 (unaudited)			
	Level I	Level II	Level III	Total	Level I	Level II	Level III	Total	Level I	Level II	Level III	Total
Assets												
Money Market Funds	$ 78,077	$ —	$ —	$ 78,077	$ 87,464	$ —	$ —	$ 87,464	$ 86,974	$ —	$ —	$ 86,974
Commercial Paper	3,000	11,929	—	14,929	—	—	—	—	—	7,982	—	7,982
Corporate Debt Securities	—	7,510	—	7,510	—	3,503	—	3,503	—	8,170	—	8,170
U.S. Government and Agency Securities	—	5,150	—	5,150	—	—	—	—	—	32,460	—	32,460
Total assets measured at fair value	$ 81,077	$ 24,589	$ —	$ 105,666	$ 87,464	$ 3,503	$ —	$ 90,967	$ 86,974	$ 48,612	$ —	$ 135,586
Liabilities												
Convertible Preferred Stock warrants	$ —	$ —	$ 142	$ 142	$ —	$ —	$ 226	$ 226	$ —	$ —	$ 282	$ 282
Total liabilities measured at fair value	$ —	$ —	$ 142	$ 142	$ —	$ —	$ 226	$ 226	$ —	$ —	$ 282	$ 282

The change in the fair value of the Level III convertible preferred stock warrant liability is summarized below (in thousands):

	December 31,			June 30, 2010
	2007	2008	2009	(unaudited)
Fair value at beginning of period	$140	$151	$142	$ 226
Issuances	1	—	—	—
Change in fair value recorded in other income (expense), net	10	(9)	84	56
Fair value at end of period	$151	$142	$226	$ 282

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 primarily of money market funds.

PACIFIC BIOSCIENCES OF CALIFORNIA, INC.
(A development stage enterprise)

Notes to Financial Statements—(Continued)

2. Summary of Significant Accounting Policies (Continued)

Investments

We invest our cash balances exceeding short-term operating needs in short-term investment grade commercial paper, government bonds and corporate obligation notes. We classify all of our investments as available-for-sale and record the estimated fair value of these investments on the balance sheets, with unrealized gains and losses, if any, reported as a component of accumulated other comprehensive income (loss) in stockholders' equity (deficit). Debt securities are adjusted for amortization of premiums and accretion of discounts, and such amortization and accretion are reported as a component of interest income. Realized gains and losses are recorded as a component of other income (expense), net. Realized gains and losses have not been material since inception.

We periodically review our investments for potential impairment and consider investments impaired when a decline in fair value is deemed by us to be other-than-temporary. If cost exceeds fair value, we consider, among other factors, the duration and extent to which cost exceeds fair value, the financial strength of the issuer, and our intent and ability to hold the investment to maturity. Once a decline in value is deemed to be other-than-temporary, an impairment charge is recorded and a new cost basis in the investment is established. No impairment losses were recognized from inception through June 30, 2010.

Concentration of Credit Risk

Financial instruments that potentially subject us to a concentration of credit risk consist of cash, cash equivalents and investments. Cash balances are deposited with a single domestic financial institution and deposits at this financial institution may, from time to time, exceed federally insured limits. Cash equivalents consist primarily of funds invested in a single money market fund. We have not experienced any losses on our deposits of cash, cash equivalents, investments or grants receivable.

Certain Risks and Uncertainties

We are subject to risks common to companies in the development stage, including but not limited to, development of new products, development of markets and distribution channels, dependence on key personnel, competing with established brands and the ability to obtain additional capital as needed to fund our product development plans. To date, we have been funded by private equity and debt financings. Our success is dependent upon our ability to raise additional capital and to successfully develop and market our products. Any significant delays in the development or marketing of products could have a material adverse effect on our business and financial results.

We have chosen to source certain critical components from single source suppliers. If we were required to purchase these components from an alternative source, it could take several months or longer to qualify the alternative sources.

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.

PACIFIC BIOSCIENCES OF CALIFORNIA, INC.
(A development stage enterprise)

Notes to Financial Statements—(Continued)

2. Summary of Significant Accounting Policies (Continued)

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

Government grants are agreements that generally provide cost reimbursement for certain types of expenditures in return for research and development activities over a contractually defined period. Revenue from government grants is recognized in the period during which the related costs are incurred, provided that the conditions under which the government grants were provided have been met.

Research and Development

Research and development expense consists of costs incurred in the development of our SMRT technology and our products, including our PacBio *RS* instrument, SMRT Cells and reagent kits, as well as costs incurred under government grants. We expense research and development costs to operations as incurred. We will, however, 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

PACIFIC BIOSCIENCES OF CALIFORNIA, INC.
(A development stage enterprise)

Notes to Financial Statements—(Continued)

2. Summary of Significant Accounting Policies (Continued)

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 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.

Net Loss Per Share and Pro Forma 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 common stock equivalents. Diluted net loss per share is computed by dividing the net loss by the weighted-average number of unrestricted common shares and dilutive common share equivalents 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 warrants are considered to be dilutive common share equivalents and are only included in the calculation of diluted net loss per share when their effect is dilutive.

Upon the closing of a qualified public offering, all outstanding convertible preferred stock will be converted into shares of common stock. The unaudited pro forma basic and diluted net loss per share for the year ended December 31, 2009 and the six-month period ended June 30, 2010 reflects the automatic conversion of all outstanding shares of convertible preferred stock into shares of common stock. The unaudited pro forma basic and diluted net loss per share does not give effect to the issuance of shares from the qualified public offering nor does it give effect to potential dilutive securities where the impact would be anti-dilutive. Also, the numerator in the pro forma basic and diluted net loss per share calculation has been adjusted to remove gains and losses resulting from remeasurements of the outstanding convertible preferred stock warranty liabilities through June 30, 2010 as these warrants will be automatically converted to warrants to purchase common stock upon the closing of a qualified offering and will no longer require periodic remeasurement.

PACIFIC BIOSCIENCES OF CALIFORNIA, INC.
(A development stage enterprise)

Notes to Financial Statements—(Continued)

2. Summary of Significant Accounting Policies (Continued)

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

	Years ended December 31,			Six-month periods ended June 30,	
	2007	2008	2009	2009	2010
				(unaudited)	
Historical net loss per share:					
Numerator					
Net loss	$ (21,518)	$ (43,754)	$ (87,703)	$ (35,111)	$ (63,039)
Denominator					
Weighted-average shares of common stock outstanding	339,828	911,929	1,203,025	1,143,091	1,382,673
Less: Weighted-average shares of common stock subject to repurchase	(182,145)	(258,019)	(189,295)	(211,580)	(116,635)
Weighted-average shares outstanding used to calculate basic and diluted net loss per share	157,683	653,910	1,013,730	931,511	1,266,038
Basic and diluted net loss per share	$ (136.46)	$ (66.91)	$ (86.52)	$ (37.69)	$ (49.79)
Pro forma net loss per share (unaudited):					
Numerator					
Net loss			$ (87,703)		$ (63,039)
Pro forma adjustment to reverse the mark-to-market adjustment related to the convertible preferred stock warrant liability			84		56
Net loss used to compute pro forma net loss per share			$ (87,619)		$ (62,983)
Denominator					
Weighted-average shares outstanding used to calculate basic and diluted net loss per share			1,013,730		1,266,038
Pro forma adjustment to reflect assumed weighted-average effect of conversion of convertible preferred stock			54,463,758		61,139,187
Denominator for pro forma basic and diluted net loss per share			55,477,488		62,405,225
Pro forma basic and diluted net loss per share			$ (1.58)		$ (1.01)

PACIFIC BIOSCIENCES OF CALIFORNIA, INC.
(A development stage enterprise)

Notes to Financial Statements—(Continued)

2. Summary of Significant Accounting Policies (Continued)

The following outstanding options, common stock subject to repurchase, convertible preferred stock and warrants to purchase convertible preferred 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:

	As of December 31,			As of June 30,	
	2007	2008	2009	2009	2010
				(unaudited)	
Convertible Preferred stock (on an as if converted basis)	33,158,820	50,367,456	60,101,338	50,377,456	73,305,523
Options to purchase Common Stock	6,270,726	9,919,498	13,149,667	11,924,916	17,575,343
Common Stock subject to repurchase	406,833	310,729	118,291	161,413	310,929
Warrants to purchase Convertible Preferred Stock	50,569	50,569	50,569	50,569	50,569

Stock-based Compensation

For awards granted on or before December 31, 2005, we applied the intrinsic value method of accounting for employee stock option awards. Under the intrinsic value method, compensation expense for employees was based on the difference, if any, between the fair value of our common stock and the exercise price of the option on the measurement date, which is the date of grant.

On August 11, 2005, as a result of an equity restructuring that resulted in a new measurement date for our outstanding options, we recorded $5.6 million of deferred stock-based compensation expense on the balance sheets that we subsequently amortized and recognized as stock-based compensation expense over the vesting period of the underlying options. The deferred stock-based compensation relating to this equity restructuring was fully amortized as of December 31, 2009.

Effective January 1, 2006, we adopted new authoritative accounting guidance for stock-based compensation, which requires us to measure the cost of employee services received in exchange for stock-based awards based on the grant date fair value of the award. We adopted the new guidance using the prospective transition method. Under the prospective transition method, compensation cost for stock-based awards granted prior to December 31, 2005 continue to be recorded based on the intrinsic value method. Compensation cost for all stock-based awards granted or modified subsequent to adoption is recorded based on the estimated grant date fair value and recognized as expense over the requisite service period of the grant, which is generally the vesting period.

We determine the grant date fair value of stock options using the Black-Scholes option pricing model. The use of the Black-Scholes option pricing model requires assumptions regarding a number of highly complex and subjective variables. These variables include, but are not limited to, future expected common stock price volatility over the term of the option awards, as well as projected employee option exercise behavior (expected period between stock option vesting date and stock option exercise date), risk-free interest rates and expected dividends.

Stock-based compensation expense recognized at fair value reflects the impact of estimated forfeitures. Future forfeitures are estimated at the date of grant and revised in subsequent periods if actual forfeitures differ from those estimates.

PACIFIC BIOSCIENCES OF CALIFORNIA, INC.
(A development stage enterprise)

Notes to Financial Statements—(Continued)

2. Summary of Significant Accounting Policies (Continued)

Convertible Preferred Stock Warrants

We account for freestanding warrants to purchase shares of our convertible preferred stock at fair value on the balance sheet because we may be obligated to redeem these warrants at some point in the future. The warrants are subject to subsequent remeasurement at each balance sheet date with changes in fair value recognized as other income (expense), net in the statement of operations. We will continue to adjust the liability for changes in fair value until the earlier of the exercise or expiration of the warrants or the closing of a liquidation event, or a qualified initial public offering, at which time all unexercised warrants will be automatically converted into warrants to purchase common stock. Upon conversion, the warrant liability related to the convertible preferred stock warrants will be reclassified to additional paid-in capital.

Segments

We operate in a single segment, use one measurement of financial performance and do not segregate our business for internal reporting.

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 statements of convertible preferred stock and stockholders' equity (deficit).

Recent Accounting Pronouncements

In October 2009, the FASB issued an accounting standards update that provides application guidance on whether multiple deliverables exist, how the deliverables should be separated and how the consideration should be allocated to one or more units of accounting. This update establishes a selling price hierarchy for determining the selling price of a deliverable. The selling price used for each deliverable will be based on vendor-specific objective evidence, if available, third-party evidence if vendor-specific objective evidence is not available, or estimated selling price if neither vendor-specific nor third-party evidence is available. We will be required to apply this guidance prospectively for revenue arrangements entered into or materially modified after January 1, 2011. Our revenue to date has been limited to government grant revenue and no revenue has been recognized from the sale of our products. Therefore, adoption of this guidance is not expected to have a material impact on our financial statements.

In April 2010, the FASB issued an accounting standards update which provides guidance on the criteria to be followed in recognizing revenue under the milestone method. The milestone method of recognition allows a vendor who is involved with the provision of deliverables to recognize the full amount of a milestone payment upon achievement, if, at the inception of the revenue arrangement, the milestone is determined to be substantive as defined in the standard. The guidance is effective on a prospective basis for milestones achieved in fiscal years and interim periods within those fiscal years, beginning on or after June 15, 2010. The adoption of this guidance is not expected to have a material impact on our financial statements.

PACIFIC BIOSCIENCES OF CALIFORNIA, INC.
(A development stage enterprise)
Notes to Financial Statements—(Continued)

3. Investments

The following table summarizes our investments as of December 31, 2008 and 2009, and June 30, 2010 (in thousands):

	Amortized cost	Gross unrealized gains	Gross unrealized losses	Fair value
December 31, 2008				
Commercial Paper	$ 14,931	$ 11	$ (13)	$14,929
Corporate Debt Securities	7,519	—	(9)	7,510
U.S. Government and Agency Securities	5,095	55	—	5,150
Total investments	$ 27,545	$ 66	$ (22)	$27,589
December 31, 2009				
Corporate Debt Securities	3,502	2	(1)	3,503
Total investments	$ 3,502	$ 2	$ (1)	$ 3,503
June 30, 2010 (Unaudited)				
Commercial Paper	7,982	—	—	7,982
Corporate Debt Securities	8,173	—	(3)	8,170
U.S. Government and Agency Securities	32,462	—	(2)	32,460
Total investments	$ 48,617	$ —	$ (5)	$48,612

4. Property and Equipment, Net

As of December 31, 2008 and 2009, and June 30, 2010, our property and equipment, net consisted of the following components (in thousands):

	December 31,		June 30,
	2008	2009	2010 (unaudited)
Building (facility)	$ —	$ —	$ 1,160
Laboratory equipment and machinery	7,930	10,307	9,706
Leasehold improvements	1,618	1,761	6,991
Computer equipment	1,440	1,928	2,336
Software	738	1,324	1,592
Furniture and fixtures	367	522	601
Construction in progress	—	619	—
	12,093	16,461	22,386
Less: Accumulated depreciation	(6,066)	(9,319)	(9,717)
Property and equipment, net	$ 6,027	$ 7,142	$ 12,669

Depreciation expense during 2007, 2008, 2009, the six-month periods ended June 30, 2009 and 2010 and for the period from July 14, 2000, the date of inception, to June 30, 2010, was $1.6 million, $3.0 million, $4.1 million, $1.9 million, $2.3 million and $12.7 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

PACIFIC BIOSCIENCES OF CALIFORNIA, INC.
(A development stage enterprise)

Notes to Financial Statements—(Continued)

4. Property and Equipment, Net (Continued)

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 on the balance sheet as of June 30, 2010.

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 the owner of the facility, we depreciate the assets over their expected useful lives.

5. Accrued Expenses and Other Current Liabilities

As of December 31, 2008 and 2009, and June 30, 2010, our accrued expenses and other current liabilities consisted of the following (in thousands):

	December 31,		June 30,
	2008	2009	2010
			(unaudited)
Salaries and benefits	$ 928	$1,785	$ 2,823
Professional services	175	358	1,167
Series F Convertible Preferred Stock issuance costs	—	—	2,745
Other	454	498	1,702
	$1,557	$2,641	$ 8,437

6. 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 on the balance sheet as of June 30, 2010.

Based on the allocation of payments, the facility financing obligation bears an implied interest rate of 9.0%. During the six-month period ended June 30, 2010, we recognized $45,000 of interest expense in our statement of operations relating to the facility financing obligation.

PACIFIC BIOSCIENCES OF CALIFORNIA, INC.
(A development stage enterprise)

Notes to Financial Statements—(Continued)

6. Facility Financing and Debt Obligations (Continued)

As of June 30, 2010, the future minimum payments due under the facility financing obligation were as follows (in thousands):

	Financing obligation
2010	$ 132
2011	408
2012	426
2013	444
2014	619
Total Payments	2,029
Less amount representing interest	(1,174)
	855
Property reverting to landlord	2,161
Present value of obligation	3,016
Less current portion of obligation	(61)
Long-term portion of obligation	$ 2,955

Notes Payable

In November 2004, we entered into a loan and security agreement with two financial institutions that acted as co-lenders. Under the loan and security agreement, we were able to receive advances up to $2.0 million for general operating purposes. Principal amounts drawn were repayable over 24 months beginning January 1, 2006 and bore an interest rate of the greater of 5.5% or prime plus 1.0%. Upon the maturity date of the loan, a separate payment of 5.0% of the drawn amount was due. Amounts drawn were collateralized by the property and equipment purchases. As of December 31, 2008, the entire loan amount had been fully repaid.

In January 2006, we entered into a loan and security agreement with a financial institution. Under the loan and security agreement, we were able to receive advances up to $2.0 million for general operating purposes. Principal amounts drawn were repayable over 30 months beginning July 1, 2007 and at an interest rate of the greater of 8.25% or prime plus 0.50%. The amounts drawn were collateralized by property and equipment purchases. We drew the entire amount in 2007 and as of December 31, 2009, the loan has been fully repaid.

At December 31, 2008 and 2009 the fair value approximates the carrying value of our note payable and facility financing obligation.

7. Commitments and Contingencies

Operating Lease Commitment

As of June 30, 2010 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 July 2015. The terms of the operating lease agreements provide for rental payments on a graduated scale and we recognize rent expense on a straight-line basis over the lease period and accrue for rent expense incurred but not paid. Several of our leases contain rent escalation clauses, abatements and concessions, such as rent holidays and landlord or tenant incentives or allowances that are applied to the determination of straight-line rent expense over the lease term.

PACIFIC BIOSCIENCES OF CALIFORNIA, INC.
(A development stage enterprise)

Notes to Financial Statements—(Continued)

7. Commitments and Contingencies (Continued)

Rent expense for 2007, 2008, 2009, the six-month periods ended June 30, 2009 and 2010 and, cumulatively, for the period from July 14, 2000, the date of inception, to June 30, 2010, was $0.3 million, $1.1 million, $1.4 million, $0.6 million, $0.9 million and $4.5 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, 2009, 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
2010	$2,018
2011	992
2012	185
2013	185
2014	185
Thereafter	63
Total minimum lease payments	$3,628

During February 2010, we entered into a lease agreement for an additional office facility. Pursuant to the terms of the lease agreement, we are required to pay our share of the facility's operating expenses and will be subject to scheduled rent escalations. The lease agreement expires during July 2015, after which we may extend the term for up to three years subject to certain conditions.

As of June 30, 2010, 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
2010	$1,165
2011	2,046
2012	1,271
2013	1,202
2014	926
Thereafter	501
Total minimum lease payments	$7,111

On July 30, 2010 we delivered notice to the lessor of our intent to vacate one of our facilities during September 2010, prior to the expiration of the lease agreement. As a result of the decision to vacate prior to the expiration of the lease agreement, we are obligated to pay an early termination penalty of $64,000. Furthermore, upon vacating the facility our committed cash payments for 2010 and 2011 will be reduced by $148,000 and $212,000, respectively.

Patent Agreement

During 2007, we entered into an agreement to purchase certain patents. The purchase agreement required a payment upfront of $1.5 million and an additional $0.5 million to be paid on the first and second anniversaries of the effective date. Payments for the years ended December 31, 2008 and 2009 and, cumulatively, for the period from July 14, 2000, the date of inception, to December 31, 2009 were $0.5 million, $0.5 million and $2.5 million, respectively, and were expensed as incurred.

PACIFIC BIOSCIENCES OF CALIFORNIA, INC.
(A development stage enterprise)

Notes to Financial Statements—(Continued)

7. Commitments and Contingencies (Continued)

License Agreements

We have entered into four 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 2007, 2008 and 2009, the six-month periods ended June 30, 2009 and 2010 and, cumulatively, for the period from July 14, 2000, our date of inception, to June 30, 2010, were $15,000, $0.1 million, $0.2 million, $0.1 million, $0.3 million and $0.7 million, respectively. Pursuant to the terms of the agreements, future license maintenance fees and minimum royalty payments amount to $0.3 million for 2010, $0.4 million for each of 2011, 2012 and 2013 and thereafter.

Upon commercialization of products including the licensed technologies, we may be obligated to pay certain milestone fees of up to $80,000. In addition, upon commercialization of products incorporating a technology provided under one license agreement, the amounts owed by us under that license decrease by $5,000 in the first year following commercialization, return to the pre-commercialization amounts for the second year following commercialization, increase by $10,000 the third year and by $25,000 the fourth year following commercialization of products incorporating that licensed technology.

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.

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. 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, 2009.

PACIFIC BIOSCIENCES OF CALIFORNIA, INC.
(A development stage enterprise)

Notes to Financial Statements—(Continued)

8. Income Taxes

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

	Years Ended December 31,		
	2007	2008	2009
Statutory tax rate	(34.0)%	(34.0)%	(34.0)%
State tax rate, net of federal benefit	(5.8)	(5.8)	(5.8)
Stock based compensation	2.8	1.3	1.0
Federal R&D credit	(1.5)	(2.8)	(2.6)
CA R&D credit	(1.9)	(1.9)	(1.8)
Other	0.1	0.4	0.3
Change in valuation allowance	38.7	42.5	42.9
Prior years true up	1.6	0.3	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,	
	2008	2009
Net operating loss carryforwards	$ 29,418	$ 60,503
Research and development credits	3,684	7,568
Depreciation	1,159	2,272
Accruals and reserves	2,097	3,665
	36,358	74,008
Less: Valuation allowance	(36,358)	(74,008)
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 $8.3 million, $18.6 million and $37.7 million during the years ended December 31, 2007, 2008 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, 2009.

As of December 31, 2009, we had federal and California net operating loss carryforwards of approximately $151.9 million and $152.0 million, respectively, available to reduce future taxable income, if any.

The federal net operating loss carryforward begins expiring in 2025, and the California net operating loss carryforward begins expiring in 2015.

We also had federal and California state research and development credit carryforwards of approximately $6.4 million and $6.7 million, respectively, as of December 31, 2009. The federal credits will expire starting 2025 if not utilized. The California tax credits can be carried forward indefinitely.

PACIFIC BIOSCIENCES OF CALIFORNIA, INC.
(A development stage enterprise)
Notes to Financial Statements—(Continued)

8. Income Taxes (Continued)

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.

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, 2009, our total unrecognized tax benefit was $3.9 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):

Beginning balance as of January 1, 2007 (date of adoption)	$ 462
Increase in balance related to tax positions taken during 2007	398
Balance as of December 31, 2007	860
Increase in balance related to tax positions taken in prior year	(8)
Increase in balance related to tax positions taken during 2008	1,060
Balance as of December 31, 2008	1,912
Increase in balance related to tax positions taken during current year	2,025
Balance as of December 31, 2009	$3,937

Our practice is to recognize interest and/or penalties related to income tax matters in income tax expense. As of December 31, 2008 and 2009, we had no accrued interest or penalties due to our net operating losses available to offset any tax adjustment. We currently have no federal or state tax examinations in progress nor have we had any federal or state tax examinations since our inception. As a result of our net operating loss carryforwards, all of our tax years are subject to federal and state tax examination.

9. Convertible Preferred Stock and Junior Preferred Stock

Pursuant to our amended and restated articles of incorporation, we issue convertible preferred stock in series and with rights, preferences and terms as determined by our board of directors.

Conversion of Original Common Stock to Junior Preferred Stock

On August 11, 2005 we converted all issued and outstanding shares of common stock into a new series of convertible preferred stock, called junior preferred stock, in connection with an equity reorganization. In total 7,573,153 shares of common stock converted into junior preferred stock at a ratio of 1:1. The fair value of the junior preferred stock on the date of conversion was deemed to be $1.70 per share. To record the conversion, the difference between the then carrying value of the common stock and the fair value of the junior preferred stock resulted in an increase to accumulated deficit of $12.8 million.

On August 28, 2005, we repurchased 1,000,000 shares of junior preferred stock from one of our founders.

Included in junior preferred stock as of December 31, 2007, 2008, 2009 and June 30, 2010 are 246,992, 23,473, 0 and 0 shares, respectively, subject to our right of repurchase relating to restricted stock purchase agreements.

PACIFIC BIOSCIENCES OF CALIFORNIA, INC.
(A development stage enterprise)

Notes to Financial Statements—(Continued)

9. Convertible Preferred Stock and Junior Preferred Stock (Continued)

As of December 31, 2008, our convertible preferred stock consisted of the following (dollars in thousands):

Series	Shares		Proceeds net of issuance costs	Conversion to junior preferred stock	Carrying amount	Liquidation value
	Authorized	Outstanding				
A	5,405,992	5,405,992	$ 5,237	$ —	$ 5,237	$ 5,406
B	3,530,768	3,500,000	4,495	—	4,495	4,550
C	5,342,196	5,322,396	10,669	—	10,669	10,751
D	12,525,000	12,500,000	49,812	—	49,812	50,000
E	17,142,908	17,142,908	119,831	—	119,831	120,000
Junior Preferred Stock	50,680,942	6,496,160	275	10,766	11,041	6,496
	94,627,806	50,367,456	$ 190,319	$ 10,766	$ 201,085	$ 197,203

As of December 31, 2009, our convertible preferred stock consisted of the following (dollars in thousands):

Series	Shares		Proceeds net of Issuance costs	Conversion to junior preferred stock	Carrying amount	Liquidation value
	Authorized	Outstanding				
A	5,405,992	5,405,992	$ 5,237	$ —	$ 5,237	$ 5,406
B	3,530,768	3,500,000	4,495	—	4,495	4,550
C	5,342,197	5,322,396	10,669	—	10,669	10,751
D	12,525,000	12,500,000	49,812	—	49,812	50,000
E	27,857,195	26,866,790	187,841	—	187,841	188,068
Junior Preferred Stock	61,395,230	6,506,160	281	10,766	11,047	6,506
	116,056,382	60,101,338	$ 258,335	$ 10,766	$ 269,101	$ 265,281

2010 Convertible Preferred Stock Financing

In June 2010, we issued 13,204,185 shares of Series F convertible preferred stock at $7.63 per share for gross proceeds of $100.7 million. At June 30, 2010, our convertible preferred stock consisted of the following (dollars in thousands):

Series	Shares		Proceeds net of issuance costs	Conversion to junior preferred stock	Carrying amount	Liquidation value
	Authorized	Outstanding				
A	5,405,992	5,405,992	$ 5,237	$ —	$ 5,237	$ 5,406
B	3,530,768	3,500,000	4,495	—	4,495	4,550
C	5,342,197	5,322,396	10,669	—	10,669	10,751
D	12,525,000	12,500,000	49,812	—	49,812	50,000
E	26,866,790	26,866,790	187,841	—	187,841	188,068
F (unaudited)	19,659,240	13,204,185	97,935	—	97,935	100,748
Junior Preferred Stock	80,064,065	6,506,160	281	10,766	11,047	6,506
	153,394,052	73,305,523	$ 356,270	$ 10,766	$ 367,036	$ 366,029

PACIFIC BIOSCIENCES OF CALIFORNIA, INC.
(A development stage enterprise)

Notes to Financial Statements—(Continued)

9. Convertible Preferred Stock and Junior Preferred Stock (Continued)

During July 2010, we issued an additional 1,061,597 shares of Series F convertible preferred stock at $7.63 per share for gross proceeds of $8.1 million.

The significant rights, privileges and preferences of our convertible preferred stock are as follows:

Voting Rights

The holders of Series A, Series B, Series C, Series D, Series E, Series F and junior convertible preferred stock are all entitled to 10 votes for each share of common stock into which such share may be converted, and the vote of the holders of a majority of our convertible preferred stock is required to effect certain corporate actions. In addition, the vote of the holders of a majority of each of our Series D and Series E and 40% of the holders of Series F convertible preferred stock voting together as a single class and on an as-if-converted basis is required to effect, among other things, (i) a modification of our articles of incorporation (ii) any winding up or liquidation of our company, (iii) a sale, license or other disposition of all or substantially all of our assets, and (iv) certain mergers or acquisitions of our company with or into any other corporation or entity.

Dividends

Holders of Series A, Series B, Series C, Series D, Series E, Series F and junior convertible preferred stock are entitled to receive non-cumulative dividends at the per annum rate of $0.08, $0.10, $0.16, $0.32, $0.56, $0.61 and $0.08 per share, respectively, when and if declared by our board of directors. Junior preferred stock is only entitled to dividends after distribution to all other classes of convertible preferred stock. No dividends have been declared since inception.

Liquidation Preference

In the event of any liquidation, dissolution or winding up of our company whether voluntary or involuntary, the holders of Series A, Series B, Series C, Series D, Series E and Series F convertible preferred stock are entitled to receive out of the assets of our company, an amount equal to $1.00, $1.30, $2.02, $4.00, $7.00 and $7.63 per share, respectively, plus any declared but unpaid dividends. The remaining assets, if any, shall be distributed among holders of the junior preferred stock at $1.00 per share, and after that to the common stockholders. If upon such liquidation, dissolution or winding up event, our assets are insufficient to provide for the cash payment of the full preferential amount to the holders of Series A, Series B, Series C, Series D, Series E and Series F convertible preferred stock, such assets shall be distributed ratably among the holders of those classes of stock in proportion to the full preferential amount each holder is otherwise entitled to receive.

Conversion Rights

Each share of convertible preferred stock, at the option of the holder, is convertible at any time into the number of fully paid and nonassessable shares of common stock, as adjusted to reflect stock dividends, stock splits and recapitalization, that results from dividing the original issue price by the applicable conversion price in effect at the time of the conversion. Additionally, any shares of Series A through F convertible preferred stock, at the option of the holder, may be converted at any time into fully paid and nonassessable shares of junior preferred stock at the same rate as such shares would be convertible into shares of common stock. Any shares of junior preferred stock may be converted to common stock on an one-for-one basis. The initial per share conversion price of the Series A, Series B, Series C, Series D, Series E and Series F convertible preferred stock is

PACIFIC BIOSCIENCES OF CALIFORNIA, INC.
(A development stage enterprise)

Notes to Financial Statements—(Continued)

9. Convertible Preferred Stock and Junior Preferred Stock (Continued)

$1.00, $1.30, $2.02, $4.00, $7.00 and $7.63 per share, respectively, and subject to adjustment in accordance with anti-dilution provisions contained in our amended and restated certificate of incorporation.

Each share of convertible preferred stock is convertible on a one-for-one basis into common stock. At December 31, 2009, we had reserved sufficient shares of common stock for issuance upon conversion of the convertible preferred stock. If not previously converted at the option of the holder, the conversion of the convertible preferred stock is automatic and will be converted at the then applicable conversion prices upon the earlier of any of the following events: (i) affirmative election of the holders of at least a majority of the then outstanding shares of the convertible preferred stock and at least a majority of the Series D convertible preferred stock, or (ii) the closing of a firm commitment underwritten public offering based on an effective registration statement under the Securities Act of 1933 for the offer and sale of our common stock in which the per share price is at least $7.63, adjusted for stock splits, stock dividends, and recapitalizations, and the gross cash proceeds to us, before underwriting discounts, commissions and fees are at least $50 million.

Redemption

Our convertible preferred stock is not redeemable.

Warrants to Purchase Convertible Preferred Stock

In connection with the loan and security agreement we entered into during November 2004, we issued warrants to purchase 15,384 shares of our Series B convertible preferred stock at $1.30 per share. The warrants are immediately exercisable and expire during November 2011. The warrant provides for cash exercise or conversion into the number of shares calculated by dividing the value of the Series B convertible preferred stock by the exercise price, or net share settlement. The warrant provides for the delivery of unregistered shares and does not allow net cash settlement.

We valued the warrants using the Black-Scholes option pricing model. The aggregate estimated fair value of the warrants, assuming 75% volatility, a 3.60% risk-free rate of interest, a contractual life of seven years and a per share fair value of our convertible preferred stock at the time of issuance of $1.30 per share, amounted to $21,000 and was recorded as a deferred financing cost in other current assets. The amortization of this deferred charge is recognized as additional interest expense over the term of the financing arrangement. As of December 31, 2005, the entire fair value of these warrants had been amortized as interest expense. As of June 30, 2010, none of these warrants have been exercised.

In connection with the drawdown under the loan and security agreement entered into during November 2004, we issued warrants during 2005 to purchase an additional 15,384 shares of Series B convertible preferred stock at $1.30 per share. We valued the warrants using the Black-Scholes option pricing model. The aggregate estimated fair value of the warrants, assuming 75% volatility, a 3.88% risk-free rate of interest, a contractual life of seven years and per share fair value range of our convertible preferred stock at the time of issuance of $1.30 - $2.02 per share, amounted to $11,000 and was recorded as a deferred financing cost in other current assets. The amortization of this deferred charge will be recognized as additional interest expense over the term of the loan. As of December 31, 2008, the entire fair value of these warrants had been amortized as interest expense. As of June 30, 2010, none of these warrants have been exercised.

In connection with the loan and security agreement we entered into during January 2006, we issued warrants to purchase 14,644 shares of our Series C convertible preferred stock at $2.02 per share. The warrants are

PACIFIC BIOSCIENCES OF CALIFORNIA, INC.
(A development stage enterprise)

Notes to Financial Statements—(Continued)

9. Convertible Preferred Stock and Junior Preferred Stock (Continued)

immediately exercisable and expire seven years after issuance. The warrant provides for cash exercise or conversion into the number of shares calculated by dividing the value of the Series C convertible preferred stock by the exercise price, or net share settlement. The warrant provides for the delivery of unregistered shares and does not allow net cash settlement.

We valued the warrants using the Black-Scholes option pricing model. The aggregate fair value of the warrants, assuming 75% volatility, a 4.35% risk-free rate of interest, a contractual life of seven years and a per share fair value of our convertible preferred stock at the time of issuance of $2.02 per share, amounted to $23,000 and was recorded as a deferred financing cost in other assets. During 2007, we issued an additional 5,157 shares in connection with the loan agreement. The aggregate fair value of these warrants, assuming 60% volatility, a 4.48% risk-free rate of interest, a contractual life of seven years and a per share fair value of our convertible preferred stock at the time of issuance of $4.00 per share, amounted to $16,000. The amortization of this deferred charge was recognized as additional interest expense over the term of the financing arrangement. During the years ended December 31, 2007 and 2008, we recorded interest expense totaling $16,000 and $13,000, respectively, associated with amortizing the fair value of the warrants. No additional interest expense was recorded during 2009. As of December 31, 2009, the entire fair value of these warrants had been amortized as interest expense. As of June 30, 2010, none of these warrants have been exercised.

The fair value of the warrants outstanding is classified as a liability and revalued on each reporting period with the resulting gains and losses recorded in other income or expense. For the years ended December 31, 2007 and 2009, we recorded losses of $10,000 and $84,000, respectively, as a result of an increase in the fair value of the warrants. For the year ended December 31, 2008 we recorded a gain of $9,000 as a result of a decrease in the fair value of the warrants. For the six-month period ended June 30, 2010 we recorded a loss of $56,000 as a result of an increase in fair value.

10. Common Stock

Our amended and restated certificate of incorporation authorized us to issue 121,668,835 shares of common stock as of June 30, 2010 with a $0.0001 par value per share. 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.

On September 1, 2000, we issued 4,341,006 shares of restricted common stock at $0.0013 per share to our founders under a restricted stock purchase agreement, as amended on March 4, 2004. On January 25, 2004, 246,752 shares of restricted common stock at $0.0013 per share were issued to a certain consultant under a restricted stock purchase agreement, as amended on March 4, 2004. For each agreement, 30% of the shares vest immediately on March 4, 2004, and the remaining shares vest over a four-year period. In August 2005, these shares were converted into junior preferred stock. These shares were fully vested as of December 31, 2009.

Early Exercise of Employee Options

Stock options granted under our stock options plans provide employee option holders the right to exercise unvested options in exchange for restricted common stock. The stock option tables in Note 11 include unvested shares which amounted to 406,833, 310,729, 118,291, and 310,929 at December 31, 2007, 2008, 2009 and June 30, 2010, 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.

PACIFIC BIOSCIENCES OF CALIFORNIA, INC.
(A development stage enterprise)

Notes to Financial Statements—(Continued)

10. Common Stock (Continued)

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, 2007, 2008, 2009 and June 30, 2010, we included cash received for early exercise of options of $89,000, $0.2 million, $0.2 million and $0.5 million, respectively, in accrued liabilities. Amounts from accrued liabilities are transferred into common stock and additional paid-in capital as the shares vest.

11. Stock Option Plans

2005 Stock Plan

During August 2005, we adopted the 2005 Stock Plan, or 2005 Plan. The 2005 Plan provides for the granting of stock options to our employees, directors and consultants. Options granted under the 2005 Plan may be either incentive stock options or nonqualified stock options. Incentive stock options, or ISO, may be granted only to our employees. Nonqualified stock options, or NSO, may be granted to all eligible recipients. At December 31, 2009 and June 30, 2010, there were 18,306,169 and 23,306,169 shares, respectively, of common stock authorized for issuance under the 2005 plan.

Options under the 2005 Plan may be granted for periods of up to ten years and at prices no less than 85% of the estimated fair value of the shares on the date of grant as determined by our board of directors, provided, however, that (i) the exercise price of an ISO and NSO shall not be less than 100% and 85%, respectively, of the estimated fair value of the shares on the date of grant, and (ii) the exercise price of an ISO or an NSO granted to a more than 10% stockholder shall not be less than 110% of the estimated fair value of the shares on the date of grant. The options generally vest over four years, however, option holders may early exercise but shares are subject to a right of repurchase. The vesting provisions of individual options may vary but provide for vesting of at least 20% per year.

PACIFIC BIOSCIENCES OF CALIFORNIA, INC.
(A development stage enterprise)

Notes to Financial Statements—(Continued)

11. Stock Option Plans (Continued)

The following summarizes option activity under the 2005 Plan:

		Common Stock Options Outstanding		
	Shares available for grant	Number of shares	Exercise price	Weighted average exercise price
Shares reserved at plan inception	1,533,496			
Options granted	(974,825)	974,825	$ 0.35	$ 0.35
Balances, December 31, 2005	558,671	974,825	$ 0.35	$ 0.35
Additional shares reserved	2,453,470			
Options granted	(1,545,100)	1,545,100	$ 0.35	$ 0.35
Options exercised	—	(273,390)	$ 0.35	$ 0.35
Options canceled	48,168	(48,168)	$ 0.35	$ 0.35
Balances, December 31, 2006	1,515,209	2,198,367	$ 0.35	$ 0.35
Additional shares reserved	3,100,000			
Options granted	(4,445,398)	4,445,398	$ 0.35 - 0.98	$ 0.92
Options exercised	—	(274,266)	$ 0.35 - 0.98	$ 0.46
Options repurchased and added back into pool	14,064			
Options canceled	402,419	(402,419)	$ 0.35 - 0.98	$ 0.47
Balances, December 31, 2007	586,294	5,967,080	$ 0.35 - 0.98	$ 0.79
Additional shares reserved	5,807,847			
Options granted	(4,548,250)	4,548,250	$ 1.26 - 3.48	$ 2.62
Options exercised	—	(620,451)	$ 0.35 - 3.48	$ 0.72
Options canceled	213,299	(213,299)	$ 0.35 - 3.48	$ 1.09
Balances, December 31, 2008	2,059,190	9,681,580	$ 0.35 - 3.48	$ 1.65
Additional shares reserved	5,411,356			
Options granted	(3,572,500)	3,572,500	$ 1.93 - 4.25	$ 2.83
Options exercised	—	(168,481)	$ 0.35 - 3.48	$ 1.85
Options repurchased and added back into pool	10,355			
Options canceled	163,850	(163,850)	$ 0.98 - 3.48	$ 2.68
Balances, December 31, 2009	4,072,251	12,921,749	$ 0.35 - 4.25	$ 1.96
Additional shares reserved (unaudited)	5,000,000			
Options granted (unaudited)	(5,196,055)	5,196,055	$ 4.25 - 5.42	$ 4.51
Options exercised (unaudited)		(609,369)	$ 0.35 - 4.25	$ 1.31
Options canceled (unaudited)	161,010	(161,010)	$ 0.98 - 4.25	$ 2.65
Balances, June 30, 2010 (unaudited)	4,037,206	17,347,425	$ 0.35 - 5.42	$ 2.74

PACIFIC BIOSCIENCES OF CALIFORNIA, INC.
(A development stage enterprise)

Notes to Financial Statements—(Continued)

11. Stock Option Plans (Continued)

The following table summarizes information with respect to stock options outstanding and exercisable under the 2005 Plan at December 31, 2009 (dollars in thousands, except per share values):

	Options outstanding				Options vested and exercisable		
Exercise price	Number outstanding	Weighted average remaining contractual life (Years)	Weighted average exercise price	Aggregate intrinsic value	Number vested	Weighted average exercise price	Aggregate intrinsic value
$0.35 - 0.98	5,153,200	7.11	$ 0.80		3,431,820	$ 0.74	
$1.26 - 1.93	3,133,713	8.68	$ 1.59		704,642	$ 1.29	
$2.82 - 3.48	3,648,836	8.94	$ 3.30		823,880	$ 3.48	
$4.25	986,000	9.95	$ 4.25		37,833	$ 4.25	
	12,921,749		$ 1.96	$ 29,614	4,998,175	$ 1.30	$ 14,765

The following table summarizes information with respect to stock options outstanding and exercisable under the 2005 Plan at June 30, 2010 (dollars in thousands, except per share values):

	Options outstanding				Options vested and exercisable		
Exercise price	Number outstanding	Weighted average remaining contractual life (Years)	Weighted average exercise price	Aggregate intrinsic value	Number vested	Weighted average exercise price	Aggregate intrinsic value
$0.35 - 0.98	4,697,366	6.54	$ 0.80		3,683,087	$ 0.73	
$1.26 - 1.93	2,939,379	8.07	$ 1.59		1,272,279	$ 1.50	
$2.82 - 3.48	3,585,436	8.43	$ 3.30		1,269,593	$ 3.39	
$4.25 - 5.42	6,125,244	9.64	$ 4.25		734,942	$ 4.25	
	17,347,425		$ 2.74	$ 46,519	6,959,901	$ 1.73	$ 25,688

We have computed the aggregate intrinsic value amounts disclosed in the above table based upon the difference between the original exercise price of the options and our estimate of the deemed fair value of our common stock of $4.25 and $5.42 per share at December 31, 2009 and June 30, 2010, respectively.

The total intrinsic value of options exercised during the year ended December 31, 2009 and the six-month periods ended June 30, 2009 and June 30, 2010 was $0.3 million, $12,000 and $2.9 million, respectively.

2004 Stock Plan

During March 2004, we adopted the 2004 Equity Incentive Plan, or 2004 Plan. The 2004 Plan provides for the granting of stock options to our employees, directors and consultants. Options granted under the 2004 Plan may be either incentive stock options or nonqualified stock options. ISOs may be granted only to our employees. NSOs may be granted to all eligible recipients.

During August 2005, we amended this plan so that the option is now an option to purchase junior preferred stock. As a result of this amendment, we account for options to purchase junior preferred stock under variable plan accounting. Options available for grant under the 2004 Plan, as of that date, were canceled.

Options under the 2004 Plan may be granted for periods of up to ten years and at prices no less than 85% of the estimated fair value of the shares on the date of grant as determined by our board of directors, provided,

PACIFIC BIOSCIENCES OF CALIFORNIA, INC.
(A development stage enterprise)

Notes to Financial Statements—(Continued)

11. Stock Option Plans (Continued)

however, that (i) the exercise price of an ISO and NSO shall not be less than 100% and 85%, respectively, of the estimated fair value of the shares on the date of grant, and (ii) the exercise price of an ISO or an NSO granted to a more than 10% stockholder shall not be less than 110% of the estimated fair value of the shares on the date of grant. The options generally vest over four years, however, option holders may early exercise but shares are subject to a right of repurchase. The vesting provisions of individual options may vary but provide for vesting of at least 20% per year.

The following table summarizes option activity under the 2004 Plan:

	Junior preferred stock options outstanding		
	Number of shares	Exercise price	Weighted average exercise price
Shares reserved at plan inception			
Additional shares reserved			
Options granted	2,758,000	$ 0.10 - 0.13	$ 0.10
Options exercised	(1,690,750)	$ 0.10	$ 0.10
Balances, December 31, 2004	1,067,250	$ 0.10 - 0.13	$ 0.10
Options granted	566,625	$ 0.13	$ 0.13
Options exercised	(1,013,395)	$ 0.10 - 0.13	$ 0.12
Options canceled	(83,646)	$ 0.10 - 0.13	$ 0.10
Reserve shares canceled	—		
Balances, December 31, 2005	536,834	$ 0.10 - 0.13	$ 0.11
Options granted	—	$ —	$ —
Options exercised	(53,604)	$ 0.10 - 0.13	$ 0.11
Options canceled	(134,584)	$ 0.10 - 0.13	$ 0.13
Balances, December 31, 2006	348,646	$ 0.10 - 0.13	$ 0.11
Options exercised	(45,000)	$ 0.13	$ 0.13
Balances, December 31, 2007	303,646	$ 0.10 - 0.13	$ 0.11
Options exercised	(65,728)	$ 0.13	$ 0.13
Balances, December 31, 2008	237,918	$ 0.10 - 0.13	$ 0.11
Options exercised	(10,000)	$ 0.13	$ 0.13
Balances, December 31, 2009	227,918	$ 0.10 - 0.13	$ 0.11
Options exercised (unaudited)	—		
Balances, June 30, 2010 (unaudited)	227,918	$ 0.10 - 0.13	$ 0.11

PACIFIC BIOSCIENCES OF CALIFORNIA, INC.
(A development stage enterprise)

Notes to Financial Statements—(Continued)

11. Stock Option Plans (Continued)

The following table summarizes information with respect to stock options outstanding and exercisable under the 2004 Plan at December 31, 2009 (dollars in thousands, except per share values):

	Options outstanding				Options vested and exercisable		
Exercise price	Number outstanding	Weighted average remaining contractual life (Years)	Weighted average exercise price	Aggregate intrinsic value	Number vested	Weighted average exercise price	Aggregate intrinsic value
$0.10	172,918	4.42	$ 0.10		172,918	$ 0.10	
$0.13	55,000	4.80	$ 0.13		55,000	$ 0.13	
	227,918		$ 0.11	$ 944	227,918	$ 0.11	$ 944

The following table summarizes information with respect to stock options outstanding and exercisable under the 2004 Plan at June 30, 2010 (dollars in thousands, except per share values):

	Options outstanding				Options vested and exercisable		
Exercise price	Number outstanding	Weighted average remaining contractual life (Years)	Weighted average exercise price	Aggregate intrinsic value	Number vested	Weighted average exercise price	Aggregate intrinsic value
$0.10	172,918	3.92	$ 0.10		172,918	$ 0.10	
$0.13	55,000	4.30	$ 0.13		55,000	$ 0.13	
	227,918		$ 0.11	$ 1,211	227,918	$ 0.11	$ 1,211

We have computed the aggregate intrinsic value amounts disclosed in the above table based upon the difference between the original exercise price of the options and our estimate of the deemed fair value of our common stock of $4.25 and $5.42 per share at December 31, 2009 and June 30, 2010, respectively.

The total intrinsic value of options exercised during the year ended December 31, 2009 and the six-month periods ended June 30, 2009 and June 30, 2010 was not material.

Stock-based Compensation

Stock-based compensation expense related to options granted to employees and non-employees was allocated to research and development expense, sales, general and administrative expense as follows (in thousands):

	Years ended December 31,			Six-month periods ended June 30,		Cumulative period from July 14, 2000 (date of inception) to June 30, 2010
	2007	2008	2009	2009	2010	
				(unaudited)		(unaudited)
Research and development	$ 398	$ 1,183	$ 2,314	$ 1,062	$ 2,498	$ 6,443
Sales, general and administrative	184	387	748	332	1,242	2,638
Total stock-based compensation expense	$ 582	$ 1,570	$ 3,062	$ 1,394	$ 3,740	$ 9,081

PACIFIC BIOSCIENCES OF CALIFORNIA, INC.
(A development stage enterprise)

Notes to Financial Statements—(Continued)

11. Stock Option Plans (Continued)

Employee Stock-based Compensation

During the years ended December 31, 2007, 2008 and 2009, we granted 4,170,898, 4,364,750 and 3,425,000 stock options, respectively, to employees with a weighted-average grant date fair value of $0.63, $1.46 and $1.29 per share, respectively, and during the six-month period ended June 30, 2010 we granted 5,173,055 options to employees with a weighted-average grant date fair value of $2.17 per share. As of December 31, 2009 and June 30, 2010, there was unrecognized compensation costs of $7.9 million and $15.8 million, respectively, related to these stock options. We expect to recognize those costs over a weighted-average period of 3.3 years as of June 30, 2010. Future option grants will increase the amount of compensation expense to be recorded in these 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,			Six-month periods ended June 30,	
	2007	2008	2009	2009	2010
				(unaudited)	
Expected term	7.0 years	7.0 years	5.7 years	5.7 years	5.9 years
Expected volatility	60%	50 - 52%	46 - 48%	48%	46 - 55%
Risk-free interest rate	3.5 - 5.1%	2.8 - 3.5%	1.8 - 3.0%	1.8 - 3.0%	2.2 - 2.6%
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 — 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.

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

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.

Fair value of common stock — 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.

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

PACIFIC BIOSCIENCES OF CALIFORNIA, INC.
(A development stage enterprise)

Notes to Financial Statements—(Continued)

11. Stock Option Plans (Continued)

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 and director judgment to determine.

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 $95,000, $0.1 million, $0.5 million and $0.3 million for the years ended December 31, 2007, 2008 and 2009 and the six-month period ended June 30, 2010, respectively. Stock-based compensation expense for these options were $1.1 million, $0.6 million, $0.6 million and $0.3 million for the years ended December 31, 2007, 2008 and 2009 and the six-month period ended June 30, 2010, respectively.

Employee stock-based compensation and net loss for 2005 in the Statement of Convertible Preferred Stock and Stockholders' Equity (Deficit) has been revised from $1.3 million and $7.9 million to $4.3 million and $10.9 million, respectively, to correct for an error in the calculation of employee stock-based compensation in 2005.

Options Granted to Non-employees

During the years ended December 31, 2007, 2008, 2009 and for the six-month period ended June 30, 2010, we granted options to purchase 274,500, 191,500, 147,500 and 23,000 shares of common stock, respectively, to non-employees at exercise prices ranging from $0.98 to $5.42 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, $0.3 million, $0.4 million and $1.6 million, for the years ended December 31, 2007, 2008 and 2009 and the period from July 14, 2000, the date of inception, to June 30, 2010, respectively. Compensation expense of $0.1 million and $0.6 million was recorded for the six-month periods ended June 30, 2009 and 2010, respectively.

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

	Years ended December 31,			Six-month periods ended June 30,	
	2007	2008	2009	2009	2010
				(unaudited)	
Contractual life	10 years	10 years	10 years	10 years	10 years
Expected volatility	60%	75%	75%	75%	60 - 75%
Risk-free interest rate	4.1%	2.4 - 4.1%	2.8 - 3.7%	2.8 - 3.7%	3.7 - 3.9%
Dividend yield	—	—	—	—	—

PACIFIC BIOSCIENCES OF CALIFORNIA, INC.
(A development stage enterprise)

Notes to Financial Statements—(Continued)

11. Stock Option Plans (Continued)

Shares Reserved for Future Issuance

As of December 31, 2009 and June 30, 2010 we had reserved shares of Common Stock for issuance as follows:

	December 31, 2009	June 30, 2010 (unaudited)
Conversion of Convertible Preferred Stock*	60,101,338	73,305,523
Issuance of Common Stock Options	16,994,000	21,384,631
Issuance of Junior Preferred Stock Options*	227,918	227,918
Issuance upon exercise of Convertible Preferred Stock warrants*	50,569	50,569
	77,373,825	94,968,641

* The convertible preferred stock, junior preferred stock options and convertible preferred stock warrants were computed on an as-converted basis using the conversion ratios in effect as of June 30, 2010 for all periods presented.

12. Employee Benefit Plan

During 2005, we established 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.

13. Subsequent Events (unaudited)

On August 27, 2010, we were named as a defendant in a complaint alleging infringement of patents owned and in-licensed by the plaintiff. We presently are unable to assess a likely outcome, however, we believe the suit is without merit and plan to vigorously defend ourselves.

Table of Contents

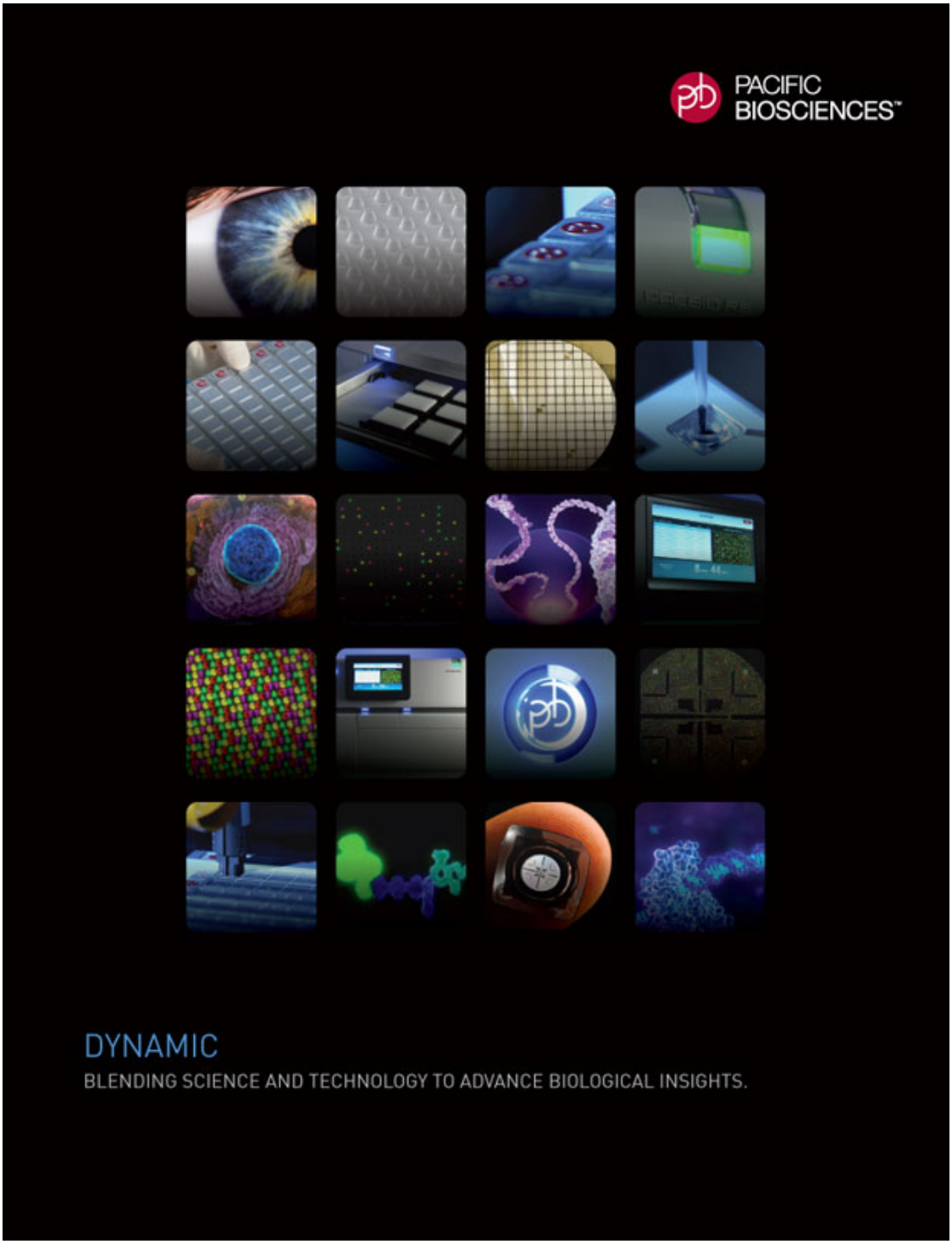


Table of Contents

PART II

INFORMATION NOT REQUIRED IN THE PROSPECTUS

Item 13. Other expenses of issuance and distribution.

Estimated expenses, other than underwriting discounts and commissions, payable by the Registrant in connection with the sale of the common stock being registered under this registration statement are as follows:

SEC registration fee	$ 14,260
FINRA filing fee	20,500
Listing fee	*
Printing and engraving expenses	*
Legal fees and expenses	*
Accounting fees and expenses	*
Blue Sky fees and expenses (including legal fees)	*
Transfer agent and registrar fees and expenses	*
Miscellaneous	*
Total	$ *

* To be filed by amendment.

Item 14. Indemnification of directors and officers.

Upon the closing of this offering, the Registrant's amended and restated certificate of incorporation will contain provisions that eliminate, to the maximum extent permitted by the General Corporation Law of the State of Delaware, the personal liability of the Registrant's directors and executive officers for monetary damages for breach of their fiduciary duties as directors or officers. The Registrant's amended and restated certificate of incorporation and bylaws will provide that the Registrant must indemnify its directors and executive officers and may indemnify its employees and other agents to the fullest extent permitted by the General Corporation Law of the State of Delaware.

Sections 145 and 102(b)(7) of the General Corporation Law of the State of Delaware provide that a corporation may indemnify any person made a party to an action by reason of the fact that he or she was a director, executive officer, employee or agent of the corporation or is or was serving at the request of a corporation against expenses, including attorneys' fees, judgments, fines and amounts paid in settlement actually and reasonably incurred by him or her in connection with such action if he or she acted in good faith and in a manner he or she reasonably believed to be in, or not opposed to, the best interests of the corporation and, with respect to any criminal action or proceeding, had no reasonable cause to believe his or her conduct was unlawful, except that, in the case of an action by or in right of the corporation, no indemnification may generally be made in respect of any claim as to which such person is adjudged to be liable to the corporation.

The Registrant intends to enter into indemnification agreements with its directors and executive officers, in addition to the indemnification provided for in its amended and restated certificate of incorporation and bylaws, and intends to enter into indemnification agreements with any new directors and executive officers in the future.

The Registrant has purchased and intends to maintain insurance on behalf of each and any person who is or was a director or officer of the Registrant against any loss arising from any claim asserted against him or her and incurred by him or her in any such capacity, subject to certain exclusions.

The Underwriting Agreement, to be attached as Exhibit 1.1, provides for indemnification by the underwriters of the Registrant and its executive officers and directors, and by the Registrant of the underwriters, for certain liabilities, including liabilities arising under the Securities Act.

See also the undertakings set out in response to Item 17 herein.

Item 15. Recent sales of unregistered securities.

During the last three years, we sold the following unregistered securities:

(1) From January 1, 2007 through July 31, 2010, we sold and issued to our employees, consultants or former service providers an aggregate of 120,728 shares of common stock pursuant to option exercises under the 2004 Equity Incentive Plan, as amended, at prices ranging from $0.10 to $0.13 per share for an aggregate purchase price of $14,473.

(2) From January 1, 2007 through July 31, 2010, we sold and issued to our employees, consultants or former service providers an aggregate of 1,888,903 shares of common stock pursuant to option exercises under the 2005 Stock Plan, as amended, at prices ranging from $0.35 to $6.37 per share for an aggregate purchase price of $2,345,980.

(3) From January 1, 2007 through July 31, 2010, we granted options under our 2005 Stock Plan, as amended, to purchase 18,769,703 shares of common stock to our employees, directors and consultants, having exercise prices ranging from $0.98 to $6.37 per share for an aggregate exercise price of $56,242,373.

(4) Between July 2008 and July 2009, we sold and issued 26,866,790 shares of Series E convertible preferred stock to 63 accredited investors, at $7.00 per share, for a total consideration of $188,067,530.

(5) Between June and July 2010, we sold and issued 14,265,782 shares of Series F convertible preferred stock to 19 accredited investors, at $7.63 per share, for a total consideration of $108,847,917.

None of the foregoing transactions involved any underwriters, underwriting discounts or commissions, or any public offering, and the registrant believes that each transaction was exempt from the registration requirements of the Securities Act in reliance on the following exemptions:

- with respect to the transactions described in paragraphs (1), (2) and (3), Rule 701 promulgated under the Securities Act as transactions pursuant to a compensatory benefit plan approved by the registrant's board of directors or Section 4(2) of the Securities Act as transactions by an issuer not involving a public offering; and
- with respect to the transactions described in paragraph (4), Section 4(2) of the Securities Act and Rule 506 of Regulation D promulgated thereunder, and with respect to the transactions described in paragraph (5), Section 4(2) of the Securities Act, in each case as transactions by an issuer not involving a public offering. Each recipient of the securities in these transactions represented his or her intention to acquire the securities for investment only and not with a view to, or for resale in connection with, any distribution thereof, and appropriate legends were affixed to the share certificates issued in each such transaction. In each case, the recipient received adequate information about the registrant or had adequate access, through his or her relationship with the registrant, to information about the registrant.

There were no underwriters employed in connection with any of the transactions set forth in Item 15.

Item 16. Exhibits and financial statement schedules.

(a) Exhibits:

Exhibit number	Exhibit title
1.1*	Form of Underwriting Agreement
3.1#	Amended and Restated Certificate of Incorporation of the Registrant, as currently in effect
3.2*	Form of Amended and Restated Certificate of Incorporation of the Registrant, to be effective upon closing of the offering
3.3#	Amended and Restated Bylaws of the Registrant, as currently in effect
3.4*	Form of Amended and Restated Bylaws of the Registrant, to be effective upon closing of the offering
4.1*	Specimen Common Stock Certificate of the Registrant
4.2#	Fifth Amended and Restated Investor Rights Agreement, dated June 16, 2010
5.1*	Opinion of Wilson Sonsini Goodrich & Rosati, Professional Corporation
10.1#	Form of Director and Executive Officer Indemnification Agreement
10.2#	2004 Equity Incentive Plan and forms of option agreements thereunder
10.3#	2005 Stock Plan and forms of option agreements thereunder
10.4#	2010 Equity Incentive Plan and forms of option agreements thereunder to be in effect upon the closing of this offering
10.5#	2010 Employee Stock Purchase Plan and forms of agreement thereunder to be in effect upon the closing of this offering
10.6#	2010 Outside Director Equity Incentive Plan and forms of agreement thereunder to be in effect upon the closing of this offering
10.7†	Collaboration Agreement by and between the Registrant and Gen-Probe Incorporated, dated as of June 15, 2010
10.8†	Exclusive License Agreement by and between the Registrant and Cornell Research Foundation, Inc., dated as of February 1, 2004
10.9†	License Agreement by and between the Registrant and GE Healthcare Bio-Sciences Corp., dated as of September 11, 2006
10.10†	Exclusive License Agreement by and between the Registrant and Indiana University Research and Technology Corporation, dated May 15, 2005
10.11#	Amended and Restated Lease Agreement by and between the Registrant and Menlo Business Park, LLC, dated as of December 17, 2007
10.12#	Lease Agreement by and between the Registrant and Menlo Business Park LLC, dated August 14, 2009
10.13#	Industrial Lease Agreement by and between the Registrant and AMB Property, L.P., dated December 10, 2009
10.14#	Industrial Lease Agreement by and between the Registrant and AMB Property, L.P., dated September 24, 2009
10.15#	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

Exhibit number	Exhibit title
10.16#	Industrial Lease Agreement by and between the Registrant and AMB Property, L.P., dated February 8, 2010
10.17	Employment Agreement by and between the registrant and Hugh Martin effective September 16, 2010
10.18	Change in Control Severance Agreement by and between the registrant and Hugh Martin effective September 16, 2010
10.19	Letter Relating to Employment Terms by and between the registrant and Susan K. Barnes effective September 15, 2010
10.20	Change in Control Severance Agreement by and between the registrant and Susan K. Barnes effective September 9, 2010
10.21	Letter Relating to Employment Terms by and between the registrant and Stephen Turner effective September 15, 2010
10.22	Change in Control Severance Agreement by and between the registrant and Stephen Turner effective September 9, 2010
10.23	Letter Relating to Employment Terms by and between the registrant and James Michael Phillips effective September 15, 2010
10.24	Change in Control Severance Agreement by and between the registrant and James Michael Phillips effective September 9, 2010
21.1#	List of subsidiaries of the Registrant
23.1	Consent of PricewaterhouseCoopers LLP, Independent Registered Public Accounting Firm
23.2*	Consent of Wilson Sonsini Goodrich & Rosati, Professional Corporation (included in Exhibit 5.1)
24.1	Power of Attorney (see page II-7 to this registration statement on Form S-1)

* To be filed by amendment.

\# Previously filed.

† 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.

Item 17. Undertakings.

Insofar as indemnification for liabilities arising under the Securities Act of 1933, as amended, may be permitted to directors, officers and controlling persons of the Registrant pursuant to the foregoing provisions, or otherwise, the Registrant has been advised that in the opinion of the Securities and Exchange Commission such indemnification is against public policy as expressed in the Securities Act of 1933, as amended, and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the Registrant of expenses incurred or paid by a director, officer or controlling person of the Registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the Registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Securities Act of 1933, as amended, and will be governed by the final adjudication of such issue.

We hereby undertake that:

(a) We will provide to the underwriters at the closing as specified in the underwriting agreement certificates in such denominations and registered in such names as required by the underwriters to permit prompt delivery to each purchaser.

(b) For purposes of determining any liability under the Securities Act of 1933, as amended, the information omitted from a form of prospectus filed as part of this registration statement in reliance upon Rule 430A and contained in the form of prospectus filed by the Registrant pursuant to Rule 424(b)(1) or (4) or 497(h) under the Securities Act of 1933, as amended, shall be deemed to be part of this registration statement as of the time it was declared effective.

(c) For the purpose of determining any liability under the Securities Act of 1933, as amended, each post-effective amendment that contains a form of prospectus shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

Table of Contents

Signatures

Pursuant to the requirements of the Securities Act of 1933, the registrant has duly caused this registration statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of Menlo Park, State of California, on September 17, 2010.

PACIFIC BIOSCIENCES OF CALIFORNIA, INC.

By: /S/ SUSAN K. BARNES
Susan K. Barnes
Senior Vice President and Chief Financial Officer

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
*	Chairman, Chief Executive Officer and President	September 17, 2010
Hugh C. Martin		
/S/ SUSAN K. BARNES	Senior Vice President and	September 17, 2010
Susan K. Barnes	Chief Financial Officer	
*	Vice President and	September 17, 2010
Brian B. Dow	Principal Accounting Officer	
*	Director	September 17, 2010
David Baltimore		
*	Director	September 17, 2010
Brook Byers		
*	Director	September 17, 2010
William W. Ericson		
*	Director	September 17, 2010
Michael Hunkapiller		
*	Director	September 17, 2010
Randall S. Livingston		
*	Director	September 17, 2010
Susan Siegel		
*	Director	September 17, 2010
David B. Singer		

*By: /S/ SUSAN K. BARNES
Susan K. Barnes
Attorney in Fact

Power of attorney

KNOW ALL MEN BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints Hugh C. Martin and Susan K. Barnes, jointly and severally, as his true and lawful attorneys-in-fact and agents, with full power of substitution and resubstitution, for him and in his name, place and stead, in any and all capacities, to sign the Amendment No. 1 to the Registration Statement on Form S-1 of Pacific Biosciences of California, Inc. and any or all amendments (including post-effective amendments) thereto and any new registration statement with respect to the offering contemplated thereby filed pursuant to Rule 462(b) of the Securities Act, and to file the same, with all exhibits thereto, and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorneys-in-fact and agents full power and authority to do and perform each and every act and thing requisite or necessary to be done in and about the premises hereby ratifying and confirming all that said attorneys-in-fact and agents, or his or their substitute or substitutes, may lawfully do or cause to be done by virtue hereof.

Signature	Title	Date
/S/ BRIAN B. DOW Brian B. Dow	Principal Accounting Officer	September 17, 2010
/S/ DAVID BALTIMORE David Baltimore	Director	September 17, 2010

Table of Contents

Exhibit Index

Exhibit number	Exhibit title
1.1*	Form of Underwriting Agreement
3.1#	Amended and Restated Certificate of Incorporation of the Registrant, as currently in effect
3.2*	Form of Amended and Restated Certificate of Incorporation of the Registrant, to be effective upon closing of the offering
3.3#	Amended and Restated Bylaws of the Registrant, as currently in effect
3.4*	Form of Amended and Restated Bylaws of the Registrant, to be effective upon closing of the offering
4.1*	Specimen Common Stock Certificate of the Registrant
4.2#	Fifth Amended and Restated Investor Rights Agreement, dated June 16, 2010
5.1*	Opinion of Wilson Sonsini Goodrich & Rosati, Professional Corporation
10.1#	Form of Director and Executive Officer Indemnification Agreement
10.2#	2004 Equity Incentive Plan and forms of option agreements thereunder
10.3#	2005 Stock Plan and forms of option agreements thereunder
10.4#	2010 Equity Incentive Plan and forms of option agreements thereunder to be in effect upon the closing of this offering
10.5#	2010 Employee Stock Purchase Plan and forms of agreement thereunder to be in effect upon the closing of this offering
10.6#	2010 Outside Director Equity Incentive Plan and forms of agreement thereunder to be in effect upon the closing of this offering
10.7†	Collaboration Agreement by and between the Registrant and Gen-Probe Incorporated, dated as of June 15, 2010
10.8†	Exclusive License Agreement by and between the Registrant and Cornell Research Foundation, Inc., dated as of February 1, 2004
10.9†	License Agreement by and between the Registrant and GE Healthcare Bio-Sciences Corp., dated as of September 11, 2006
10.10†	Exclusive License Agreement by and between the Registrant and Indiana University Research and Technology Corporation, dated May 15, 2005
10.11#	Amended and Restated Lease Agreement by and between the Registrant and Menlo Business Park, LLC, dated as of December 17, 2007
10.12#	Lease Agreement by and between the Registrant and Menlo Business Park LLC, dated August 14, 2009
10.13#	Industrial Lease Agreement by and between the Registrant and AMB Property, L.P., dated December 10, 2009
10.14#	Industrial Lease Agreement by and between the Registrant and AMB Property, L.P., dated September 24, 2009
10.15#	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

Table of Contents

Exhibit number	Exhibit title
10.16#	Industrial Lease Agreement by and between the Registrant and AMB Property, L.P., dated February 8, 2010
10.17	Employment Agreement by and between the registrant and Hugh Martin effective September 16, 2010
10.18	Change in Control Severance Agreement by and between the registrant and Hugh Martin effective September 16, 2010
10.19	Letter Relating to Employment Terms by and between the registrant and Susan K. Barnes effective September 15, 2010
10.20	Change in Control Severance Agreement by and between the registrant and Susan K. Barnes effective September 9, 2010
10.21	Letter Relating to Employment Terms by and between the registrant and Stephen Turner effective September 15, 2010
10.22	Change in Control Severance Agreement by and between the registrant and Stephen Turner effective September 9, 2010
10.23	Letter Relating to Employment Terms by and between the registrant and James Michael Phillips effective September 15, 2010
10.24	Change in Control Severance Agreement by and between the registrant and James Michael Phillips effective September 9, 2010
21.1#	List of subsidiaries of the Registrant
23.1	Consent of PricewaterhouseCoopers LLP, Independent Registered Public Accounting Firm
23.2*	Consent of Wilson Sonsini Goodrich & Rosati, Professional Corporation (included in Exhibit 5.1)
24.1	Power of Attorney (see page II-7 to this registration statement on Form S-1)

* To be filed by amendment.

\# Previously filed.

† 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.

Exhibit 10.7

Confidential Treatment Requested by
Pacific Biosciences of California, Inc.

COLLABORATION AGREEMENT
between
PACIFIC BIOSCIENCES OF CALIFORNIA, INC.
and
GEN-PROBE INCORPORATED
Dated as of June 15, 2010

COLLABORATION AGREEMENT

THIS COLLABORATION AGREEMENT (the "Agreement") is entered into between Pacific Biosciences of California, Inc., a Delaware corporation ("PacBio"), having a place of business at 1505 Adams Drive, Menlo Park, California 94025 and Gen-Probe Incorporated, a Delaware corporation ("Gen-Probe"), having a place of business at 10210 Genetic Center Drive, San Diego, California 92121. PacBio and Gen-Probe may each sometimes be referred to herein as a "party" and collectively as the "parties."

RECITALS

WHEREAS, the parties each recognize the potential mutual benefit in cooperating in the potential development of instrumentation and related products for the Diagnostics (as defined herein) market (the "Collaboration").

WHEREAS, PacBio owns or has proprietary rights and expertise in Sample Preparation Systems (as defined herein) and Third Generation Sequencing Systems (as defined herein) and associated technologies.

WHEREAS, Gen-Probe owns or has proprietary rights and expertise in the areas of Diagnostics workflow, systems integration, and Sample Preparation Systems, and expertise in the areas of clinical product development and regulatory clearances.

WHEREAS, the parties desire to collaborate toward the joint development of Products (each as defined herein) on the terms and subject to the conditions of this Agreement.

WHEREAS, the parties intend to enter subsequently into one or more Preferred Partnership Agreements (as defined herein), if warranted, to collaborate toward the further development, regulatory clearance and commercialization of Products in the Field, including Products developed under the terms of this Agreement.

WHEREAS, in connection herewith, the parties are also entering into a stock purchase agreement (the "Stock Purchase Agreement"), pursuant to which Gen-Probe shall purchase shares of PacBio's Series F preferred stock for an aggregate purchase price equal to $50 million.

NOW, THEREFORE, in consideration of the foregoing premises and the mutual covenants set forth below, the parties hereby agree as follows:

ARTICLE 1
DEFINITIONS

For purposes of this Agreement, the terms defined in this Article 1 shall have the respective meanings set forth below:

1.1 "Action" shall have the meaning set forth in Section 7.10.

1.2 “Affiliate” shall mean, with respect to any Person, any other Person which directly or indirectly controls, is controlled by, or is under common control with, such Person. A Person shall be regarded as in control of another Person if it owns, or directly or indirectly controls, more than fifty percent (50%) of the voting stock or other ownership interest of the other Person (or such lesser percentage as is the maximum percentage permitted under applicable law for foreign ownership where control is exercised by contract or otherwise), or if it directly or indirectly possesses the power to direct or cause the direction of the management and policies of the other Person by any means whatsoever (provided, however, that in the case of an entity organized under Section 501(c)(3) of the Internal Revenue Code, the direct or indirect power of a party to direct or cause the direction of the management and policies of the entity shall not in and of itself cause the entity to be deemed an Affiliate for purposes of this Agreement).

1.3 “Agreement” shall have the meaning set forth in the Preamble hereto. 1.4 “Change of Control” shall mean, with respect to a party, any of the following: (a) the sale or disposition of all or substantially all of the assets of such party or its direct or indirect parent corporation to a Third Party, (b) the acquisition by a Third Party which constitutes one person, as such term is used in Section 13(d) and 14(d) of the Securities Exchange Act of 1934, as amended (the “Exchange Act”), together with any such person’s “affiliates” or “associates,” as such terms are defined in the Exchange Act, other than an employee benefit plan (or related trust) sponsored or maintained by such party or any of its Affiliates, of more than 50% of the outstanding shares of voting capital stock of such party or its direct or indirect parent corporation, or (c) the merger or consolidation of such party or its direct or indirect parent corporation with or into another corporation, other than, in the case of this clause (c), an acquisition or a merger or consolidation of such party or its direct or indirect parent corporation in which holders of shares of the voting capital stock of such party or its direct or indirect parent corporation, as the case may be, immediately prior to the acquisition, merger or consolidation will have at least fifty percent (50%) of the ownership of voting capital stock of the acquiring Third Party or the surviving corporation in such merger or consolidation, as the case may be, immediately after the merger or consolidation.

1.5 “Collaboration” shall have the meaning set forth in the recitals.

1.6 “Commercially Available” shall mean, with respect to a product and a party, that such product is made available by such party or its Affiliate to a Third Party through (i) commercial sale or transfer of such product (including pursuant to an OEM supply arrangement) or (ii) commercial sale of a service utilizing such product.

1.7 “Commercially Reasonable Efforts” shall mean the application of efforts and available resources, not materially inconsistent with the exercise of prudent scientific and business judgment. “Commercially Reasonable Efforts” shall be deemed to have occurred if a reasonably prudent business person would have exerted similar efforts after taking into account, among other factors, in no particular order, and with no particular relative weighting: the industry; the relative market timing, potential, and size, and the stage in the development or life of, the relevant product(s) and/or services, and the dependencies and other interrelationships there between; the size and stage in the development or life of the entity; the current and projected future availability of sufficient capital and other resources, and the terms on which such resources are or will be available; and/or any other factor(s) actually considered and/or that a reasonably prudent business person would consider under similar

circumstances. Subject to and without limiting the foregoing, "Commercially Reasonable Efforts" shall require the applicable party to: (i) promptly assign responsibilities for activities for which it is responsible to specific employee(s) who are held accountable for the progress, monitoring and completion of such activities, (ii) set and consistently seek to achieve meaningful objectives for carrying out such activities, and (iii) make and implement decisions and allocate available resources necessary or appropriate to advance progress with respect to and complete such activities.

1.8 "Confidential Information" shall mean, with respect to a party, all information, whether in written, oral or visual presentation form, of any kind whatsoever (including compilations, data, formulae, models, patent disclosures, procedures, processes, projections, protocols, results of experimentation and testing, specifications, strategies, and techniques), and all tangible and intangible embodiments thereof of any kind whatsoever (including apparatus, compositions, documents, drawings, machinery, patent applications, records, reports), which is (i) not generally known, (ii) disclosed by such party to the other party pursuant to and in accordance with the terms of Article 6 of this Agreement and (iii) is identified as confidential, or is otherwise treated by the Disclosing Party as confidential or which the other party has a reasonable basis to believe is confidential at the time of disclosure.

Notwithstanding the foregoing, Confidential Information of a party shall not include information which the other party can establish by written documentation (a) to have been publicly known prior to disclosure of such information by the Disclosing Party to the other party, (b) to have become publicly known, without fault on the part of the other party, subsequent to disclosure of such information by the Disclosing Party to the other party, (c) to have been received by the other party at any time from a source, other than the disclosing party, rightfully having possession of and the right to disclose such information, (d) to have been otherwise known by the other party prior to disclosure of such information by the Disclosing Party to the other party or (e) to have been independently developed by employees or agents of the other party without access to or use of such information disclosed by the Disclosing Party to the other party.

1.9 "Confidentiality Agreement" shall mean the Confidentiality Agreement, dated as of February 12, 2010, between Gen-Probe and PacBio.

1.10 "Development Plans" shall have the meaning set forth in Section 2.1.2.

1.11 "Diagnostics" shall mean the in vitro testing of human specimens (including processed human specimens) for the purpose of medical care of the human from whom the specimen was taken and/or medical care of a human who is the potential recipient of tissue from the human from whom the specimen was taken. For the avoidance of doubt, "medical care" shall include, by way of example and not of limitation, diagnosis, prognosis, treatment, prevention, or monitoring the progress of any and all possible human disease (including infectious, genetic, traumatic, metabolic, degenerative, and neoplastic disease) as well as compatibility of donor and recipient with respect to tissue. At Gen-Probe's sole option, exercisable upon written notice to PacBio, "Diagnostics" shall also mean the in vitro testing of human specimens for the purpose of medical care of a human who is the potential recipient of human blood, plasma or other blood products from the human from whom the specimen was taken. For the avoidance of doubt, such medical care shall include, by way of example and not of limitation, diagnosis of possible disease prior to transplant or transfusion, as well as compatibility of donor and recipient with respect to human blood, plasma, and other blood products.

1.12 “Disclosing Party” shall have the meaning set forth in Section 6.1

1.13 “DNA” shall mean any and all forms of deoxyribonucleic acid, including without limitation methylated and other modified deoxyribonucleic acid sequences and complementary deoxyribonucleic acid synthesized from ribonucleic acid.

1.14 “Effective Date” shall mean June 15, 2010.

1.15 “Essential Ancillaries” shall mean the reagents and other consumables (including chips) that are necessary for the effective use of V2 […***…] or Sample Preparation […***…], in each case to the extent Commercially Available, respectively, from PacBio or Gen-Probe.

1.16 “Field” shall mean the field of nucleic acid sequencing products and services expressly marketed for Diagnostics use, including the parties’ own internal research and development of Products that are intended to be expressly marketed for Diagnostics use. For the avoidance of doubt, solely for purposes of determining whether Gen-Probe and its Affiliates have complied with the exclusivity obligations set forth in Section 4.1, “nucleic acid sequencing” shall not include methods utilizing multiplexed beads (e.g., […***…]) or capillary electrophoresis, as such methods are incorporated in a product offered by Gen-Probe or its Affiliates as of the Effective Date.

1.17 “Front End Sample Preparation” shall mean the isolation, extraction and/or purification of nucleic acid from tissue and bodily fluids obtained directly or indirectly from a human for sequencing, but excluding steps that are integral and specific to the sequencing process itself.

1.18 “Gen-Probe” shall have the meaning set forth in the Preamble hereto.

1.19 “Gen-Probe Copyrights” shall mean all rights under the copyright laws of any jurisdiction in the world and similar laws granting rights for written expression, together with all rights commonly referred to as “moral rights,” to the extent that Gen-Probe has the right to grant licenses, immunities or other rights thereunder as of the Effective Date or thereafter.

1.20 “Gen-Probe Derivative IP” shall have the meaning set forth in Section 7.5.1.

1.21 “Gen-Probe Intellectual Property Rights” shall mean, collectively, the Gen-Probe Copyrights, Gen-Probe Know-How and Gen-Probe Patent Rights.

1.22 “Gen-Probe Inventions” shall have the meaning set forth in Section 7.1.

1.23 “Gen-Probe Know-How” shall mean information, expertise or data developed by or for Gen-Probe (including formulae, procedures, protocols, techniques, data and results of experimentation and testing) to the extent that Gen-Probe has the right, under the laws of any jurisdiction in the world, to grant licenses, immunities or other rights thereunder as of the Effective Date or thereafter.

1.24 “Gen-Probe Patent Rights” shall mean patents and patent applications in any jurisdiction of the world as to which Gen-Probe has an ownership or other licensable interest (other than a license from PacBio pursuant to this Agreement) as of the Effective Date or thereafter, including with respect to any Gen-Probe Invention.

1.25 “Initial Development Plan” shall have the meaning set forth in Section 2.1.1.

1.26 “JAMS” shall have the meaning set forth in Section 9.3.

1.27 “Joint Copyrights” shall have the meaning set forth in Section 7.3.1.

1.28 “Joint Intellectual Property” shall have the meaning set forth in Section 7.6.

1.29 “Joint Inventions” shall have the meaning set forth in Section 7.1.

1.30 “Joint Know-How” shall have the meaning set forth in Section 7.4.

1.31 “Licensed GP IP” shall have the meaning set forth in Section 2.4.1.

1.32 “Licensed PacBio IP” shall have the meaning set forth in Section 2.4.2.

1.33 “PacBio” shall have the meaning set forth in the preamble hereto.

1.34 “PacBio Copyrights” shall mean all rights under the copyright laws of any jurisdiction in the world and similar laws granting rights for written expression, together with all rights commonly referred to as “moral rights,” to the extent that PacBio has the right to grant licenses, immunities or other rights thereunder as of the Effective Date or thereafter.

1.35 “PacBio Derivative IP” shall have the meaning set forth in Section 7.5.1.

1.36 “PacBio Intellectual Property Rights” shall mean, collectively, the PacBio Copyrights, PacBio Know-How and PacBio Patent Rights.

1.37 “PacBio Inventions” shall have the meaning set forth in Section 7.1.

1.38 “PacBio Know-How” shall mean information, expertise or data developed by or for PacBio (including formulae, procedures, protocols, techniques, data and results of experimentation and testing) which relates to the Products to the extent that PacBio has the right, under the laws of any jurisdiction in the world, to grant licenses, immunities or other rights thereunder as of the Effective Date or thereafter.

1.39 “PacBio Patent Rights” shall mean patents and patent applications in any jurisdiction of the world claiming technology as to which PacBio has an ownership or other licensable interest (other than a license from Gen-Probe pursuant to this Agreement) as of the Effective Date or thereafter, including with respect to any PacBio Invention.

1.40 “Person” shall mean an individual, corporation, partnership, limited liability company, trust, business trust, association, joint stock company, joint venture, pool, syndicate, sole proprietorship, unincorporated organization, governmental authority or any other form of entity not specifically listed herein, and including Gen-Probe and PacBio.

1.41 “Preferred Access Products” shall mean the products supplied by the parties pursuant to Section 2.2.

1.42 “Preferred Partnership Agreements” shall have the meaning set forth in Section 2.5.

1.43 “Product Development Plans” shall have the meaning set forth in Section 2.1.2.

1.44 “Products” shall mean one or more integrated system products integrating nucleic acid sequencing and Front End Sample Preparation, in each case for use in the Field.

1.45 “Proof of Concept” shall mean, with respect to any product, the demonstration of the reasonable technical and commercial efficacy and feasibility of such product for its intended application.

1.46 “Receiving Party” shall have the meaning set forth in Section 6.1.

1.47 “Sample Preparation” shall mean the isolation, extraction and/or purification of nucleic acid from tissue and bodily fluids obtained directly or indirectly from a human for sequencing.

1.48 “Sample Preparation […***…]” shall mean, individually and collectively, the major […***…] of Sample Preparation System instruments.

1.49 “Sample Preparation Systems” shall mean the reagents, methods, instruments and associated consumables that are used for Sample Preparation, including those that are used for Front End Sample Preparation.

1.50 “Steering Committee” shall mean the committee comprising representatives of Gen-Probe and PacBio as described in Section 3.1 below.

1.51 “Stock Purchase Agreement” shall have the meaning set forth in the recitals.

1.52 “Term” shall mean the period set forth in Section 8.1.

1.53 “Third Generation Sequencing Systems” shall mean the reagents, methods, instruments and associated consumables (including chips) that are used for single molecule sequencing of nucleic acid, as developed by or on behalf of PacBio including without limitation Single Molecule Real Time (SMRT(TM)) sequencing, the current PacBio RS system and the contemplated PacBio […***…] “V2” SMRT DNA sequencing platforms. Gen-Probe acknowledges that, as of the Effective Date, PacBio’s Third Generation Sequencing Systems are […***…].

1.54 “Third Party” shall mean any Person other than Gen-Probe and PacBio and their respective Affiliates.

1.55 “V2 […***…]” shall mean the primary […***…] contained, or intended to be contained, in the V2 System.

1.56 “V2 Proof of Concept” shall have the meaning set forth on Exhibit C

1.57 “V2 […***…]” shall mean, individually and collectively, the V2 […***…] and other major sequencing […***…] contained, or intended to be contained, in the V2 System.

1.58 “V2 System” shall mean the reagents, methods and instruments that are used for single molecule sequencing of nucleic acids, as developed by or on behalf of PacBio, in the contemplated “V2” SMRT DNA sequencing platform.

ARTICLE 2
PRODUCT DEVELOPMENT

2.1 Development Plans.

2.1.1 The initial program for the development of the Products is set forth in Exhibit A (the “Initial Development Plan”).

2.1.2 It is anticipated that progress made under the Initial Development Plan may necessitate changes to the Initial Development Plan or, for any Products identified as warranting further development activities, the adoption of additional development plans (the “Product Development Plans,” and, together with the Initial Development Plan, the “Development Plans”). Product Development Plans may be adopted and the Development Plans may be amended from time to time by the Steering Committee in accordance with the provisions of Article 3. Such actions must be in writing to be effective hereunder. The Development Plans may include, without limitation: work schedules of activities that specify the development phases; time schedules for completion of such phases; deliverables; key assumptions; itemized budgets by development phase, including agreed costs; test methods; the timing of reimbursement payments, if any, tied to the completion of milestones; scale-up activities; product specifications; the final activity that completes the Development Plans; and the respective responsibilities of the parties.

2.1.3 Each party shall designate a contact, which may be a member of the Steering Committee, at their respective offices to receive and transmit communications concerning the Development Plans.

2.1.4 Gen-Probe and PacBio shall conduct their respective development obligations under the Development Plans diligently and in accordance with the Development Plans and in compliance with applicable laws, regulations and standards for good development practices. Gen-Probe and PacBio each shall allocate sufficient personnel, equipment, facilities and other resources to the Development Plans to carry out their respective obligations and use Commercially Reasonable Efforts to accomplish the objectives thereof.

2.1.5 Unless the Steering Committee determines otherwise, each party shall bear its own expenses incurred in performing its obligations under this Agreement.

2.2 Preferred Access Products.

2.2.1 PacBio shall provide to Gen-Probe access to prototype versions of PacBio’s contemplated Third Generation Sequencing System product families, through one or more collaborative research projects to be performed using such prototype systems. Such collaborative research projects shall be of nature and scope, and on such terms and conditions, as are mutually agreed by the parties; provided that […***…].

2.2.2 If, during the Term, PacBio initiates a beta testing program for any Third Generation Sequencing System (whether stand-alone or incorporated into a Product), Gen-Probe shall be permitted to serve as a beta test site for such system, subject to the then-current terms and conditions for such beta test sites that have been established by PacBio for such Third Generation Sequencing System, consistently applied, and subject to Gen-Probe's continued fulfillment of its obligations as a beta test site in accordance with such terms and conditions.

2.2.3 During the Term and thereafter, Gen-Probe shall be entitled to purchase from PacBio, on terms (including warranty terms) that are commercially reasonable for both parties […***…], any Third Generation Sequencing System (whether stand-alone or incorporated into a Product) then Commercially Available from PacBio to its customers generally; provided that such entitlement shall survive a Change of Control of PacBio to the extent any such Third Generation Sequencing System was, immediately prior to such Change in Control: (i) Commercially Available from PacBio to its customers generally or (ii) (a) in active development by PacBio following a successful Proof of Concept and (b) then intended by PacBio to be Commercially Available to its customers generally in the future (provided, however, that PacBio shall not be obligated to provide Gen-Probe such access earlier than when such Third Generation Sequencing System is Commercially Available to PacBio's customers generally).

2.2.4 During the Term and thereafter, PacBio shall be entitled to purchase from Gen-Probe, on terms (including warranty terms) that are commercially reasonable for both parties […***…], any Sample Preparation System (whether stand-alone or incorporated into a Product) then Commercially Available from Gen-Probe to its customers generally; provided that such entitlement shall survive a Change of Control of Gen-Probe to the extent any such Sample Preparation System was, immediately prior to such Change in Control:

(i) Commercially Available from Gen-Probe to its customers generally or (ii) (a) in active development by Gen-Probe following a successful Proof of Concept and

(b) then intended by Gen-Probe to be Commercially Available to its customers generally in the future (provided, however, that Gen-Probe shall not be obligated to provide PacBio such access earlier than when such Sample Preparation System is Commercially Available to Gen-Probe's customers generally).

2.2.5 In addition to, and not in derogation of, Section 2.2.3, during the Term and thereafter, Gen-Probe shall be entitled to purchase from PacBio, on terms (including warranty terms) that are commercially reasonable for both parties […***…], any V2 […***…] (whether stand-alone or embodied in a system) and any Essential Ancillaries therefor, in each case, then Commercially Available from PacBio; provided that such entitlement to purchase shall survive a Change of Control of PacBio (i) with respect to the V2 […***…] (and any Essential Ancillaries therefor), following a successful V2 Proof of Concept and (ii) with respect to any other V2 […***…] (and any Essential Ancillaries therefor), to the extent any such V2 […***…] was, immediately prior to such Change in Control: (a) part of a V2 System

Commercially Available from PacBio or (b) part of a V2 System in active development by PacBio in its Collaboration with Gen-Probe hereunder following a successful Proof of Concept of such V2 […***…] or V2 System; provided, further that any purchase pursuant to this Section 2.2.5 shall be for the sole purpose of Gen-Probe incorporating such V2 […***…] into a Product (regardless of whether such Product was developed under the Collaboration) to be sold in the Field, and in no circumstances for the stand-alone resale of such V2 […***…]. Upon written request in accordance with Section 10.2 by PacBio to Gen-Probe after expiration or termination of this Agreement or any such Change in Control, Gen-Probe shall, within ninety (90) days of receipt of such request, provide to PacBio a good faith, commercially reasonable estimate of the likely quantities and delivery dates for any V2 […***…] (and any Essential Ancillaries therefor) which Gen-Probe contemplates purchasing pursuant to this Section 2.2.5 over the course of the following […***…] calendar quarters. Gen-Probe shall continue to provide a rolling […***…] calendar quarter estimate, on a quarterly basis, so long as Gen-Probe desires to purchase any V2 […***…] (and any Essential Ancillaries therefor) pursuant to this Section 2.2.5.

2.2.6 In addition to, and not in derogation of, Section 2.2.4, during the Term and thereafter, PacBio shall be entitled to purchase from Gen-Probe, on terms (including warranty terms) that are commercially reasonable for both parties […***…], any Sample Preparation […***…] (whether stand-alone or embodied in a system) that is intended to be a part of any Product contemplated by the Collaboration and any Essential Ancillaries therefor, in each case, then Commercially Available from Gen-Probe; provided that such entitlement to purchase shall survive a Change of Control of Gen-Probe with respect to any such Sample Preparation […***…] (and any Essential Ancillaries therefor), to the extent any such Sample Preparation […***…] was, immediately prior to such Change in Control, an intended part of a Product in active development by Gen-Probe following a successful Proof of Concept of such Sample Preparation […***…] or Product; provided, further that any purchase pursuant to this Section 2.2.6 shall be for the sole purpose of PacBio incorporating a Sample Preparation […***…] into a Product (regardless of whether such Product was developed under the Collaboration) to be sold in the Field, and in no circumstances for the stand-alone resale of such Sample Preparation […***…]. Upon written request in accordance with Section 10.2 by Gen-Probe to PacBio after expiration or termination of this Agreement or any such Change in Control, PacBio shall, within ninety (90) days of receipt of such request, provide to Gen-Probe a good faith, commercially reasonable estimate of the likely quantities and delivery dates for any Sample Preparation […***…] (and any Essential Ancillaries therefor) which PacBio contemplates purchasing pursuant to this Section 2.2.6 over the course of the following […***…] calendar quarters. PacBio shall continue to provide a rolling […***…] calendar quarter estimate, on a quarterly basis, so long as PacBio desires to purchase any Sample Preparation […***…] (and any Essential Ancillaries therefor) pursuant to this Section 2.2.6.

2.2.7 The rights and obligations of the parties under this Section 2.2 shall apply equally to the Affiliates of the parties and the provisions of this Section 2.2 shall be interpreted mutatis mutandis with respect to the Affiliates of the parties, it being understood that each party may elect to perform any or all of its obligations under this Section 2.2 exclusively through one or more of its Affiliates (e.g., sale of products outside the U.S. via a non-U.S. Affiliate). Each party shall cause its Affiliates, to the extent applicable, to comply with the provisions of this Section 2.2 as if they were party to this Agreement.

2.3 Access to Information.

2.3.1 Gen-Probe shall provide PacBio access to relevant Diagnostics market research data that Gen-Probe has generated, or will generate during the Term, including, without limitation, the […***…].

2.3.2 PacBio shall provide Gen-Probe access to relevant Diagnostics market research data that PacBio has generated, or will generate during the Term.

2.3.3 Diagnostics market research data provided by one party to another under this Section 2.3 shall be considered Confidential Information pursuant to Article 6 of this Agreement. Without limiting the foregoing, neither party shall reference or disclose Third Party study data (including, without limitation, the […***…]) without the prior written consent of such Third Party.

2.4 Limited License Grants for Development Plans.

2.4.1 License Grant by Gen-Probe. Gen-Probe hereby grants to PacBio a limited, royalty-free, non-exclusive license, for the duration of the Term, to all of the Gen-Probe Intellectual Property Rights reasonably required for PacBio to perform its obligations under the Development Plans (the "Licensed GP IP") and solely for such purposes. PacBio shall not have the right to grant sublicenses under such license, without the express prior written consent of Gen-Probe.

2.4.2 License Grant by PacBio. PacBio hereby grants to Gen-Probe a limited, royalty-free, non-exclusive license, for the duration of the Term, to all of the PacBio Intellectual Property Rights reasonably required for Gen-Probe to perform its obligations under the Development Plans (the "Licensed PacBio IP") and solely for such purposes. Gen-Probe shall not have the right to grant sublicenses under such license, without the express prior written consent of PacBio.

2.5 Subsequent Agreements. During the Term, the parties shall negotiate in good faith one or more definitive agreements that shall set forth the economic and other terms and obligations of the parties in furtherance of the continued development, commercialization and regulatory clearance of the Products (the "Preferred Partnership Agreements"). Such Preferred Partnership Agreements shall take into account the technological, commercial, regulatory and reimbursement findings developed by the parties pursuant to this Agreement. Except as otherwise provided in this Agreement, no party or its Affiliate shall take any steps, during the Term, to commercialize in the Field any Product developed under the Collaboration or pursue any regulatory clearances in the Field in respect of such Product prior to the execution of a Preferred Partnership Agreement in respect of such Product.

2.6 Acknowledgements. Notwithstanding the parties' intentions and obligations, Gen-Probe and PacBio each: (i) expressly disclaims any representation or warranty that any development activities taken pursuant to this Agreement will be successfully completed and (ii) expressly acknowledges the possibility that any or all development or commercialization activities may be unsuccessful despite the use of Commercially Reasonable Efforts. Both parties shall plan accordingly.

ARTICLE 3
GOVERNANCE

3.1 Steering Committee.

3.1.1 The development of Products under the Development Plans shall be coordinated and supervised by the Steering Committee, provided that a Development Plan, and any modification of a Development Plan, shall not be considered to have been approved unless the budget for a Development Plan or a modified Development Plan shall have been approved in writing by the Chief Financial Officer of each party. The Steering Committee's duties shall include (i) determining the priorities of the Collaboration with respect to research activities, which Products to develop and other development matters, (ii) maintaining the Development Plans, including schedules of work and deliverable commitments by each party, (iii) maintaining an accounting of the expenses borne by each party, (iv) facilitating open communication between the parties on matters relating to the development findings and commercialization of Products in the Field, and (v) engaging experts as necessary to identify the market, regulatory and reimbursement requirements for integrating Sample Preparation Systems with Third Generation Sequencing Systems. The Steering Committee shall have the power and authority to appoint joint project teams to oversee and administer activities under this Agreement and shall set the roles and responsibilities for any such project teams.

3.1.2 The Steering Committee shall be comprised of three (3) named representatives of Gen-Probe and three (3) named representatives of PacBio. PacBio and Gen-Probe shall each appoint its respective representatives to the Steering Committee and each party may, from time to time and in its sole discretion, substitute one or more of its representatives by giving notice to the other party of such change. The initial members of the Steering Committee are set forth on Exhibit B. Each party shall bear its own costs for its representatives' participation on the Steering Committee.

3.2 Meetings. The Steering Committee shall convene not less than once each calendar quarter during the Term. All meetings shall be set at times and places convenient to the members of the Steering Committee as determined by the chair of the Steering Committee. Each party shall bear its own travel costs in connection with travel to any meetings of the Steering Committee.

3.3 Committee Actions. A party's representatives on the Steering Committee shall collectively have one vote as to all matters. All Steering Committee actions may only be taken by unanimous vote of the parties. Any approval, determination or other action agreed to by both parties' representatives shall be the approval, determination or other action of the Steering Committee. Except as may be otherwise specifically set forth in this Agreement, any matters as to which the Steering Committee cannot reach a unanimous vote shall be presented to the respective executives of the parties for consideration, in accordance with Article 9.

3.4 Reports. Within thirty (30) days following each Steering Committee meeting, the chairperson shall prepare and provide to each party a reasonably detailed written summary report that shall describe any approval, determination or other action by the Steering Committee.

3.5 Committee Procedures. Meetings of the Steering Committee shall be coordinated and chaired by a representative of one of the parties. The position of chair shall rotate between the parties each nine (9) months. PacBio shall have the right to appoint a representative to serve as the chair of the Steering Committee for the first nine (9) months of the Term.

3.6 Steering Committee Action Prior to End of Development Plans.

3.6.1 In the event that either party reasonably concludes prior to the end of a Development Plan that (i) the development schedule or development budget for a Product will materially exceed the schedule or budget set forth in such Development Plan, (ii) development will not be able to be conducted or be successfully concluded materially consistently with such Development Plan, or (iii) based on anticipated market demand or for any other reason that the commercialization of such Product in the Field would not likely be successful, such party shall promptly notify the Steering Committee, which shall discuss all relevant circumstances and considerations and determine whether any changes are needed to such Development Plan and, if so, make a decision on whether the development work should continue with respect to such Product and whether to modify or terminate such Development Plan.

3.6.2 In the event a Development Plan is terminated under this Section 3.6, the termination notice shall be effective on the date it is received. Such termination shall not in any way relieve either party of obligations already incurred under the Development Plans prior to termination, including obligations, if any, to reimburse the other party for any expense determined to be reimbursable by the Steering Committee.

3.7 Reports and Records. Once each calendar quarter prior to the Steering Committee meeting, each party shall prepare a written summary report describing the work performed to date by such party under all active Development Plans and provide such report to the other party. If agreed by the parties, the foregoing reports may be oral reports given at the Steering Committee meeting. Each party shall maintain complete and accurate records that fully and properly reflect all work done and results achieved by it in the performance of the Development Plans (including all data in the form required under all applicable laws and regulations).

3.8 Inspection of Records. To the extent reasonably required for the performance of a Development Plan, Gen-Probe and PacBio each shall have the right, during normal business hours and upon reasonable notice, to inspect and copy records of the other party created in the course of performing such Development Plan, to the extent such records are directly related to, and within the scope of, the Collaboration. The parties shall develop reasonable procedures for requesting and delivering copies of such records to each other. Each party shall maintain such records and the information of the other party contained therein as Confidential Information hereunder.

3.9 Subcontracts. Upon approval of the Steering Committee, which shall not be unreasonably withheld by either party, each party may subcontract portions of any Development Plan hereunder in the normal course of its business; provided, however, that unless the other party gives its prior written consent, subcontracting with a Third Party shall not involve the transfer or license (including any sublicense) of the other party's intellectual property rights and/or Confidential Information. If the other party consents to a subcontractor's access to Confidential Information of the other party, the subcontractor shall be required to enter into an agreement including confidentiality terms that are at least as restrictive as the confidentiality terms of Article 6 herein along with provisions for the assignment of inventions or intellectual property rights arising from the subcontracted work. The subcontracting party shall supervise the work of any subcontractor to ensure, in part, that the subcontractor's work is in compliance in all material respects with all requirements of the Development Plans and all applicable laws and regulations. For purposes of this Section 3.9, subcontractors requiring approval of the Steering Committee shall not include subcontractors that provide services on-site of either party in the ordinary course of such party's business; provided, however, that such excluded subcontractors shall otherwise be subject to the requirements of this Section 3.9 to the extent they work on any portion of any Development Plan or have access to the Confidential Information of the other party.

3.10 Withdrawal. Notwithstanding anything to the contrary in this Agreement, either party may, upon thirty (30) days written notice to the other party, withdraw from participation in the Steering Committee, in which case, the Steering Committee shall be dissolved and the parties shall administer the Agreement without such committee, and shall make such amendments to the Agreement as may be necessary or advisable in connection therewith. All decisions in this Agreement that prior to such notice required the agreement of the Steering Committee, shall following such notice be subject to the mutual agreement of the parties.

ARTICLE 4
EXCLUSIVITY

4.1 Exclusivity. During the Term, neither party, and neither party's Affiliates, shall (i) jointly develop Products in the Field with any Third Party or (ii) directly or indirectly grant to a Third Party an express license or an express immunity from suit with respect to any technology used or useful in the Collaboration that would permit such Third Party to develop Products in the Field using such technology either on its own, jointly with such party or with any other Third Party; provided that a party shall not be precluded from joint development with or out-licensing to a Third Party in respect of a particular Product if: (a) the parties, jointly and in good faith, determine that one or both parties do not have sufficient capabilities required for the development of a particular Product in the Field, (b) either party requests that the Collaboration include the development of a particular Product in the Field and proposes fair terms with respect to allocation of development costs, and the other party expressly disclaims any interest in such development, or (c) such a license is granted in good faith in connection with the […***…]. Subject to the foregoing restrictions and the other party's intellectual property rights in a Product, each party shall be permitted to develop, promote, market and sell such Product.

ARTICLE 5
REPRESENTATIONS AND WARRANTIES

5.1 Representations and Warranties. Each of Gen-Probe and PacBio hereby represents and warrants as of the Effective Date (except as specifically otherwise indicated below) as follows:

5.1.1 Corporate Existence and Power. Such party (a) is a corporation duly organized, validly existing and in good standing under the laws of the state in which it is incorporated; (b) has the corporate power and authority and the legal right to own and operate its property and assets, to lease the property and assets it operates under lease, and to carry on its business as it is now being conducted; and (c) to its knowledge, is in compliance with all requirements of applicable law, except to the extent that any noncompliance would not have a material adverse effect on the properties, business, financial or other condition of such party and would not materially adversely affect such party's ability to perform its obligations under this Agreement.

5.1.2 Authorization and Enforcement of Obligations. Such party (a) has the corporate power and authority and the legal right to enter into this Agreement and to perform its obligations hereunder and (b) has taken all necessary corporate action on its part to authorize the execution and delivery of this Agreement and the performance of its obligations hereunder. This Agreement has been duly executed and delivered on behalf of such party, and constitutes a legal, valid and binding obligation, enforceable against such party in accordance with its terms.

5.1.3 Consents. All necessary consents, approvals and authorizations of all governmental authorities and other Persons required to be obtained by such party in connection with the execution of this Agreement have been obtained on or before the Effective Date.

5.1.4 No Conflict. To its knowledge, the execution and delivery of this Agreement and the performance of such party's obligations hereunder (a) do not conflict with or violate any requirement of applicable laws or regulations, and (b) do not conflict with, or constitute a default under, any material contractual obligation of such party.

5.1.5 No Notice of Infringement. As of the Effective Date, except as otherwise disclosed in writing to the other party, neither Gen-Probe nor PacBio has received any written notice from a Third Party alleging that any technology of such party expected to be utilized in any Product (each as and to the extent defined as of the Effective Date) to be developed pursuant to this Agreement would infringe the issued patents of such Third Party.

5.2 DISCLAIMER OF WARRANTIES. NOTHING IN THIS AGREEMENT SHALL BE CONSTRUED AS A REPRESENTATION MADE, OR WARRANTY GIVEN, BY GEN-PROBE OR PACBIO THAT ANY PATENT WILL ISSUE BASED UPON ANY PENDING PATENT APPLICATION WITHIN THE GEN-PROBE PATENT RIGHTS OR THE PACBIO PATENT RIGHTS, THAT ANY PATENT WITHIN THE GEN-PROBE PATENT RIGHTS OR THE PACBIO PATENT RIGHTS WHICH ISSUES WILL BE VALID, OR THAT THE USE OF ANY LICENSE GRANTED HEREUNDER, OR THAT THE USE OF ANY GEN-PROBE PATENT RIGHTS OR PACBIO PATENT RIGHTS WILL NOT INFRINGE THE PATENT OR OTHER INTELLECTUAL PROPERTY RIGHTS OF ANY OTHER PERSON. FURTHERMORE, EACH OF GEN-PROBE

AND PACBIO DOES NOT MAKE, AND EXPRESSLY DISCLAIMS, ANY REPRESENTATIONS OR WARRANTIES, EXPRESS OR IMPLIED, WITH RESPECT TO THE GEN-PROBE INTELLECTUAL PROPERTY RIGHTS AND THE PACBIO INTELLECTUAL PROPERTY RIGHTS, RESPECTIVELY, OR TO THE PRODUCTS, INCLUDING WITHOUT LIMITATION, ANY WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR NON-INFRINGEMENT.

ARTICLE 6
CONFIDENTIALITY

6.1 Confidential Information. For the period commencing on the Effective Date and ending seven (7) years following the expiration or earlier termination hereof, a party and its Affiliates and their respective directors, officers, employees and consultants (the "Receiving Parties") shall maintain in confidence the Confidential Information of the other party and its Affiliates, and shall not disclose to Third Parties the Confidential Information of the other party or its Affiliates (the "Disclosing Parties") except to Affiliates of the Receiving Parties and their respective directors, officers, employees and consultants involved in the performance of obligations under this Agreement. To the extent that disclosure to any Third Party is authorized by this Agreement, prior to disclosure, the Receiving Party shall obtain written agreement of such Third Party to hold in confidence and not disclose, use or grant the use of the Confidential Information of the other party except as expressly permitted under this Agreement. The parties agree that the term of the non-disclosure and non-use obligations of a Third Party shall be co-extensive with the confidentiality obligations of the parties hereunder. A Receiving Party shall notify the applicable Disclosing Party promptly upon discovery of any unauthorized use or disclosure of the Disclosing Party's Confidential Information. Upon the expiration or earlier termination of this Agreement, each Receiving Party shall return to the applicable Disclosing Party all tangible items regarding the Confidential Information of the Disclosing Party and all copies thereof; provided, however, that a Receiving Party shall have the right to retain one (1) copy for its legal files for the sole purpose of determining its obligations hereunder. Each party shall cause its Affiliates, to the extent applicable, to comply with the provisions of this Section 6.1 as if they were party to this Agreement.

6.2 Terms of this Agreement. For the period commencing on the Effective Date and ending on the expiration or earlier termination hereof, without the prior express written consent of the other party, which shall not be unreasonably withheld or delayed, neither party nor its Affiliates shall (a) disclose any financial terms or conditions of this Agreement to any Third Party, except as reasonably required in connection with such party's activities hereunder and under appropriate confidentiality restrictions; or (b) originate any initial disclosure to any Third Party of the existence or terms of this Agreement; or (c) originate any initial publicity, news release or any other public announcement (written or oral) relating to this Agreement or the existence of an arrangement among the parties. Notwithstanding the foregoing, the parties shall be allowed to issue mutually agreed upon individual or joint press releases disclosing the general nature of the Collaboration. Either party shall thereafter be free to disclose any information contained in the public disclosure approved pursuant to this Section 6.2 or which is made without confidentiality restrictions pursuant to Section 6.3.

6.3 Permitted Disclosures. The confidentiality obligations under this Article 6 shall not apply to the extent that a party is required to disclose information by applicable law, regulation or order of a governmental agency or a court of competent jurisdiction; provided that such party shall provide written notice thereof to the other party and sufficient opportunity to contest any such disclosure or to request confidential treatment thereof.

ARTICLE 7
DEVELOPED INTELLECTUAL PROPERTY; INTELLECTUAL PROPERTY RIGHTS; ENFORCEMENT

7.1 Ownership of Inventions. Except as set forth in this Article 7, the entire worldwide right, title and interest in all patentable discoveries, inventions and technology, made or developed in the course of the Collaboration, and in any patents or patent applications therein, (a) solely by employees of Gen-Probe or others acting on behalf of Gen-Probe (the "Gen-Probe Inventions") shall, as between Gen-Probe and PacBio, be owned solely by Gen-Probe, (b) solely by employees of PacBio or others acting on behalf of PacBio (the "PacBio Inventions") shall, as between PacBio and Gen-Probe, be owned solely by PacBio, and (c) jointly by employees of Gen-Probe or others acting on behalf of Gen-Probe and employees of PacBio or others acting on behalf of PacBio (the "Joint Inventions") shall, as between Gen-Probe and PacBio, be owned jointly by Gen-Probe and PacBio. Any dispute as to which party owns any such patentable discoveries, inventions, technology, patents or patent applications shall be resolved pursuant to Article 9. Each party hereby assigns any such right, title and interest that it may have to the other party to effect the foregoing allocation of ownership rights and, for such purpose, it shall execute such documents, including assignment agreements and take such steps as reasonably requested by the other party.

7.2 Patent Applications and Payment of Related Expenses.

7.2.1 PacBio shall be responsible for and shall control, at its sole discretion and expense, the preparation, filing, prosecution, maintenance and enforcement of all PacBio Patent Rights that are the subject of this Agreement. Gen-Probe shall be responsible for and shall control, at its sole expense, the preparation, filing, prosecution, maintenance and enforcement of all Gen-Probe Patent Rights that are the subject of this Agreement.

7.2.2 The Steering Committee shall establish a strategy for, including the appointment of a party to lead, the preparation, filing, prosecution and maintenance of patent applications and patents for Joint Inventions. Unless otherwise agreed, the parties shall share equally in the costs, fees and expenses associated with the preparation, filing and prosecution of any patent application claiming a Joint Invention and for the maintenance of such Joint Inventions. In the event Gen-Probe or PacBio fails or elects not to pay its share of any of the foregoing costs, fees or expenses, it shall assign its entire interest in such Joint Inventions to the other party. Unless otherwise agreed, patent applications claiming Joint Inventions shall be prepared and prosecuted promptly by mutually acceptable outside counsel. In the preparation and prosecution of patent applications claiming Joint Inventions, each party shall be solely responsible for communicating its interests to the outside counsel, and no employee of any party shall in any way act as the attorney, agent, or representative of any other party, or otherwise in any way be responsible for representing or protecting the interests of any other party. All decisions of the outside counsel shall be final and binding. To the extent not inconsistent with this Agreement,

neither party may assert any claims against the other party for any act or omission in the preparation, filing, prosecution, issuance, maintenance, licensing, enforcement or defense of patent applications or patents issuing therefrom claiming Joint Inventions.

7.2.3 The parties shall cooperate with one another to the extent necessary in connection with the filing of patent applications for their respective inventions and for Joint Inventions. Within a reasonable period of time after a party files any patent application during or after the Term claiming a Joint Invention conceived during and as a result of the performance of this Agreement, the party filing such an application shall provide the other party with a copy of the application and shall identify with reasonable specificity any Confidential Information of such other party that may be included therein. The party receiving the copy of the application shall then have one (1) month to review the application and notify the filing party as to whether any of the receiving party's Confidential Information is disclosed. If the patent application contains any such Confidential Information or if the filing party shall be required to disclose any Confidential Information pursuant to filing such application, then the filing party shall withdraw such application (without retaining a residual right to claim priority) before any publication, unless the filing party is given the permission of the other party, which permission shall only be withheld if disclosure of such Confidential Information has a adverse impact upon the interests of the party having the right to prevent the disclosure of such Confidential Information.

7.3 Copyrights.

7.3.1 Ownership. Except as set forth in this Article 7, the entire worldwide right, title and interest in all copyrightable works created in the course of the Collaboration (a) solely by employees of Gen-Probe or others acting on behalf of Gen-Probe shall be owned solely by Gen-Probe, (b) solely by employees of PacBio or others acting on behalf of PacBio shall be owned solely by PacBio, and (c) jointly by employees of Gen-Probe or others acting on behalf of Gen-Probe and employees of PacBio or others acting on behalf of PacBio (the "Joint Copyrights") shall be owned jointly by Gen-Probe and PacBio.

7.3.2 Copyright Protection. In order to protect against infringement of a party's copyrights or of Joint Copyrights, the parties shall cooperate to apply an appropriate copyright mark to all materials identified by each of the parties as copyrightable materials that are created in the course of the Collaboration. Each party shall cooperate with the other party, take such actions and execute such documents, as reasonably requested by the other party and at the other party's expense, to assist the other party in the protection of the other party's copyrights. Each party hereby covenants to take no action or make no omission which would constitute an infringement of the other party's claim of copyright protection with respect to such items. Any dispute as to which party owns a copyright shall be resolved pursuant to Article 9. Each party hereby assigns any such right, title and interest that it may have to the other party to effect the foregoing allocation of ownership rights and, for such purpose, it shall execute such documents, including assignment agreements and take such steps as reasonably requested by the other party.

7.4 Know-How. Except as set forth in this Article 7, the entire worldwide right, title and interest in any know-how, trade secrets, information, expertise or data (including formulae, procedures, protocols, techniques, data and results of experimentation and testing) not otherwise addressed in Sections 7.1 or 7.3.1 and developed or created in the course of the Collaboration (a) solely by

employees of Gen-Probe or others acting on behalf of Gen-Probe shall be owned solely by Gen-Probe, (b) solely by employees of PacBio or others acting on behalf of PacBio shall be owned solely by PacBio, and (c) jointly by employees of Gen-Probe or others acting on behalf of Gen-Probe and employees of PacBio or others acting on behalf of PacBio (the "Joint Know-How") shall be owned jointly by Gen-Probe and PacBio. Any dispute as to which party owns any such know-how, trade secrets, information, expertise or data (including formulae, procedures, protocols, techniques, data and results of experimentation and testing) shall be resolved pursuant to Article 9. Each party hereby assigns any such right, title and interest that it may have to the other party to effect the foregoing allocation of ownership rights and, for such purpose, it shall execute such documents, including assignment rights and take such steps as reasonably requested by the other party.

7.5 Derivative Intellectual Property.

7.5.1 Notwithstanding Sections 7.1, 7.3, 7.4 and 7.6, the entire worldwide right, title and interest in any discoveries, inventions, technology, know-how, trade secrets, information, expertise or data (including formulae, procedures, protocols, techniques, data, results of experimentation and testing), and copyrightable works developed or created in the course of the Collaboration that are based on, or constitute improvements, enhancements or modifications of, (a) the Licensed GP IP (the "Gen-Probe Derivative IP") shall be owned solely by Gen-Probe, and (b) the Licensed PacBio IP (the "PacBio Derivative IP") shall be owned solely by PacBio; provided that any discoveries, inventions, technology, know-how, trade secrets, information, expertise or data (including formulae, procedures, protocols, techniques, data, results of experimentation and testing), and copyrightable works developed or created in the course of the Collaboration that use, are based on or incorporate any of, or constitute improvements, enhancements or modifications of both the Licensed GP IP and the Licensed PacBio IP shall be deemed Joint Intellectual Property, and as applicable, Joint Inventions, Joint Copyrights, or Joint Know-How.

7.5.2 Each party shall assign any right, title and interest that it may have to the other party to effect the allocation of ownership rights set forth in Section 7.5.1 and shall cooperate with the other party, execute such documents, including assignment agreements, and take such steps, as reasonably requested by the other party and at the other party's expense, to assist the other party in the protection of the other party's rights pursuant to Section 7.5.1.

7.6 Rights over Joint Intellectual Property. Each party shall own an equal undivided interest in all Joint Inventions, Joint Copyrights and Joint Know-How (including Diagnostic market requirements developed during the course of performing the Collaboration, to the extent not otherwise included in the foregoing) (collectively, the "Joint Intellectual Property") and shall have the right, subject to the provisions of this Agreement, to use, pledge, license, assign or otherwise transfer, its rights in any such Joint Intellectual Property hereunder without the permission, consent of, or compensation or accounting to, the other party, except to the extent that such use or application of Joint Intellectual Property would require a license from the other party (e.g., under a claim other than that which claims the Joint Intellectual Property).

7.7 No Other Technology Rights. Except as otherwise expressly provided in this Agreement, under no circumstances shall a party, as a result of this Agreement, obtain any ownership interest or other right in any discovery, invention or other technology, data or information (or any patent, copyright, trademark, or other intellectual property rights therein) of the other party, including

items transferred by the other party to such party at any time pursuant to this Agreement. There are no implied licenses or rights granted by this Agreement and no implied licenses or rights, and no licenses or rights by estoppel, shall be created by the parties' course of performance hereunder. Except as expressly provided in this Agreement, neither party shall be under any obligation to grant to the other party any rights in any patent, copyright, trademark, or other intellectual property.

7.8 Third Party Technology. The Steering Committee shall discuss Third Party intellectual property rights that may be necessary for the Products. Any such discussions shall, to the extent advisable, take place with legal counsel present in order to preserve legal privileges available to the parties. The Steering Committee shall consider the costs of acquiring rights in such Third Party intellectual property rights in connection with such Products, allocate the costs as appropriate, and agree upon methods for implementing such cost allocations. The Steering Committee shall also consider which party shall take the lead in initiating contact with and negotiating with the Third Party. The parties recognize that if the Steering Committee cannot agree on such cost allocation, neither party shall be under any obligation to separately acquire such rights for use pursuant to this Agreement.

7.9 Enforcement. In the event that either party learns of any Third Party infringement of the Joint Intellectual Property, such party shall promptly provide written notice to the other party, including any evidence of infringement in the possession of the disclosing party.

7.9.1 Except as set forth in this Section 7.9.1, PacBio and Gen-Probe shall jointly defend and enforce any rights in any Joint Intellectual Property so that the legal fees, costs and expenses of both parties and any damage awards are shared equally, and with any damages payable to a Third Party or any recoveries from a Third Party resulting from the enforcement or defense of such rights being shared equally. To the extent necessary, the parties shall appoint a party to lead the defense and enforcement of such rights. The parties shall cooperate fully with one another in legal matters relating to Joint Intellectual Property, including, but not limited to, providing testimony and executing documents. Both parties have the right, but not the obligation, to participate in any action or proceeding with respect to Joint Intellectual Property by counsel of its own choice. Absent further agreement of the parties, and subject to Section 7.9.2, each party may elect not to participate in any enforcement action or proceeding and may elect not to pay its shares of the legal fees, costs and expenses incurred in connection with such action or proceeding. Neither party shall settle any enforcement action or proceeding without the other party's prior written consent if the proposed settlement will impact the other party's rights under the Joint Intellectual Property (e.g., by admitting invalidity). In any event, if both parties are participating in an enforcement action or proceeding, then neither party shall settle such action or proceeding without the other party's prior written consent.

7.9.2 Subject to 7.9.1, any recovery or other relief for infringement of Joint Intellectual Property shall first be allocated to reimburse the reasonable and actual expenses incurred in the enforcement process in a manner that results in equal net expenses to PacBio and to Gen-Probe. Any remainder shall be shared equally by PacBio and Gen-Probe if they both participated (i.e., such that the legal fees, costs and expenses of both parties and any damage awards are shared equally) in the enforcement process. If only one party participated in the enforcement process, the participating party shall be solely entitled to the relief obtained in the enforcement action or proceeding.

7.10 Third Party Infringement. In the event that any Third Party makes a written claim or demand, or brings an action, suit or proceeding (collectively, an "Action"), against either party, alleging infringement, unauthorized use or misappropriation of such Third Party's patents, copyrights, technology, other intellectual property rights or confidential information, and an adverse result from such Action is reasonably likely to have a material impact on the development of any Products in the Field in the good faith determination of such party, such party shall promptly notify the other party in writing, and provide copies of all materials or papers received by or served on such party from or by such Third Party. For the avoidance of doubt, the parties' respective obligations to each other with respect to any Third Party Actions arising out of, in connection with or relating to either party's sale or use of any Product or Preferred Access Product shall be as set forth in the Preferred Partnership Agreement for such Product or the supply agreement for such Preferred Access Product, respectively.

7.10.1 If an Action relates primarily to the Gen-Probe Intellectual Property Rights, Gen-Probe shall be primarily responsible for responding to the Action, including controlling any litigation and, unless otherwise agreed by the parties, paying the fees, costs and expenses relating thereto or in settlement thereof.

7.10.2 If an Action relates primarily to the PacBio Intellectual Property Rights, PacBio shall be primarily responsible for responding to the Action, including controlling any litigation and, unless otherwise agreed by the parties, paying any fees, costs and expenses relating thereto or in settlement thereof.

7.10.3 The principles of Section 7.9.1 shall apply with respect to any Action that reasonably relates to any Joint Intellectual Property.

7.11 Nothing herein shall require a party to acquire Third Party intellectual property, and the parties acknowledge that a Third Party claim of infringement is subject to Section 7.8 as to the prospective use of the Third Party technology. In the event that any Third Party intellectual property rights are judicially determined to preclude the manufacture, use or sale of any Product in the Field and the parties are unable to obtain prospective rights to such Third Party intellectual property rights on commercially reasonable terms, either party shall have the right to terminate development activities with respect to such Product. The termination of development activities by either party under this Section 7.11 shall mean that the Product shall cease to be an object of development efforts for all purposes under this Agreement and each party shall be permitted to develop, promote, market and sell such Product, subject to the other party's intellectual property rights in such Product, notwithstanding any provision of this Agreement to the contrary (including without regard to the exclusivity provisions of Article 4).

ARTICLE 8
TERM AND TERMINATION

8.1 Expiration. Unless terminated earlier pursuant to Section 8.2 below, this Agreement shall expire on the earlier of: (i) six (6) months after delivery by PacBio to Gen-Probe of a summary report establishing successful V2 Proof of Concept and (ii) thirty (30) months after the Effective Date, provided that in no event shall the Agreement expire prior to eighteen (18) months after the Effective Date (the "Term"). Upon the further written agreement by the parties effected prior to the expiration of the then-applicable Term, PacBio and Gen-Probe may renew this Agreement and extend the original Term.

8.2 Termination.

8.2.1 Breach. Each party may terminate this Agreement after the material breach of this Agreement by the other party, unless the breaching party has cured such breach within sixty (60) days after notice thereof from the non-breaching party. Any dispute with respect to the right of a party to terminate all or a portion of this Agreement shall be subject to resolution pursuant to Article 9.

8.2.2 Voluntary Bankruptcy. Each party may terminate this Agreement if the other party shall (a) seek the liquidation, dissolution, or winding up of itself (other than a liquidation of a solvent company for organizational purposes) or the readjustment of all or substantially all of its debts, (b) apply for or consent to the appointment of, or the taking of possession by, a receiver, custodian, trustee or liquidator of itself or of all or substantially all of its assets, (c) make a general assignment for the benefit of its creditors, (d) commence a voluntary case under the Bankruptcy Code, (e) file a petition seeking to take advantage of any other law relating to bankruptcy, insolvency, reorganization, winding-up or readjustment of debts, or (f) adopt any resolution of its Board of Directors or stockholders for the purpose of effecting any of the foregoing.

8.2.3 Involuntary Bankruptcy. Each party may terminate this Agreement if a proceeding or case shall be commenced without the application or consent of the other party and such proceeding or case shall continue undismissed, or an order, judgment or decree approving or ordering any of the following shall be entered and continue unstayed in effect, for a period of ninety (90) days from and after the date service of process is effected upon the other party, seeking (a) its liquidation, reorganization, dissolution or winding up, or the readjustment of all or substantially all of its debts, (b) the appointment of a trustee, receiver, custodian, liquidator or the like of itself or of all or substantially all of its assets, or (c) similar relief under any law relating to bankruptcy, insolvency, reorganization, winding up or readjustment of debts.

8.2.4 Acquisition by a Competitor. Each party may terminate this Agreement if the other party undergoes a Change of Control whereby (a) the other party is acquired by, merged with or reorganized or consolidated into a competitor of the terminating party (or an Affiliate of such competitor), or (b) the terminating party's competitor (or its Affiliate) becomes an Affiliate of the other party. For purposes hereof, (a) PacBio's "competitors" shall include […***…], their respective assigns and successors in interest, and any other entity that competes with PacBio in the DNA sequencing field as of the date of the Change of Control, and (b) Gen-Probe's "competitors" shall include

[…***…], their respective assigns and successors in interest, and any other entity that competes with Gen-Probe in the molecular Diagnostics field as of the date of the Change of Control.

8.3 Effect of Expiration and Termination. Except to the extent otherwise provided in this Agreement, upon expiration or termination of this Agreement, all rights and licenses granted hereunder shall terminate. Expiration or termination of this Agreement shall not relieve the parties of any obligation accruing prior to such expiration or termination. The provisions of this Section 8.3, the provisions of Sections 2.2 (excluding Sections 2.2.1 and 2.2.2), 5.2 and 8.2.1 and Articles 6, 7, 9 and 10 shall survive the expiration or termination of this Agreement, provided, however, that in the case of a termination prior to expiration of this Agreement, Sections 2.2.3, 2.2.4, 2.2.5 and 2.2.6 shall survive such termination solely in respect of the right of the party entitled to declare a termination to purchase Preferred Access Products of the other party.

ARTICLE 9
DISPUTE RESOLUTION AND GOVERNING LAW

9.1 Order. Disputes arising between the parties relating to the making or performance of this Agreement (including ownership of intellectual property rights, breach of confidentiality, inventorship, etc.) shall be resolved in the following order: (i) by good faith negotiation between executives of PacBio and Gen-Probe who have authority to fully and finally resolve the dispute; (ii) if necessary, by non-binding mediation at a location acceptable to the parties using a neutral mediator having experience with the industry (with the costs therefore shared equally); or (iii) as a last resort only, by arbitration of inventorship disputes as provided in Section 9.2, or by arbitration of any other disputes in accordance with Section 9.3. All negotiations pursuant to this clause shall be treated as Confidential Information in accordance with the provisions of Article 6 of this Agreement, and shall also be treated as compromise and settlement negotiations for purposes of Rule 408 of the Federal Rules of Evidence and comparable state rules of evidence.

9.2 Inventorship Disputes. If the parties are unable to resolve any dispute regarding inventorship by negotiation or mediation under Section 9.1, they shall submit such dispute to binding arbitration under the C.P.R. Institute for Dispute Resolution Rules for Non-Administered Arbitration of Patent and Trade Secret Disputes. The arbitrator shall be an independent patent attorney residing in the United States and registered to practice before the United States Patent and Trademark Office. The parties shall request that the arbitrator resolve the inventorship dispute in accordance with the laws of the United States within three (3) months of his or her appointment. The parties shall supply to the arbitrator documentary evidence of inventorship together with a written statement of their position not to exceed twenty (20) pages in length within twenty (20) days of the appointment of the arbitrator. Unless the parties agree to rely on affidavits, the arbitrator shall set a hearing at which each party shall have up to eight (8) hours to present witnesses and to cross examine the witnesses of the other party. If there is a hearing, each party shall provide a statement summarizing the testimony of each witness it may have testify to the other party and the arbitrator at least fifteen (15) days in advance of the hearing. The parties shall request that the arbitrator’s award be in writing not to exceed twenty (20) pages in length and shall include reasoning in support of the award. The resolution of the arbitrator shall be final and binding on the parties, without right of appeal.

9.3 Arbitration Procedure. Except as provided for in Section 9.2, any controversy or claim relating to, arising out of, or in any way connected to any provision of this Agreement shall be finally resolved by final and binding arbitration in accordance with this Section by a single arbitrator who is a former state or federal judge, to be conducted in San Francisco, California if initiated by Gen-Probe, or in San Diego, California if initiated by PacBio, or in such other location as mutually agreed by the parties. Unless the parties agree otherwise, the arbitration shall be conducted by the Judicial Arbitration and Mediation Services, Inc. ("JAMS"), or by any similar arbitration provider who can provide a former judge to conduct such arbitration if JAMS is no longer in existence. JAMS may order a change of venue upon a showing of good cause by respondent. The decision of the arbitrator shall be final, nonappealable and binding upon the parties, and it may be entered in any court of competent jurisdiction. The arbitrator shall be bound by all rules relating to the admissibility of evidence, including without limitation, all relevant privileges and the attorney work product doctrine. Discovery shall be permitted in accordance with the rules and procedures of the forum state unless otherwise agreed to by the parties or ordered by the arbitrator on the basis of strict necessity adequately demonstrated by the party requesting an extension of time. The arbitrator shall have the power to grant equitable relief where applicable under the law. The arbitrator shall issue a written opinion setting forth his or her decision and the reasons therefor within thirty (30) days after the arbitration proceeding is concluded. The obligation of the parties to submit any dispute arising under or related to this Agreement to arbitration as provided in this Article 9 shall survive the expiration or earlier termination of this Agreement.

9.4 Confidentiality. The existence of and any facts or documents related to any proceedings under Sections 9.1, 9.2, and 9.3 shall be treated as Confidential Information in accordance with the provisions of Article 6 of this Agreement. Any mediator or arbitrator shall be bound by an agreement containing confidentiality provisions at least as restrictive as those contained in Article 6 of this Agreement.

9.5 Equitable Considerations. Nothing in this Article 9 shall preclude any party from taking whatever actions are necessary to prevent immediate, irreparable harm to its interests.

9.6 Damages. The parties each agree to waive any right to receive punitive, indirect, incidental, special or consequential damages (including, but not limited to, loss of profits, revenue, or business) relating in any way to this Agreement; provided, however, that the foregoing waiver shall not apply to any breach of a party's obligations of confidentiality under Article 6.

9.7 Applicable Law. This Agreement shall be governed by and construed in accordance with the laws of the State of California, without regard to the conflicts of law principles thereof. The parties agree that the State of California has a substantial relationship to this transaction and each party agrees that the courts of California shall have exclusive jurisdiction over them and agree to submit to the jurisdiction of such courts. Accordingly, any and all litigation, including without limitation litigation relating to this Agreement, shall be brought exclusively in the State of California in the state or federal court having subject matter jurisdiction.

ARTICLE 10
MISCELLANEOUS

10.1 Limitation of Liability.

10.1.1 LIMITATION OF LIABILITY. UNDER NO CIRCUMSTANCES EXCEPT FOR A BREACH OF A PARTY'S OBLIGATIONS OF CONFIDENTIALITY UNDER ARTICLE 6 SHALL A PARTY BE LIABLE FOR PUNITIVE, INDIRECT, INCIDENTAL, SPECIAL OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, LOSS OF PROFITS, REVENUE, OR BUSINESS) IN ANY WAY RELATED TO THIS AGREEMENT, OR THE TERMINATION OF THIS AGREEMENT, OR ARISING OUT OF OR ALLEGED TO HAVE ARISEN OUT OF (i) BREACH OF THIS AGREEMENT, (ii) THE FAILURE BY EITHER PARTY TO DEVELOP ANY PRODUCTS OR PROCESSES IN ACCORDANCE WITH ANY DEVELOPMENT PLAN, (iii) THE FAILURE BY EITHER PARTY TO DEVOTE THE RESOURCES SPECIFIED IN ANY DEVELOPMENT PLAN, (iv) THE FAILURE BY EITHER PARTY TO COMPLY WITH THE TERMS OF A DEVELOPMENT PLAN, OR (v) ANY EVENT RELATED TO THE CONDUCT OF ANY DEVELOPMENT PLAN. This limitation applies regardless of whether such damages are sought based on breach of contract, negligence, or any other legal theory.

10.2 Notices. Any consent, notice or report required or permitted to be given or made under this Agreement by one party to the other shall be in writing, addressed to such other party at its address indicated below, or to such other address as the addressee shall have last furnished in writing to the addressor, and shall be effective: (i) if sent by registered or certified mail in the United States return receipt requested, upon receipt; (ii) if sent by nationally recognized overnight air courier (such as DHL or Federal Express), two (2) business days after mailing; (iii) if sent by facsimile transmission, with a copy mailed on the same day in the manner provided in clauses (i) or (ii) of this Section 10.2, when transmitted and receipt is confirmed by telephone or e-mail; and (iv) if otherwise actually personally delivered, when delivered.

If to Gen-Probe: Gen-Probe Incorporated

10210 Genetic Center Drive
San Diego, California 92121
Attention: President and CEO

With a copy to:

Gen-Probe Incorporated
10210 Genetic Center Drive
San Diego, California 92121
Attention: General Counsel

and

Debevoise & Plimpton LLP
919 Third Avenue
New York, NY 10022
Attention: Andrew L. Bab

If to PacBio: Pacific Biosciences of California, Inc.

1505 Adams Drive
Menlo Park, CA 94025
Attention: CEO

With a copy to:

Pacific Biosciences of California, Inc.
1505 Adams Drive
Menlo Park, CA 94025
Attention: General Counsel

10.3 Force Majeure. In the event that a party is prevented or delayed from fulfilling or performing any of its obligations under this Agreement (other than an obligation to pay money) due to the occurrence of causes beyond the reasonable control of such party, including fires, floods, embargoes, wars, acts of war (whether war is declared or not), insurrections, riots, civil commotions, strikes, lockouts or other labor disturbances, acts of God or acts, omissions or delays in acting by any governmental authority or the other party, then such party's performance shall be excused, and the time for performance shall be extended, for the period of inability or delay due to such occurrence; provided, however, that such party shall have used its Commercially Reasonable Efforts to avoid such inability or delay, and such party shall have given prompt written notice to the other party of such occurrence.

10.4 Assignment.

10.4.1 This Agreement may not be directly or indirectly assigned or otherwise transferred, nor, except as expressly provided hereunder, may any right or obligations hereunder be assigned or transferred by a party (whether voluntarily, by operation of law or otherwise) without the consent of the other party which shall not be unreasonably withheld: provided, however, that, except as otherwise provided in Section 10.5 below, either party may, without such consent, assign or transfer this Agreement and its rights and obligations hereunder in connection with the transfer or sale of all or substantially all of its assets related to this Agreement or in the event of its merger, consolidation, other change in control or similar transaction. Any permitted assignee or transferee shall assume all obligations of its assignor or transferor under this Agreement. Any purported assignment or transfer in violation of this Section shall be void.

10.4.2 Assignment by a party of its rights and obligations under this Agreement shall not relieve that party of its obligations under Articles 6 and 7 hereof.

10.5 Change in Control. Each of the parties shall notify the other party as promptly as possible after any effected Change of Control. The party receiving the notice of Change of Control may require the party subject to the Change of Control to provide adequate assurance of performance of the Agreement.

10.6 Severability. Each party hereby acknowledges that it does not intend to violate any public policy, statutory or common laws, rules, regulations, treaty or decision of any government agency or executive body thereof of any country or community or association of countries. Should one or more provisions of this Agreement be or become invalid, the parties shall substitute, by mutual consent, valid provisions for such invalid provisions, which valid provisions in their economic effect are sufficiently similar to the invalid provisions that it can be reasonably assumed that the parties would have entered into this Agreement with such provisions. In case such provisions cannot be agreed upon, the invalidity of one or several provisions of this Agreement shall not affect the validity of this Agreement as a whole, unless the invalid provisions are of such essential importance to this Agreement that it is to be reasonably assumed that the parties would not have entered into this Agreement without the invalid provisions.

10.7 Entire Agreement. This Agreement contains the entire understanding of the parties with respect to the subject matter hereof from and after the Effective Date. All express or implied agreements and understandings, either oral or written heretofore made which are directly related to the subject matter of this Agreement are superceded by this Agreement, except to the extent of rights and obligations pursuant to the Confidentiality Agreement which had accrued as of the Effective Date. The parties acknowledge that they are also party to the Stock Purchase Agreement and that the provisions of that agreement, or differences between that agreement and this Agreement, shall not influence the interpretation of this Agreement. This Agreement may be amended, or any term hereof modified, only by a written instrument duly executed by PacBio and Gen-Probe.

10.8 Independent Contractors. It is expressly agreed that Gen-Probe and PacBio shall be independent contractors and that the relationship between the parties shall not constitute a partnership, joint venture or agency. Neither Gen-Probe nor PacBio shall have the authority to make any statements, representations or commitments of any kind, or to take any action, which shall be binding on the other, without the prior consent of the party to do so.

10.9 No Solicitation. Each party agrees that for a period beginning on the Effective Date and ending on the close of business on the date two years following the termination or expiration of this Agreement, neither party nor any of its Affiliates shall solicit to employ any officer of the other party or any employee of the other party that is involved in the performance of this Agreement (which shall include research and development employees and members of the Steering Committee), without obtaining the prior written consent of the other party (it being understood that any newspaper or public solicitation not directed specifically to such Person shall not be deemed to be a solicitation for purposes of this provision); provided that this Section 10.9 shall not prohibit a party or such party’s Affiliates from discussing employment opportunities with, or hiring, any officer or employee of the other party involved in the performance of this Agreement who initiates such discussions with such party or such party’s Affiliates.

10.10 Waiver. The waiver by a party of any right hereunder or the failure to perform or of a breach by the other party shall not be deemed a waiver of any other right hereunder or of any other breach or failure by said other party whether of a similar nature or otherwise.

10.11 Drafting Party; Interpretation. The provisions of this Agreement, and the documents and instruments referred to in the Agreement, have been prepared, examined, negotiated and revised by each party and their respective lawyers, and no implication shall be drawn and no provision shall be construed against any party by virtue of the purported identity of the drafter of this Agreement, or any portion of this Agreement. The headings contained in this Agreement are for convenience of reference only, shall not be deemed a part of this Agreement and shall not be referred to in connection with the construction or interpretation of this Agreement. As used in this Agreement, the words “include” and “including,” and variations of thereof, shall not be deemed to be terms of limitation, but rather shall be deemed to be followed by the words “without limitation.” The parties acknowledge that they have been represented by counsel and have had the opportunity to conduct due diligence.

10.12 Third Parties. None of the provisions of this Agreement shall be for the benefit of or enforceable by any Third Party.

10.13 Affiliates. The rights and obligations of each party shall apply to its Affiliates, provided that each party shall be fully responsible for the performance by its Affiliates of such party’s obligations under this Agreement.

10.14 Counterparts. This Agreement may be executed in two or more counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument.

[REMAINDER OF THIS PAGE INTENTIONALLY LEFT BLANK]

IN WITNESS WHEREOF, the parties have executed this Agreement as of the Effective Date.

PACIFIC BIOSCIENCES OF CALIFORNIA, INC.

By /s/ Hugh Martin
Hugh Martin, PhD.
Chairman and Chief Executive Officer

GEN-PROBE INCORPORATED

By /s/ Eric Tardif
Eric Tardif
Senior Vice President, Corporate Strategy

EXHIBIT LIST

A — Initial Development Plan

B — Initial Appointees to Steering Committee

C — V2 Proof of Concept Criteria

EXHIBIT A
INITIAL DEVELOPMENT PLAN

The parties shall undertake the following activities:

*making available, through the Steering Committee, all data, expertise, technology and know-how reasonably necessary for each party to perform its respective obligations under the Collaboration;

*defining a potential pilot study regarding the evaluation of Gen-Probe's Front-End Sample Preparation technologies combined with PacBio's sequencing Sample Preparation technologies across multiple sample sources, with the goals of streamlining and optimizing Sample Preparation methodologies within the context of current market, regulatory and reimbursement requirements and developing the Products for the Diagnostics market;

*identifying, through the Steering Committee, regulatory and reimbursement requirements for an integrated Sample Preparation and Third Generation Sequencing System;

*identifying the other expected requirements of the Products, including workflow, cost, performance and other requirements, in each case based in part on customer and key opinion leader input; and

*identifying and planning strategies for ensuring clinical adoption of the Products.

EXHIBIT B
INITIAL APPOINTEES TO STEERING COMMITTEE

Gen-Probe Incorporated

1. […***…]

2. […***…]

3. […***…]

Pacific Biosciences, Inc.

1. […***…]

2. […***…]

3. […***…]

***Confidential Treatment Requested

EXHIBIT C
V2 PROOF OF CONCEPT CRITERIA

"V2 Proof of Concept" shall mean PacBio's initial demonstration, currently targeted to be completed in […***…], that the V2 System is […***…], including […***…] and satisfaction of the milestones set forth below:

1. Completion of […***…], including:

a. Successful completion of […***…].

b. Completion of […***…].

c. Completion of the preliminary […***…], which shall outline the future development pathway and identify any significant remaining technical challenges and the proposed resolution of such challenges.

d. Successful completion of tests on […***…] and […***…], demonstrating preliminary feasibility. Such feasibility tests should address at least the following risk items: […***…].

2. Successful completion of the preliminary cost analysis of the […***…] and its manufacture, according to the then-current design of the […***…] and V2 System, demonstrating reasonable technical and commercial efficacy and feasibility of such product for its intended application.

3. Successful completion of the intellectual property portfolio strategy and plan, including […***…].

4. Completion of risk analysis identifying technical and commercial risks and severity, together with a mitigation plan.

5. Completion of feasibility for the V2 System as a whole, including top level architecture.

Exhibit 10.8

Confidential Treatment Requested by Pacific Biosciences of California, Inc.

EXCLUSIVE LICENSE AGREEMENT

THIS AGREEMENT is effective as of February 1, 2004 ("Effective Date") between Nanofluidics, Inc. ("LICENSEE"), a corporation of the State of Delaware, that has a principal place of business at 31 Dutch Mill Road, Ithaca, New York 14850, and Cornell Research Foundation, Inc. ("FOUNDATION"), a non-profit corporation of the State of New York, having an office at 20 Thornwood Drive, Suite 105, Ithaca, NY 14850. FOUNDATION and LICENSEE (individually "Party" and collectively, "Parties") hereby agree as follows:

ARTICLE 1: INTRODUCTION

1.1 FOUNDATION is a wholly owned subsidiary of Cornell and holds the ownership interests of patents, trademarks, copyrights, and proprietary materials made by Cornell's employees and administers licenses in a manner consistent with the policies of Cornell.

1.2 The Technology outlined in FOUNDATION dockets: […***…] have been invented by employees of Cornell University ("Cornell"), assigned to FOUNDATION, and FOUNDATION has filed for patent protection on such inventions related to Technology

1.3 LICENSEE desires to obtain the right to develop and to commercialize the Technology.

1.4 The work leading to the Technology was supported in part by an agency of the United States Government, and FOUNDATION is obligated to comply with United States OMB Circular A-124 and 37 CFR Part 401. This license is subject to the applicable terms of United States Government regulations concerning Government funded inventions.

1.5 The Parties agree to the terms and conditions hereinbelow in order to develop the Technology for commercial purposes, and utilize them in the public interest.

ARTICLE 2: DEFINITIONS

2.1 "Affiliate" shall mean (1) any corporation or other noncorporate entity owning directly, or indirectly controlling, […***…] of the stock normally entitled to vote for election of directors of LICENSEE; (2) any corporation owned or controlled by LICENSEE through ownership of […***…] of the stock entitled to elect directors or any other entity actually controlled by LICENSEE, (3) any corporate or noncorporate entity under common control with LICENSEE.

2.2 “Applications” shall mean United States Patent Application entitled […***…] serial number […***…] filed […***…], […***…] serial number […***…] filed […***…], […***…] filed […***…] and […***…] serial number […***…] filed […***…] and any other United States patent applications that may be filed on Technology, and any continuations, continuations-in-part, divisions of these applications, and any foreign patent applications that correspond to United States patent applications.

2.3 “Patents” shall mean United States Patent Number […***…] issued […***…], United States Patent Number […***…] issued […***…], United States Patent Number […***…] issued […***…], United States Patent Number […***…] issued […***…], any corresponding foreign patent applications, and any patent that issues on Applications, including any reissues and reexaminations.

2.4 “Exclusive” shall mean that during the term of this Agreement FOUNDATION will not grant commercial rights to Technology to any other party.

2.5 “Field-of-Use” shall mean […***…].

2.6 “Licensed Territory” shall mean all territories in the world where there are pending Applications or unexpired Patents that have not been declared invalid in an unappealed decision by a court having jurisdiction

2.7 “License Year” shall mean each twelve-month period beginning on January 1 and ending on December 31. However, the first License Year (alternatively, License Year 1) shall commence on the Effective Date and end on December 31 of the same calendar year.

2.8 “Products” shall mean any product or service which is covered by claims in Applications or Patents or which are made by a process which is covered by claims in Applications or Patents and any services which is covered by claims in Applications or Patents.

2.9 “Net Sales” shall mean the gross amount received for sales and other dispositions of Products by LICENSEE, and Sublicensees, to an independent third party on an arm’s length basis less (i) all trade, quantity, and cash discounts actually allowed on Products, including discounts or rebates to governmental or managed care organizations; (ii) all credits and allowances actually granted on Products on account of rejection, returns, billing errors, and retroactive price reductions, (iii) charges for freight, insurance and other transport costs related to the delivery of the product; (iv) duties actually paid on Products; and (v) excise, sale and use taxes, and equivalent taxes or charges actually paid on Products.

2.10 “Sublicense” shall mean a rights-granting contract with an independent third party other than an Affiliate in which LICENSEE conveys rights granted to LICENSEE in 4.1 and 4.2 of this Agreement.

2.11 “Sublicensees” shall mean any entity granted a Sublicense by LICENSEE, and acceptable to FOUNDATION, under this Agreement.

2.12 “Technology” shall mean the novel methods, compositions and devices contained in the following FOUNDATION Dockets […***…] which are described in United States Patent Number […***…] issued […***…], United States Patent Number […***…] issued […***…], United States Patent Application Number […***…] filed […***…], United States Patent Application Number […***…] filed […***…], United States Patent Application Number […***…] filed […***…], United States Provisional Patent Application Number […***…] filed […***…], and United States Provisional Patent Application Number […***…] filed […***…] and any other United States patent applications that may be filed on the listed FOUNDATION Dockets, and any other patent applications, continuations, continuations-in-part, divisions of these applications related thereto, and any foreign patent applications that correspond to United States patent applications. FOUNDATION shall use reasonable efforts to assist LICENSEE in accord with any LICENSEE funded sponsored research undertaken at Cornell and separately contracted with Cornell’s Office of Sponsored Programs

2.13 “Valid Claim” shall mean a claim in an issued, unexpired patent or in a pending patent application within the Applications and Patents that (a) has not been finally cancelled, withdrawn, abandoned or rejected by any administrative agency or other body of competent jurisdiction, (b) has not been revoked, held invalid, or declared unpatentable or unenforceable in a decision of a court or other body of competent jurisdiction that is unappealable or unappealed within the time allowed for appeal, (c) has not been rendered unenforceable through disclaimer or otherwise, and (d) is not lost through an interference proceeding.

ARTICLE 3: APPLICATIONS AND PATENTS

3.1 FOUNDATION shall hold title to all Applications and Patents.

3.2 FOUNDATION agrees to use reasonable efforts to file and prosecute Applications and maintain Patents. At any time during the term of this Agreement, LICENSEE may elect in writing to be released from its license in any of the Patents or Applications, in which event LICENSEE shall thereafter have no obligation to reimburse FOUNDATION for any future expenses relating to such Patents or Applications, and FOUNDATION shall have the option at its sole discretion and expense to file, prosecute, maintain and license to a third party such Patents or Applications.

3.3 […***…] for preparation, filing, prosecution and maintenance of Applications and Patents except for those Applications and

Patents for which it has waived its rights, in writing, as described in Section 3.2. Such reimbursable expenses […***…]. Such expenses shall be paid to FOUNDATION by LICENSEE within thirty (30) days of receipt of an invoice therefore unless FOUNDATION has otherwise agreed, in writing. LICENSEE shall […***…] by LICENSEE for reimbursable expenses under this agreement.

3.4 FOUNDATION shall have final authority over selection of patent attorneys and all decisions concerning filing and prosecution of Applications and maintenance of Patents. However, FOUNDATION shall keep LICENSEE informed of its filing, prosecution and maintenance activities, such information to include without limitation copies of all documents related to the filing, prosecution and maintenance of Applications and Patents, and shall give LICENSEE the option to actively participate, including the right to co-counsel, in making major decisions concerning such activities.

ARTICLE 4: LICENSE GRANT AND COMMERCIAL EFFORTS

4.1 Subject to the terms and conditions of this Agreement and to the rights of and obligations to the United States Government as set forth in United States Office of Management & Budget Circular A-124 or 37 CFR Part 401 et seq., FOUNDATION hereby grants and LICENSEE hereby accepts an EXCLUSIVE right to make, use, sell, offer for sale, lease, import, export or otherwise dispose of Products under Applications and Patents in Field-of-Use in Licensed Territory for the term of this Agreement as specified in Section 7.1.

(i) The right of LICENSEE to make Products includes the right to have Products made by contract with third parties within the Licensed Territory. Such contractual arrangements with third parties shall be subject to and conditioned upon appropriate supervision and quality assurance and control of the third party by LICENSEE and the third party shall be bound in writing to respect all rights of FOUNDATION.

4.2 LICENSEE shall also have the right to grant Sublicenses under this Agreement, […***…]. LICENSEE agrees to provide FOUNDATION a copy of any Sublicense granted pursuant to this Article 4. Sublicenses under this Agreement will be considered to be Confidential Information as specified in Section 8.2. Any such Sublicense shall contain provisions that are consistent with all the provisions of this Agreement which are protective of and beneficial to FOUNDATION. FOUNDATION shall have the right to require that said Sublicense be terminated in the event that a Sublicense materially breaches the above provision. LICENSEE shall be responsible to FOUNDATION for the […***…]. LICENSEE shall […***…] of any up-front Sublicense fees, or other up-front consideration, not including (i) payments made in consideration of the LICENSEE'S issuance of equity, or debt securities of the LICENSEE and (ii) payments made to LICENSEE in consideration of or as support for research and development activities. LICENSEE'S obligation to pay FOUNDATION'S share of Sublicense consideration described above shall be considered incurred as of the date on which such Sublicense consideration is received by LICENSEE.

4.3 FOUNDATION and Cornell retain an irrevocable, nonexclusive, and nontransferable right to practice for their own educational and research purposes, the inventions claimed in Applications and Patents and such purposes shall include limited, non-commercial collaboration with other non-profit research institutes as long as it does not adversely affect or compete with the business of LICENSEE as determined by an objective third party acceptable to both parties.

4.4 Nothing in this Agreement shall be construed to give LICENSEE rights in any inventions currently owned or developed in the future by FOUNDATION or Cornell other than those explicitly specified in this Agreement. Nothing in this Agreement shall be construed to give FOUNDATION rights in inventions currently owned or developed in the future by LICENSEE other than those explicitly specified in this Agreement.

4.5 The rights granted by this Agreement are to LICENSEE alone and not to any third parties or to any subsidiary or Affiliate of LICENSEE. However, LICENSEE may transfer this Agreement by way of sale of LICENSEE, through merger, sale of assets and/or sale of stock. LICENSEE shall provide written notice to FOUNDATION of any such transfer.

4.6 LICENSEE shall use reasonable commercial efforts, consistent with sound and reasonable business practices and judgment, to affect commercialization of Products as soon as practicable and to maximize sales thereof. […***…]

(i) In the event that the FOUNDATION identifies any other markets for DNA sequencing in Licensed Territory and/or other Products and/or geographical area markets as significant, LICENSEE shall agree in writing to evaluate the potential for commercialization therein itself or through appropriate Sublicense in a timely manner. If LICENSEE elects not to pursue said commercialization in said market(s) or in FOUNDATION's sole judgment LICENSEE has failed to evaluate such commercialization, then LICENSEE agrees to Sublicense with reasonable commercial terms to a Sublicensee for said market(s) or terminate this LICENSEE'S rights under this Agreement only for said significant Products and/or geographical area markets

(ii) FOUNDATION may terminate this Agreement […***…].

4.7 Beginning with the first (1st) License Year, within sixty (60) days after the start of each License Year and until LICENSEE markets Products, LICENSEE shall make a written annual report to FOUNDATION covering the preceding License Year, regarding the progress of LICENSEE toward commercial use of Products. Such report shall include, at a minimum, information sufficient to enable FOUNDATION to satisfy reporting requirements of the United States Government and for FOUNDATION to ascertain progress by LICENSEE toward meeting the reasonable commercial efforts of this Article 4. LICENSEE shall provide these reports with the royalty report specified in Article 5. Such report will be considered to be Confidential Information as specified in Section 8.2.

4.8 LICENSEE shall not use, nor shall LICENSEE permit Sublicensee to use, the names, trademarks and indicia of FOUNDATION or of Cornell, nor the names of any employee, student or faculty member of FOUNDATION nor of Cornell without prior written approval from FOUNDATION, which will not be unreasonably withheld.

4.9 LICENSEE shall alone have the obligation to ensure that Products it makes, uses, sells, offers for sale, leases, imports, exports, or otherwise disposes of are not defective, that Products satisfy all applicable government regulations and that export of Products satisfies government export requirements.

ARTICLE 5: PAYMENTS, ROYALTIES, REPORTS AND RECORDS

5.1 As consideration for entering into this Agreement, […***…], in the event that LICENSEE […***…] related series of transactions with total proceeds to LICENSEE of at least […***…] (a "Major Financing") and following such Major Financing, FOUNDATION'S "Equity Ownership" of LICENSEE, which includes the shares of LICENSEE'S non-voting Common Stock then held by FOUNDATION (or any shares of LICENSEE'S voting common stock issued upon conversion thereof), is less than […***…] of LICENSEE'S outstanding capital stock (including all outstanding common stock, preferred stock, options or warrants to purchase common or preferred stock, and any options reserved for issuance under any equity incentive plan, hereinafter referred to as "on a fully diluted basis"); then

(a) LICENSEE shall issue to the FOUNDATION, pursuant to a common stock purchase agreement in the form attached hereto as Exhibit B, that number of shares of common stock equal to the number of shares necessary to increase FOUNDATION'S Equity Ownership to […***…] of LICENSEE'S outstanding capital stock, following such Major Financing, on a fully diluted basis. If the Major Financing exceeds […***…], LICENSEE will not issue any shares of common stock to provide an adjustment to FOUNDATION'S Equity Ownership for the amount of the Major Financing in excess of […***…]; and

(b) LICENSEE shall grant to FOUNDATION the same registration and information rights granted to the investors in the Major Financing.

(c) LICENSEE will use its commercially reasonable efforts to cause the common stock issued pursuant to Section 5.1(a) hereof to not be subject to any lock-up periods that may be required in connection with the LICENSEE'S initial public offering.

A Major Financing shall only include the first financing of LICENSEE that meets the […***…] proceeds threshold.

5.2 FOUNDATION hereby consent to any conversion of the non-voting Common Stock held by it to voting Common Stock in connection with the Major Financing.

5.3 FOUNDATION hereby agrees that all previous provisions of, rights granted and covenants made regarding the issuance of the LICENSEE'S capital stock are hereby waived, released and superseded in their entirety by the provisions of this Section 5 and shall have no further force or effect.

5.4 For the license granted hereunder, commencing on the date of the first commercial sale of Product, LICENSEE shall pay or cause to be paid to FOUNDATION a royalty of […***…] on Net Sales of Products on a country by country basis […***…]. In the event that Products incorporate at least one claim described in third party […***…] (each such third-party […***…] being defined as a "Non-Foundation Right") the royalty shall be (i) the amount of Net Sales for the Products incorporating Non-Foundation Rights, (ii) multiplied by […***…], and (iii) […***…]. Such stacking shall become effective on LICENSEE providing reasonable evidence to FOUNDATION that additional Applications or Patents are applicable to the Product. In the event of a disagreement as to the inclusion of any […***…], the Parties agree that an independent neutral party shall be consulted to determine the appropriateness of inclusion of the […***…] such royalty calculation.

5.5 Beginning with the […***…] License Year and in each License Year thereafter, LICENSEE shall pay FOUNDATION a minimum annual royalty for that License Year. Payment shall be due within thirty (30) days of the first day of the License Year and […***…] and the royalty reports required under Section 5.7 should reflect […***…]. None of the minimum annual royalties are refundable or applicable to a succeeding License Year. Such minimum annual royalty payments shall be made according to the following schedule and […***…]:

License Year	Payment Due Date	Min. Royalty Payment
[…***…]	[…***…]	[…***…]
[…***…]	[…***…]	[…***…]
[…***…]	[…***…]	[…***…]
[…***…]	[…***…]	[…***…]

5.6 Royalties shall be payable only once with respect to the same unit of Products.

5.7 LICENSEE shall provide FOUNDATION with semi-annual written reports, due June 30th and December 31st of each License Year, of all sales, leases or other dispositions of Products by LICENSEE and Sublicensees. In order to minimize LICENSEE time spent on royalty reports, a brief one-page Royalty Report Form is provided in Exhibit A that will satisfy FOUNDATION'S reporting requirements. The report shall be made within thirty (30) days of the end of each semiannual period. FOUNDATION agrees to keep the information in these reports confidential, except as may be necessary to maintain an action against LICENSEE for breach of this Agreement. Royalty payments for sales, leases, and other dispositions of the Products invoiced during a semi-annual period shall accompany the Royalty Report Form for that particular semi-annual period. The Royalty Report Form shall be submitted regardless of whether or not royalties are owed. Payments shall be made in United States dollars, Conversion from foreign currencies,

if any, shall be based upon the conversion rate published in The Wall Street Journal on the last day of the particular semi-annual accounting period (or on the last business day on which The Wall Street Journal is published during said semi-annual period) for which royalties are due. Royalty checks shall be made payable to Cornell Research Foundation and mailed to the address specified in section 13.4.

5.8 LICENSEE shall keep and maintain, and LICENSEE shall require that Sublicensees keep and maintain, any and all records necessary to certify compliance of LICENSEE with the terms of this agreement, including but not limited to accounting general ledgers, Sublicense and distributor agreements, price lists, catalogs, marketing materials, audited financial statements, income tax returns, sales tax returns, inventory records, and shipping documents of Products. Such records shall be open to inspection at reasonable times by a certified public accountant chosen by FOUNDATION and acceptable to LICENSEE, which shall not unreasonably withhold such acceptance. Such inspection shall be made at FOUNDATION'S expense. However, if the results of any audit reveal additional royalties owed to FOUNDATION that differ by more the […***…] percent) from those royalties already paid, LICENSEE shall also reimburse FOUNDATION for the costs of the audit. FOUNDATION agrees to hold such records confidential, except as may be necessary to maintain an action against LICENSEE for breach of this Agreement. The records required by this paragraph shall be maintained and available for inspection for a period of six (6) years following the calendar quarter to which they pertain. This paragraph shall survive termination of this Agreement.

5.9 LICENSEE shall reimburse FOUNDATION for the expenses specified in Section 3.3 within thirty (30) days of written invoice from FOUNDATION. Such invoice shall specify the date the expense was incurred, the purpose of the expense (including, as applicable, a summary of patent attorney services giving rise to the expense), and the Applications or Patents to which the expense relates,

5.10 Payments due under Sections 5.1 and 5.5 shall be considered late if not received by the dates specified in Sections 5.1 and 5.5 respectively, whether invoiced or not. Payments due under Section 5.9, and any other payments due under this Agreement, other than the payments due under Sections 5.1 and 5.5 and royalty payments, shall be considered late if not received within sixty (60) days of the date of invoice. Royalty payments due under Section 5.7 of this Agreement and payment of FOUNDATION'S share of Sublicense consideration shall become late if not paid within sixty (60) days after the end of the semi-annual in which the payment obligation was incurred. Late payments […***…].

5.11 LICENSEE agrees to make a written report to FOUNDATION within ninety (90) days after the expiration of this Agreement pursuant to Section 7.1. LICENSEE shall continue to make reports pursuant to the provisions of this Section 5.7 concerning royalties payable in accordance with Section 5.4 in connection with the sale of Products after expiration of the license, until such time as all such Products produced under the license have been sold or destroyed. Concurrent with the submittal of each post-termination report, LICENSEE shall pay FOUNDATION all applicable royalties.

ARTICLE 6: INFRINGEMENT

6.1 In the event that either party determines that a third party is making, using, selling, offering for sale, or importing a product that may infringe Patents, it will promptly notify the other party in writing. LICENSEE may elect, with the prior written consent of FOUNDATION, to bring suit against such alleged infringer. Such election must be made within thirty (30) days of receipt of said written consent from FOUNDATION. All recoveries in such suit shall belong to LICENSEE except that LICENSEE may elect to grant FOUNDATION the right to elect to pay up to fifty percent (50%) of the litigation costs and receive a percentage of any recovery equal to the percentage of litigation costs paid. If such suit involves claims of infringement of Non-Foundation Rights, FOUNDATION'S right of election to pay litigation costs and corresponding rights in recovery shall be limited to 50% multiplied by the fraction expressed in section 5.4 (iii). FOUNDATION must make such election within thirty (30) days of its receipt of notice that LICENSEE has elected to bring suit. FOUNDATION shall also have the right to choose to be represented by separate counsel in any such suit at its own expense. Such expense for separate counsel shall not be considered as part of "litigation costs" for purposes of determining FOUNDATION'S share of any recovery in accordance with the sentence above. If LICENSEE elects not to bring a suit against the alleged infringer, it shall promptly notify FOUNDATION of that fact and FOUNDATION shall have the right to commence such actions at its own cost and expense, in which case any recoveries shall belong to FOUNDATION. In such suits by FOUNDATION, LICENSEE shall have rights of participation and recovery that are the same as FOUNDATION rights as provided above when LICENSEE elects to sue, except in this case the fraction expressed in section 5.4 (iii) shall not be applied.

6.2 Regardless of which party controls a suit brought against an infringer, both parties shall participate in any settlement discussions and each will be a signatory to any settlement agreement.

ARTICLE 7: TERM AND TERMINATION

7.1 This Agreement shall commence on Effective Date, and shall continue as a Field-of-Use Exclusive license until the last of all Patents has either expired or been invalidated in an unappealed decision by a court having jurisdiction so long as LICENSEE'S covenants under the Agreement are being performed and the LICENSEE is in good standing, and provided this Agreement is not earlier terminated as provided for herein.

7.2 FOUNDATION may terminate this Agreement if LICENSEE:

(i) is in default in payment of license fees, royalties or cost reimbursements or in providing reports;

(ii) is in material breach of any provision of this Agreement;

(iii) provides any false report;

(iv) […***…];

(v) […***…];

(vi) if LICENSEE fails to provide written notice to FOUNDATION for the transfer of this Agreement upon the sale of LICENSEE in accordance to Section 4.5 or for a Sublicense of this Agreement in accordance with Section 4.2

and LICENSEE fails to remedy any such default, breach, or false report within sixty (60) days after receiving written notice thereof by FOUNDATION.

7.3 LICENSEE may terminate the license granted hereunder at any time upon sixty (60) days notice to FOUNDATION. FOUNDATION agrees that any expenses initiated by FOUNDATION during the sixty (60) day termination period will not be LICENSEE'S financial obligation although all other obligations under this Agreement shall continue to accrue during the sixty (60) day notice period, including the obligation to make any payments due under this Agreement.

7.4 Upon termination of this Agreement for any reason, including the end of term as specified above, all rights and obligations under this Agreement shall terminate, except those that have accrued prior to termination and except as specified in this Agreement.

ARTICLE 8: PUBLICATION AND CONFIDENTIALITY

8.1 It is the policy of FOUNDATION and Cornell to promote and safeguard free and open inquiry by faculty, students and others. To further this policy, FOUNDATION and Cornell shall retain the right to publish information described in Applications and Patents.

8.2 Both parties agree to keep any information identified as confidential by the disclosing party confidential using methods at least as stringent as each party uses to protect its own confidential information, except as may be necessary to maintain an action against LICENSEE for breach of this Agreement or to audit LICENSEE as specified under Section 5.8. "Confidential Information" shall include the progress report required under Section 4.7 and any other information marked confidential or accompanied by correspondence indicating such information is confidential exchanged between the parties hereto. The confidentiality and use obligations set forth above apply to all or any part of the Confidential Information disclosed hereunder except to the extent that:

(a) LICENSEE or FOUNDATION can show by written record that it possessed the information prior to its receipt from the other party;

(b) The information was already available to the public or became so through no fault of the LICENSEE or FOUNDATION;

(c) The information is subsequently disclosed to LICENSEE or FOUNDATION by a third party that has the right to disclose it free of any obligations of confidentiality; or

(d) Five years have elapsed from the expiration of this Agreement.

ARTICLE 9: ARBITRATION AND JUDICIAL REMEDIES

9.1 If a controversy arises under or related to this Agreement, and any disputed claim by either party against the other under this Agreement excluding any dispute relating to patent validity or infringement arising under this Agreement, the parties shall endeavor to resolve such controversy or dispute by mutual, good faith conciliation and mediation and, failing that, may mutually agree to settle the controversy or dispute by arbitration in accordance with the Licensing Agreement Arbitration Rules of the American Arbitration Association.

(i) Upon request by either party, arbitration will be by a third party arbitrator mutually agreed upon in writing by LICENSEE and FOUNDATION within thirty (30) days of such arbitration request. If the parties fail to mutually agree upon said third party arbitrator within the allotted thirty days, then the arbitration will be by a panel of three arbitrators comprising one arbitrator selected by each party within a further thirty (30) day period and a third arbitrator selected by the preceding two arbitrators. If one party fails to select an arbitrator within the allotted thirty day period, then said arbitration panel will consist solely of the arbitrator chosen by the other party.

(ii) The parties shall be entitled to discovery in like manner as if the arbitration were a civil suit in the New York Superior Court. The Arbitrator may limit the scope, time and/or issues involved in discovery.

(iii) Any arbitration shall be held at Ithaca, NY, unless the parties hereto mutually agree in writing to another venue.

9.2 FOUNDATION reserves the right and power to proceed with direct judicial remedies against LICENSEE without conciliation, mediation or arbitration for breach of the royalty payment and sales reporting provisions of this Agreement after giving written notice of such breach to LICENSEE followed by an opportunity period of thirty (30) days in which to cure such breach. In collecting overdue royalty payments and securing compliance with reporting obligations, FOUNDATION may use all judicial remedies available.

ARTICLE 10: INDEMNIFICATION

10.1 LICENSEE agrees to indemnify and hold harmless FOUNDATION and Cornell and their respective trustees, officers, employees, students, and agents against any and all claims for death, illness, personal injury, property damage, damages, expenses, losses and improper business practices arising out of (i) the manufacture, use, sale, or other disposition of Patents or Products by LICENSEE, Sublicensee, or their customers, (ii) a third party's use of a Products purchased, leased, or otherwise acquired from LICENSEE or Sublicensee, (iii) a third party's manufacture or provision of a Products at the request of LICENSEE or Sublicensee.

10.2 FOUNDATION shall not be liable for any indirect, special, consequential, or other damages whatsoever, whether grounded in tort (including negligence), strict liability, contract or otherwise. FOUNDATION shall not have any responsibilities or liabilities whatsoever with respect to Products.

10.3 LICENSEE and Sublicensee shall at all times comply, through insurance or self-insurance, with all statutory workers' compensation and employers' liability requirements covering any and all employees with respect to activities performed under this Agreement.

10.4 LICENSEE agrees to obtain and maintain insurance against liability, damage, destruction and loss comparable to that which is maintained by companies in similar businesses at similar stages in their growth.

10.5 The provisions of this article shall survive termination of this Agreement.

ARTICLE 11: WARRANTIES AND LIMITATIONS

11.1 FOUNDATION and LICENSEE each represent and warrant that they have the right to enter into this Agreement. FOUNDATION warrants that it has the right to convey to LICENSEE the rights granted under this Agreement.

11.2 FOUNDATION warrants that is the owner of Applications and Patents.

11.3 FOUNDATION makes no representation or warranty that Applications will result in issued Patents.

11.4 FOUNDATION makes no representations or warranties concerning the validity or scope of Patents.

11.5 FOUNDATION does not warrant that Products made, used, sold, leased, imported, exported or otherwise disposed of under the license of this Agreement is or will be free from infringement of patents of third parties.

11.6 Nothing herein shall be construed as granting by implication, estoppel, or otherwise any licenses or rights under patents or other rights of FOUNDATION or Cornell or other persons other than Patents, regardless of whether such patents or other rights are dominant or subordinate to any Patents.

11.7 FOUNDATION is under no obligation to furnish any technology or information other than that described and claimed in Applications and Patents.

11.8 Nothing herein shall be construed to grant LICENSEE rights under any applications or patents other than Applications and Patents.

11.9 FOUNDATION does not make any representations, extend any warranties of any kind, express or implied, or assume any responsibility whatever concerning the manufacture, use, or sale, lease or other disposition by LICENSEE or its vendees or transferees of Products.

11.10 Except as expressly set forth in this Agreement, FOUNDATION MAKES NO REPRESENTATIONS AND EXTENDS NO WARRANTIES OF ANY KIND, EITHER EXPRESS OR IMPLIED. THERE ARE NO EXPRESS OR IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR THAT THE USE OF PRODUCTS WILL NOT INFRINGE ANY PATENT, COPYRIGHT, TRADEMARK, OR OTHER RIGHTS OR ANY OTHER EXPRESS OR IMPLIED WARRANTIES.

ARTICLE 12: MARKING

12.1 Prior to the issuance of patents on the Applications, LICENSEE shall mark, and agrees to require that Sublicensees shall mark, Products (or their containers or labels) made, sold, leased, imported, exported or otherwise disposed of by it under the license granted in this Agreement with the words "Patent Pending," and following the issuance of one or more Patents, with the numbers of Patents.

ARTICLE 13: MISCELLANEOUS PROVISIONS

13.1 Terms in this Agreement which appear capitalized, other than the names of the parties and article headings, have the meanings given in Article 2 and retain those meanings whether used in the singular or plural.

13.2 This Agreement shall be binding upon and be to the benefit of the Parties hereto and their heirs, successors and assignees. However, neither Party shall assign this Agreement, in whole or in part, without the written consent of the other.

13.3 All issues and questions concerning the construction, validity and interpretation of this Agreement and the Schedules and Exhibits hereto shall be governed by, and construed in accordance with, the laws of the State of New York without giving effect to any choice of law or conflict of law rules or provisions (whether of the State of New York or any other jurisdiction) that would cause the application of the laws of any jurisdiction other than the State of New York. In furtherance of the foregoing, the internal law of the State of New York shall control the interpretation and construction of this Agreement (and all Schedules and Exhibits hereto), even though under that jurisdiction's choice of law or conflict of law analysis, the substantive law of such other jurisdiction would ordinarily apply. The parties hereto hereby irrevocably and unconditionally submit to the exclusive jurisdiction of any State court sitting in Tompkins County, State of New York or Federal court sitting in Syracuse, New York over any suit, action or proceeding arising out of or relating to this Agreement and agree that no such suit, action or proceeding shall be brought in any other court, forum or jurisdiction. The parties hereto hereby irrevocably and unconditionally waive any objection to the laying of venue of any such suit, action or proceeding brought in any such court and any claim that any such suit, action or proceeding brought in any such court has been brought in an inconvenient forum.

13.4 All notices required or permitted hereunder shall be in writing and be served on the parties at the addresses set forth below. Any such notices shall be either (a) sent by a nationally recognized overnight courier, in which case notice shall be deemed delivered when delivery is made according to the records of such courier, (b) sent by facsimile, in which case notice shall be deemed delivered upon receipt of confirmation of transmission of such facsimile notice, or (c) sent by personal delivery, in which case notice shall be deemed delivered upon receipt. Any notice by facsimile or personal delivery and delivered after 5:00 p.m., Eastern Daylight Time, shall be deemed received on the next Business Day. A party's address may be changed by written notice to the other parties; provided, however, that no notice of a change of address shall be affected until actual receipt of such notice.

In the case of FOUNDATION:

President
Cornell Research Foundation, Inc.
20 Thornwood Drive, Suite 105
Ithaca, NY 14850

In the case of LICENSEE:

President
Nanofluidics, Inc.
31 Dutch Mill Road
Ithaca, NY 14850

13.5 No term or provision of this Agreement shall be waived and no breach excused unless such waiver or consent shall be in writing and signed by the party claimed to have waived or consented. No waiver of a breach shall be deemed to be a waiver of a different or subsequent breach.

13.6 This Agreement may not be modified, changed or terminated orally. No change, modification, addition or amendment shall be valid unless in writing and signed by the parties hereto.

13.7 In the event any provision of this Agreement is determined to be invalid or unenforceable, the remaining provisions shall remain in full force and effect.

13.8 This Agreement constitutes and contains the entire agreement of the parties respecting its subject matter and supersedes any and all prior negotiations, correspondence, understandings and agreements, whether written or oral, between the parties respecting its subject matter.

IN WITNESS of this Agreement, FOUNDATION and LICENSEE have caused this Agreement to be executed by their duly authorized officers on the dates indicated.

Cornell Research Foundation, Inc.		**Nanofluidics, Inc.**	
By:	/s/ Richard S. Cahoon Richard S. Cahoon	By:	/s/ Stephen W. Turner Stephen W. Turner
Title:	Senior Vice President	Title:	President
Date:	March 2, 2004	Date:	March 2, 2004

EXHIBIT A - ROYALTY REPORT

Report royalty payment information to the Cornell Research Foundation, Inc (CRF) using the report format or facsimile attached to these instructions. This minimal information must be provided in order to correctly record royalty related events required by your license agreement with CRF.

Use a separate report to record royalty information for each license agreement. For each licensee agreement, report royalty sales by CRF docket number, which identifies the technology. List each contributing technology if more than one technology is used to produce a royalty generating process/product. This level of detail permits evaluation of the use of each technology under license with your company.

Submit this information along with appropriate payment to:

Cornell Research Foundation, Inc.
ATTN: Finance and Accounting
20 Thornwood Drive, Suite 105
Ithaca, NY 14850
(607) 257-1081
www.crf.cornell.edu

For your convenience, payments may be made by FEDWIRE or ACH to:

[…***…]

Account: […***…], ABA: […***…]

*** Confidential Treatment Requested

ROYALTY REPORT – [licensee NAME]

LICENSEE NAME: _____ CRF LICENSE NUMBER: _____

REPORTING PERIOD: _____

Individual to contact concerning this information:

Name: _____ Phone # or email ID: _____

For each product/item subject to a royalty payment provision, provide the following information as applicable.

PRODUCT/ITEM: _____

CRF Docket Number	Country	Number of Units/Products Sold	Gross Sales By Country	Net Sales By Country	Royalty Rate	Less Minimum Royalty Payment Made	Net Royalty Payment Made
						Total Payment	

Exhibit 10.9

Confidential Treatment Requested by Pacific Biosciences of California, Inc.

LICENSE AGREEMENT

THIS LICENSE AGREEMENT (this "Agreement"), dated as of September 11, 2006 (the "Effective Date"), is made by and between GE Healthcare Bio-Sciences Corp., with a principal place of business at 800 Centennial Avenue, Piscataway, New Jersey 08855 ("GEHC"), and Pacific Biosciences of California, Inc., with a principal place of business at 1505 Adams Drive, Menlo Park, CA 94025 ("Licensee").

RECITALS

WHEREAS, GEHC is the owner of the patents and/or patent applications set forth on Schedule 1 attached hereto; and

WHEREAS, Licensee desires to license from GEHC, and GEHC desires to license to Licensee, the Licensed Patents on the terms and subject to the conditions set forth herein.

NOW, THEREFORE, in consideration of the mutual premises and covenants herein contained and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties hereto intending to be legally bound do hereby agree as follows:

1. DEFINITIONS

1.1. "Affiliate" of a party means any entity that, directly or indirectly, controls, is controlled by or is under common control with such party. "Control" (and, with correlative meanings, the terms "controlled by" and "under common control with") means: (i) the ownership of fifty percent (50%) or more of the outstanding voting securities of an entity; or (ii) the power, whether by ownership of voting securities, by contract or otherwise, to appoint fifty percent (50%) or more of the members of the governing body of an entity.

1.2. "Confidential Information" shall mean all information of a confidential or secret nature, including without limitation, any financial and scientific data, technical and business information, sales data, information regarding advertising, distribution, marketing or strategic plans, product plans, customer information, business strategies, information regarding costs or profits, formulae, productivity or technological advances, product designs and specifications, development schedules, computer programs and systems, designs, data bases, inventions, engineering techniques and procedures, equipment, materials, test and test quality assurance procedures, research and research projects that, if disclosed in tangible form, is marked as "confidential" at the time of disclosure or, if disclosed orally, is orally identified as confidential or proprietary when disclosed.

1.3. Consumables shall mean a kit as sold as a single unit that includes sequencing reagent components and/or waiveguides.

1.4. "Consumable Kit" shall mean any sequencing reagent and/or waiveguide.

1.5. "Effective Date" shall have the meaning given to it in the first paragraph hereof.

1.6. "Field of Use" shall mean […***…].

1.7. "First Commercialization Date" shall mean the date when a Licensed Product or Licensed Service, as applicable, is first sold to a Third Party.

*** Confidential Treatment Requested

1.8. “Licensed Patents” shall mean all patents and patent applications listed in Schedule 1, any applications claiming priority to the listed patents or patent applications, including but not limited to continuations, divisions, continuing prosecution applications, reissues and reexams, any foreign counterparts of any of the listed patents or patent applications, and any patents or patent applications that claim priority from any common application from which any of the listed patents and patent applications claim priority.

1.9. “License Fees” shall have the meaning given to it in Section 4.1 hereof.

1.10. “Licensed Products” shall mean any product the manufacture, importation, use, distribution, performance, offer for sale, sale, lease or other transfer of which would but for the license granted herein infringe, directly or indirectly, a valid claim of a Licensed Patent.

1.11. “Licensed Services” shall mean any service (including, but not limited to, funded research, collaboration service, fee-for-service or laboratory service), which would but for the license granted herein infringe, directly or indirectly, a valid claim of a Licensed Patent.

1.12. “Minimum Annual Royalty” shall have the meaning given to it in Section 4.3 hereof.

1.13. “Net Sales” shall mean Net Sales of Licensed Products and/or Net Sales of Licensed Services, as applicable.

1.14. “Net Sales of Licensed Products” shall mean the invoice price of all sales of Licensed Products sold during the applicable period (i) by Licensee to end users, (ii) by Licensee to Permitted Distributors and/or (iii) by Permitted Distributors to end users, in each case, less the following amounts: (A) regular trade and quantity discounts actually taken; (B) government rebates actually taken; (C) actual returns of Licensed Products for which no replacement Licensed Products are provided; (D) taxes and duties directly imposed against the amount invoiced and actually paid by Licensee and (E) charges for packaging, handling and shipping separately stated on the invoice but before deduction of any other items.

1.15. “Net Sales of Licensed Services” shall mean either: (i) the invoice price of Licensed Services provided by Licensee, less the following amounts: (A) support costs, including, but not limited to, full-time equivalent (“FTE”) support, warranty support and service support; (B) regular trade and quantity discounts actually taken; (C) government rebates actually taken; (D) taxes and duties directly imposed against the amount invoiced and actually paid by Licensee and (E) charges for packaging, handling and shipping separately stated on the invoice but before deduction of any other items, or (ii) if Consumables or Consumable Kits that are Licensed Products are ordinarily sold, catalogued or invoiced separately from Licensed Services by Licensee, then Net Sales of Licensed Services shall be defined as the ordinary selling, catalogue or invoice price of such Consumables or Consumable Kits that are used by Licensee in the provision of such Licensed Services, less the deductions set forth in the foregoing clause (i).

1.16. “Net Sales Royalties” shall have the meaning given to it in Section 4.2 hereof.

1.17. “Permitted Distributor” shall mean any distributor of Licensed Products whose engagement has been approved by GEHC in accordance with Section 5.1 hereof.

1.18. “Royalties” shall mean, collectively, the Net Sales Royalties and the Minimum Annual Royalty.

1.19. “Term” shall have the meaning given to it in Section 9.1 hereof.

1.20. “Territory” shall mean the world.

1.21. “Third Party” shall mean any person or entity, other than Licensee, GEHC or their respective Affiliates, including, without limitation, any end user of Licensed Products.

2. LICENSE

2.1. License and Restrictions

2.1.1 During the Term and subject to the terms hereof, GEHC hereby grants to Licensee, and Licensee hereby accepts from GEHC, a non-exclusive, non-transferable license (without the right to sub-license except as to Permitted Distributors in compliance with Section 5 of this Agreement) under the Licensed Patents in the Territory to (i) make, have made, import, use, distribute, offer to sell and sell Licensed Products and (ii) perform Licensed Services, in each case, solely to end users all within the Field of Use. Notwithstanding anything to the contrary, GEHC reserves the right to practice the Licensed Patents for itself, and to grant further licenses, assign or otherwise transfer the Licensed Patents to others for any purpose whatsoever, provided that any such assignment or transfer does not affect the rights granted to Licensee hereunder.

2.1.2 Licensee will ensure that all sales of Licensed Products to end users, whether directly by Licensee or by one or more Permitted Distributors, shall be expressly conditional upon such end user's acceptance of the terms and conditions set forth on Exhibit A attached hereto, including, but not limited to, the restrictions on re-sale.

2.2. Compliance with Law. Licensee shall, and shall use its reasonable best efforts to cause any Permitted Distributor and/or any third-party manufacturer to, comply with all applicable laws, rules and regulations issued by the country of origin, the U.S. Government, the United Nations or other similar international organization in connection with (i) the making, having made, importing, use, distribution, sale of and/or offer to sell any Licensed Product and (ii) the performance of Licensed Services.

3. INTELLECTUAL PROPERTY

3.1.1. Any improvement to the Licensed Patents conceived during the Term of this Agreement, which improvement cannot be practiced absent the license granted hereunder (hereafter "Improvement"), whether patentable or not, conceived solely by one party shall be solely owned by such party with all rights appurtenant thereto; […***…].

*** Confidential Treatment Requested

4. LICENSE FEES; ROYALTIES

4.1. License Fees: In consideration of the rights granted to it under this Agreement, Licensee shall pay the following license fees (collectively, "License Fees") to GEHC:

4.1.1. […***…] payable on the Effective Date;

4.1.2. […***…] payable upon the First Commercialization Date.

4.2. Net Sales Royalties. In consideration of the rights granted to it under this Agreement, Licensee shall pay the following royalties (collectively, "Net Sales Royalties") to GEHC:

4.2.1. ***Licensed Products Royalty:***

4.2.1.1. […***…] of Net Sales of Licensed Products that are Consumables and/or Consumable Kits sold by Licensee directly to end users.

4.2.1.2. For sales by one or more Permitted Distributors, the lesser of (a) […***…] of Net Sales of Licensed Products that are Consumables and/or Consumable Kits sold by Licensee to such Permitted Distributor(s) and (b) […***…] of Net Sales of Licensed Products that are Consumables and/or Consumable Kits sold by such Permitted Distributor(s) to end users.

4.2.2. ***Licensed Services Royalty:*** […***…] of Net Sales of Licensed Services.

4.3. Minimum Annual Royalty: In consideration of the rights granted to it under this Agreement, Licensee shall pay to GEHC a minimum annual royalty equal to […***…] ("Minimum Annual Royalty") commencing upon the earlier to occur of (a) the […***…] and (ii) the […***…] anniversary of the Effective Date. The Minimum Annual Royalty shall be fully creditable against Licensed Product Royalties due for any 12 month period beginning upon the date required for such Minimum Annual Royalty Payment.

4.4. Payments. Net Sales Royalties shall be paid on Net Sales accruing during each calendar quarter within thirty (30) days following the end of such calendar quarter. The Minimum Annual Royalty shall be paid on each anniversary of its commencement date pursuant to Section 4.3 above. All payments hereunder shall be made by wire transfer of immediately available funds to an account specified in writing by GEHC. Except by termination of this Agreement under Section 9 of this Agreement, and notwithstanding the pendency of any infringement (or other) claim or action by or against Licensee, Licensee shall have no right to terminate or suspend (or escrow) payment of any amounts required to be paid to GEHC hereunder.

4.5. Royalty Reports. Concurrently with each payment of Net Sales Royalties, Licensee shall deliver to GEHC a report setting forth in reasonable detail (a) Licensee's total revenue in the Field of Use during the applicable calendar quarter; (b) a calculation of the Net Sales during such calendar quarter and (c) a calculation of the Net Sales Royalties for such calendar quarter.

*** Confidential Treatment Requested

4.6. Minimum Revenue. Licensee hereby acknowledges that the financial terms set forth in this Agreement are based on the understanding that no later than the […***…] anniversary of the First Commercialization Date, the total revenue generated by sales of Licensed Products that are Consumables and/or Consumable Kits in the Field of Use will equal at least […***…] of the total revenue generated by Licensee in the Field of Use at such date. Licensee hereby agrees that if the total revenue generated by sales of Licensed Products that are Consumables and/or Consumable Kits in the Field of Use equals less than […***…] of the total revenue generated by Licensee in the Field of Use on the […***…] anniversary of the First Commercialization Date or at any time thereafter during the Term, the parties shall in good faith negotiate an equitable adjustment to the financial terms of this Agreement commensurate with such revenue shortfall.

4.7. Taxes. GEHC shall bear the taxes to be levied on the income of GEHC arising under this Agreement. Licensee shall bear the taxes to be levied on the income of Licensee arising under this Agreement. Withholding or other taxes (if any) assessed on GEHC in connection with the payment of Royalties and other consideration due hereunder and which Licensee is required by law to deduct and withhold when making payments, shall be paid by Licensee to the competent authority on behalf of GEHC. The original of the official government receipt evidencing payment of such taxes by Licensee on GEHC's behalf shall be delivered by Licensee to GEHC not later than five (5) working days after the date of payment, together with supporting documentation identifying the Royalties to which such taxes relate. Upon receipt of such government receipts, the sums so paid by Licensee shall be credited by GEHC in partial discharge of Licensee's obligation for the payment of such Royalties.

4.8. Records. During the Term and for a period of […***…] thereafter, Licensee shall keep accurate records of all Net Sales in sufficient detail to enable GEHC to verify the Royalties payable thereon and Licensee's compliance with the minimum revenue requirement set forth in Section 4.6 hereof.

4.9. Audit. Upon reasonable advance written notice from GEHC, Licensee shall provide access to its relevant books and records (including, without limitation, sales records), at Licensee's facilities, to an auditor appointed by GEHC and reasonably acceptable to Licensee to verify Licensee's compliance with the terms of this Agreement, including, without limitation, the minimum revenue requirement set forth in Section 4.6 hereof. If an audit reveals a violation by Licensee of the terms of this Agreement, Licensee will immediately and at its sole cost and expense, take all requisite actions to remedy such violation. If any audit reveals an underpayment of Royalties in excess of […***…] percent […***…] during the period being audited, Licensee shall pay within thirty (30) days of the audit results (a) the full costs of such audit plus (b) interest on such Royalties at the rate of […***…].

5. PERMITTED DISTRIBUTORS; THIRD-PARTY MANUFACTURERS; ADDITIONAL LICENSES

5.1. Permitted Distributors. In the event Licensee intends to engage one or more distributors to import, distribute and/or sell Licensed Products, it shall give prompt written notice of such intention to GEHC and provide GEHC with an opportunity to negotiate in good faith with Licensee to provide such distribution services, which opportunity shall extend for no less than thirty (30) days from the date of GEHC's receipt of such written notice. If Licensee and GEHC fail to reach agreement in regard to the provision of such distribution services within such 30-day period, then Licensee may engage a third-party distributor to provide such distribution services; provided, however, that (a) the engagement of such third-party distributor shall be subject to GEHC's express prior written approval, which approval shall not be unreasonably withheld; it being acknowledged and agreed that in

*** Confidential Treatment Requested

the event that GEHC wishes to withhold consent, GEHC shall provide Licensee with an objective, commercially reasonable basis for such withheld consent within thirty (30) days of such written notice from Licensee; (b) the engagement of such third-party distributor shall be conditioned upon such distributor having agreed in writing to be bound by the terms and conditions of this Agreement and (c) Licensee shall remain liable for the payment of all royalties on Net Sales made by such distributor in accordance with Section 4.2.1.2, hereof. Each such third-party distributor engaged by Licensee in compliance with this Section 5.1 shall hereinafter be referred to as a "Permitted Distributor."

5.2. Third-Party Manufacturer. In the event Licensee intends to engage one or more manufacturers to make Licensed Products, it shall give prompt written notice of such intention to GEHC and provide GEHC with an opportunity to negotiate in good faith with Licensee to provide such manufacturing services, which opportunity shall extend for no less than thirty (30) days from the date of GEHC's receipt of such written notice. Subject to the foregoing sentence, nothing in this section shall be construed as restricting Licensee's rights to negotiate, agree or contract with any third party the right to manufacture Licensed Products for Licensee at any time.

5.3. Additional Licenses. Upon Licensee's written request, Licensor shall negotiate in good faith the terms of a license to any technology or intellectual property owned or licensed by Licensor which is necessary for Licensee to practice the license granted herein; provided, however, that Licensor's obligation to so negotiate shall be limited to the extent expressly permitted by the agreements (if any) to which such technology or intellectual property is subject.

6. ACKNOWLEDGEMENT OF PATENTS AND TRADEMARKS

6.1. Patents. Any and all packaging, insert sheets and/or promotional literature accompanying or referencing Licensed Products shall include the following statement: "This product or portions thereof is manufactured and sold under license from GE Healthcare under patents [**NOTE: FILL IN PATENT NUMBERS]** and other pending and foreign patent applications."

6.2. Trademarks. GEHC may from time to time require Licensee to affix, at Licensee's expense, certain of GEHC's trade names and/or trademarks on Licensed Products (including packaging, insert sheets and/or promotional literature accompanying or referencing such Licensed Products), in which case GEHC shall provide written instructions to Licensee (i) identifying the trade names and/or trademarks to be so affixed; (ii) identifying which Licensed Products shall carry such trade names and/or trademarks and (iii) setting forth guidelines for the use of such trade names and/or trademarks, provided that, consistent with the foregoing that matters relating to size and positioning of marks shall be subject to Licensee's reasonable marketing requirements.

6.3. Ownership and Use of Trademarks. Licensee acknowledges and agrees that:

6.3.1. GEHC is the owner of all GEHC trademarks and trade names appearing on packaging, insert sheets and promotional literature used in relation to Licensed Products pursuant to Section 6.1 above;

6.3.2. Licensee may only use such GEHC trademarks and trade names for the purpose and during the Term in accordance with Section 6.2 above;

6.3.3. Any rights Licensee may acquire in such GEHC trademarks and trade names pursuant to Licensee's use of such trademarks and tradenames under this Agreement shall be assigned to GEHC absolutely; and

6.3.4. Licensee shall not do or omit to do anything whereby the goodwill and reputation of such GEHC trademarks and trade names is reasonably likely to be prejudiced or damaged. Nothing in this section 6.3.4 shall preclude either party from exercising its legal rights under this Agreement or otherwise.

7. INDEMNIFICATION AND INSURANCE

7.1. Licensee Indemnification. Licensee hereby agrees to indemnify, save, defend and hold GEHC and its Affiliates, and each of their respective directors, officers, employees and agents, harmless from and against any and all claims, suits, actions, demands, liabilities, expenses and/or losses, including reasonable attorneys' fees and expenses, arising out of or relating to (i) any act or omission by Licensee, any of its Affiliates or any Permitted Distributor, or any of their respective directors, officers, employees and agents; (ii) claims (including, without limitation, claims of infringement or alleged infringement, death, personal injury, illness or property damage) arising out of Licensee's exploitation of the licenses and rights granted under this Agreement or otherwise arising out of the use of any Licensed Patent; or (iii) Licensee's or any end user's use or disposition of Licensed Products and/or Licensed Services.

7.2. Insurance. Licensee shall procure and maintain in full force and effect during the Term valid and collectible insurance policies in connection with its activities and indemnification obligations as contemplated hereby, which policies shall provide for the types and amounts of coverage as set forth in Schedule 2 attached hereto. Licensee shall notify GEHC in writing at least thirty (30) days prior to any modification to such insurance coverage. Upon GEHC's request, Licensee shall deliver to GEHC a certificate of coverage or other written evidence reasonably satisfactory to GEHC of such insurance coverage.

8. CONFIDENTIALITY

8.1. During the Term and for a period of five (5) years thereafter, each of Licensee and GEHC (each, a "Recipient") agrees not to disclose to any third party any Confidential Information disclosed to it by the other party (each, a "Disclosing Party") and not to use such Confidential Information other than for the purpose of this Agreement.

8.2. The undertakings of non-disclosure and non-use in this Section 8 shall not apply to information which:

8.2.1. at the time of disclosure or subsequently is published or otherwise generally available to the public other than through any act or omission on the part of the Recipient;

8.2.2. was in the possession of the Recipient at the time of disclosure;

8.2.3. was acquired from a third party who has the lawful right to make such disclosure;

8.2.4. is independently developed by the Recipient without reference to the materials comprising the Confidential Information disclosed under this Agreement; or

8.2.5. the Recipient notifies the Disclosing Party is required to be disclosed by the Recipient pursuant to a legally enforceable order, direction or other regulation but any disclosure shall be only so far as necessary to give effect thereto.

9. TERM AND TERMINATION

9.1. Term. The term (the "Term") of this Agreement shall commence on the Effective Date and shall terminate on the earlier to occur of (a) the date when none of the Licensed Patents remains in force in the Territory and (b) the date when this Agreement is terminated in accordance with the terms hereof.

9.2. Termination by Licensee. Licensee may terminate this Agreement at any time by providing GEHC written notice of such termination at least 90 days in advance of an effective date of such termination. Notwithstanding termination under this Section 9.2, Licensee shall be obligated to make payments for any amounts accruing up to the effective date of such termination.

9.3. Termination for Breach or other Event of Default. In the event of a breach by either party, the other party may terminate this Agreement by giving such party notice of such breach. The party receiving such notice shall have thirty (30) days from the date of receipt thereof to cure such breach. If such breach is not cured within such thirty (30) day period, then the non-breaching party shall have the right to terminate this Agreement effective as of the end of such period.

9.4. Termination for Minimum Revenue Shortfall: In the event the parties are unable to negotiate an equitable adjustment to the financial terms of this Agreement pursuant to Section 4.6 hereof within […***…] of commencing such negotiations, GEHC shall have the right to terminate this Agreement upon written notice to Licensee.

9.5. Change of Control.

9.5.1. Licensee shall deliver to GEHC advance written notice of any proposed Change of Control Event (as defined below) accompanied by a list of all Licensed Patents (if any) under which Licensee at the time of such notice (a) makes, has made, imports, uses, distributes, offers to sell and/or sells any Licensed Products or (b) has an ongoing and active development program at the proof of concept or prototype stage (clauses (i) and (ii) collectively, the "Utilized Patents"). Failure to give advance written notice of a Change of Control Event to GEHC shall constitute a breach of this Agreement by Licensee.

9.5.2. For purposes of this Agreement, the term "Change of Control Event" shall mean any transaction or series of related transactions pursuant to which (a) a Third Party becomes the beneficial owner of fifty percent (50%) or more of the total voting power of all classes of voting stock or securities of Licensee then outstanding; (b) Licensee consolidates with or merges into another entity, or another entity consolidates with or merges into Licensee, as a result of which fifty percent (50%) or more of the total voting power of all classes of voting stock or securities of Licensee then outstanding is acquired by a Third Party; or (c) Licensee conveys, transfers, leases or sells all or substantially all of the assets of Licensee to which this Agreement relates to a Third Party.

9.5.3. Upon the effective date of such Change of Control Event:

9.5.3.1. Licensee shall pay to GEHC an amount equal to […***…] in consideration of such assignment; and

9.5.3.2. Subject to receipt by GEHC of the fee set forth in Section 9.5.3.1 above, this Agreement shall (a) be assigned by operation of law to such Third Party with respect to all Utilized Patents; (b) automatically terminate and be of no further force and effect with respect to all Licensed Patents other than Utilized Patents and (c) be amended by the parties to delete all Licensed Patents other than Utilized Patents from Schedule 1 attached hereto.

*** Confidential Treatment Requested

9.6. Termination upon Bankruptcy or Insolvency. If Licensee becomes bankrupt or insolvent, or if the business of Licensee is placed in the hands of a receiver or trustee, whether by voluntary act or otherwise, this Agreement shall immediately and automatically terminate.

9.7. Effect of Termination. Upon termination or expiration of this Agreement, Licensee shall have no further license or rights under this Agreement with respect to the Licensed Patents and shall, and shall use its reasonable efforts to cause any Permitted Distributors to, immediately cease to (a) make, have made, import, use, distribute, sell or offer to sell Licensed Products and (b) perform or have performed any Licensed Services. Each party shall promptly return to the other party or destroy any and all Confidential Information or other proprietary information of such other party upon termination or expiration of this Agreement. Expiration or termination of this Agreement will not relieve either party from any obligations which have accrued prior to such expiration or termination. Notwithstanding anything to the contrary, Sections 3 (Intellectual Property), 4.8 (Records), 4.9 (Audit), 7 (Indemnification and Insurance), 8 (Confidentiality), 10 (Disclaimer and Limitation of Liability), and 11 (Miscellaneous), and any other provision of this Agreement that by its nature should survive, shall survive the expiration or termination of this Agreement.

10. DISCLAIMER AND LIMITATION OF LIABILITY

10.1. Disclaimer. EXCEPT FOR THE IMPLIED WARRANTY OF TITLE, THIS AGREEMENT PROVIDES NO OTHER WARRANTIES (STATUTORY OR IMPLIED), INCLUDING WITHOUT LIMITATION, AS TO LICENSED PRODUCT QUALITY, CONDITION, DESCRIPTION, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, AND ALL SUCH OTHER WARRANTIES ARE HEREBY EXPRESSLY DISCLAIMED BY GEHC. GEHC HEREBY EXPRESSLY DISCLAIMS ANY WARRANTY REGARDING RESULTS OBTAINED THROUGH THE USE OF THE LICENSED PRODUCTS, INCLUDING WITHOUT LIMITATION ANY CLAIM OF INACCURATE, INVALID OR INCOMPLETE RESULTS.

10.2. Limitation of Liability. Notwithstanding anything to the contrary herein contained, GEHC's liability for damages for any cause related to or arising out of this Agreement, shall not exceed the aggregate amount of the License Fees and Royalties actually paid by Licensee to GEHC hereunder.

10.3. Waiver of Consequential Damages. Notwithstanding anything to the contrary herein contained, GEHC shall not be liable for any indirect, consequential, special or punitive damages of any kind from any cause arising out of this Agreement, including without limitation, due to loss of profits, loss of goodwill or business interruption.

11. MISCELLANEOUS

11.1. Independent Entities. Neither party has any ownership interest in the other, and the relationship between the parties, as established by this Agreement, is solely that of independent contractors. This Agreement does not create any partnership, joint venture or similar business relationship between the parties. Neither party may assume or create any obligation, representation, warranty or guarantee, express or implied, on behalf of the other party for any purpose whatsoever.

11.2. Assignment. Except to the extent provided for in Section 9.5 hereof, Licensee may not assign this Agreement without GEHC's prior written consent. This Agreement shall be freely assignable by GEHC. Any assignment or any attempted assignment in breach of this Section shall be null and void. Subject to the foregoing, this Agreement shall bind and inure to the benefit of the parties hereto and their permitted successors and assigns.

11.3. Section Headings. The Section headings contained in this Agreement are for reference purposes only and shall not affect in any way the meaning and interpretation of this Agreement.

11.4. Non-Waiver of Rights. The failure of either party to enforce at any time for any period any provision hereof shall not be construed to be a waiver of such provision or of the right of such party thereafter to enforce such provision, nor shall any single or partial exercise of any right or remedy hereunder preclude any other or further exercise thereof or the exercise of any other right or remedy. Remedies provided herein are cumulative and not exclusive of any remedies provided at law.

11.5. Invalid Provisions. In the event that any one or more of the provisions (or any part thereof) contained in this Agreement or in any other instrument referred to herein, shall, for any reason, be held to be invalid, illegal or unenforceable in any respect, then to the maximum extent permitted by law, such invalidity, illegality or unenforceability shall not affect any other provision of this Agreement or any other such instrument. Any term or provision of this Agreement which is invalid, illegal or unenforceable in any jurisdiction shall, to the extent the economic benefits conferred by this Agreement to both parties remain substantially unimpaired, not affect the validity, legality or enforceability of any of the terms or provisions of this Agreement in any other jurisdiction.

11.6. Entire Agreement. This Agreement, together with all Schedules and Exhibits attached hereto, constitutes the final, complete and exclusive agreement and understanding between GEHC and Licensee relating to the subject matter hereof and supersedes all prior and contemporaneous agreements oral or written. To the extent that there are any conflicts between this Agreement and any Schedules or Exhibits hereto, this Agreement will prevail.

11.7. Notices. All notices and other communications hereunder shall be in writing. All notices hereunder shall be delivered personally, or sent by national overnight delivery service or postage pre-paid registered or certified U.S. mail, and shall be deemed given: when delivered, if by personal delivery or overnight delivery service; or if so sent by U.S. mail, three (3) business days after deposit in the mail, and shall be addressed:

If to GEHC:

800 Centennial Avenue
Piscataway, NJ 08855
Attention: Legal Department

If to Licensee:

Pacific Biosciences of California, Inc.
Attn: General Counsel
1505 Adams Drive
Menlo Park, CA 94025

or to such other place as either party may designate by written notice to the other in accordance with the terms hereof.

11.8. Governing Law. This Agreement shall be governed by the laws of the State of New York, without regard to its conflict of laws principles. Any controversies or claims arising from or relating to this Agreement shall be adjudicated exclusively by a federal or state court whose territorial jurisdiction encompasses the State of New York. EACH PARTY HEREBY WAIVES ITS RIGHTS TO A JURY TRIAL OF ANY CLAIM OR CAUSE OF ACTION BASED UPON, RELATING TO, OR ARISING OUT OF THIS AGREEMENT. THIS AGREEMENT MAY BE FILED AS A WRITTEN CONSENT TO A TRIAL BY THE COURT.

11.9. Publicity. Except as may be required by law or regulation (including any applicable stock exchange regulation), no press releases or public disclosure, either written or oral, regarding the execution of this Agreement or the content hereof, shall be made by either party hereto (or its Affiliates or representatives) without the prior knowledge and written consent of other party hereto, which consent shall not be unreasonably withheld.

11.10. Amendment. No amendment or modification of the terms of this Agreement shall be binding upon either party unless reduced in writing and signed by an authorized representative of the party to be bound.

11.11. Counterparts. This Agreement may be executed in multiple counterparts, all of which shall be considered one and the same agreement

[Remainder of Page Intentionally Left Blank]

IN WITNESS WHEREOF, the parties have executed this Agreement as of the dates written below.

GE Healthcare Bio-Sciences Corp.	Pacific Biosciences of California, Inc.
By : /s/ Eric Roman	By : /s/ Hugh Martin
Title : GM Genomic Sciences	Title : CEO
Date : September 6, 2006	Date : September 8, 2006

SCHEDULE 1

LICENSED PATENTS

[...***...]

*** Confidential Treatment Requested

SCHEDULE 2

INSURANCE REQUIREMENTS

1. Commercial General Liability Insurance in an amount not less than $1 million per occurrence/annual aggregate bodily injury/property damage combined.
2. As of the First Commercialization Date, Product Liability Insurance in an amount not less than $2 million per occurrence/annual aggregate bodily injury/property damage combined.
3. All Risk Property Insurance covering the full replacement value of Licensee’s property.
4. Workers Compensation Insurance - statutory limits.

EXHIBIT A

END USER TERMS AND CONDITIONS

Acceptance. These terms and conditions shall govern the purchase, use, transfer and acceptance of the products described in the purchase order, quotation or invoice, which products are sold and distributed by Pacific Biosciences of California, Inc.to the buyer/transferee of such products (the "End User"). The transfer/sale of products to the End User is expressly conditional upon End User's acceptance of these terms and conditions.

Restrictions on Use. End Users are specifically not authorized to and are forbidden from reselling, transferring or distributing any products either as a stand alone product or as a component of another product. The right to use the products does not, in and of itself, include or carry any right of the End User to any GE Healthcare Bio-Sciences Corp.'s technology or intellectual property other than expressly provided herein. End Users may not use sequence(s) in an attempt to reverse engineer parameters of any of GE Healthcare Bio-Sciences Corp. proprietary products or services.

DISCLAIMER OF WARRANTIES. GE HEALTHCARE BIO-SCIENCES CORP. PROVIDES NO WARRANTIES TO END USER (STATUTORY OR IMPLIED), INCLUDING WITHOUT LIMITATION, AS TO PRODUCT QUALITY, CONDITION, DESCRIPTION, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, AND ALL SUCH WARRANTIES ARE HEREBY EXPRESSLY DISCLAIMED. GE HEALTHCARE BIO-SCIENCES CORP. HEREBY EXPRESSLY DISCLAIMS ANY WARRANTY REGARDING RESULTS OBTAINED THROUGH THE USE OF THE PRODUCTS, INCLUDING WITHOUT LIMITATION ANY CLAIM OF INACCURATE, INVALID OR INCOMPLETE RESULTS.

Exclusion of Liability. GE Healthcare Bio-Sciences Corp. and its affiliates shall have no liability to an End User, including, without limitation, for any loss of use or profits, business interruption or any consequential, incidental, special or other indirect damages of any kind, regardless of how caused and regardless of whether an action in contract, tort, strict product liability or otherwise.

Exhibit 10.10

Confidential Treatment Requested by Pacific Biosciences of California, Inc.

IURTC Tech No. […*…]**

EXCLUSIVE LICENSE AGREEMENT

Between

INDIANA UNIVERSITY RESEARCH AND TECHNOLOGY CORPORATION
Licensor

And

NANOFLUIDICS, INC.
Licensee

*** Confidential Treatment Requested

Introduction: This Exclusive License Agreement ("Agreement") is made and entered into on the Effective Date by and between the Indiana University Research and Technology Corporation, a nonprofit corporation organized under the laws of the state of Indiana, having its principal offices at 351 West 10th Street, Indianapolis, Indiana 46202 (hereinafter "IURTC"), and Nanofluidics, Inc., a corporation organized under the laws of the State of Delaware, having its address at 1505 Adams Drive, Menlo Park, CA 94025 (hereinafter "Nanofluidics").

1 **Background:** Through a Memorandum of Agreement between Indiana University (IU) and the Advanced Research and Technology Institute (ARTI), the predecessor corporation to IURTC, dated January 1, 1997, IU assigns its intellectual property to IURTC and IURTC is responsible for managing the intellectual property through its Office of Technology Transfer. IURTC is the owner of certain Intellectual Property that is the subject of this Agreement and has the right to grant licenses. IURTC wishes to allow the Intellectual Property to be used to further scientific research and for new product development and other applications in the public interest and is willing to grant a license for such uses. Nanofluidics represents to IURTC that it has the necessary product development, manufacturing and marketing capabilities to commercialize products based on such Intellectual Property. Nanofluidics desires to obtain a license to use these properties and information for its own commercial research and development endeavors upon the terms and conditions set forth in this Agreement. In consideration of these premises and the mutual promises contained herein, the Parties further agree as follows.

2 **Definitions:** For the purposes of this Agreement, the following words and phrases will have the meanings assigned to them below.

2.1 Calendar Half: Each six-month period, or portion thereof, beginning on January 1 or July 1.

2.2 Calendar Year: Each twelve month period, or portion thereof, beginning on January 1.

2.3 Confidential Information: All terms of this agreement and any information provided by a Party to the other Party pursuant to this Agreement, which is identified as "Confidential Information" at the time provided.

2.4 Development Plan: Nanofluidics' good faith, bona fide plan for the development, manufacture, promotion, importation, sale and/or marketing of Licensed Products.

2.5 Diagnostic: A Licensed Product which is intended to diagnose or ascertain clinical condition(s) of a patient, wherein information is to be reported to a patient and/or his/her caregiver for use in a therapeutic decision.

2.6 Effective Date: May 15, 2005.

2.7 Field: [...***...]

2.8 First Commercial Sale: The earliest date on which Nanofluidics or any of its Sublicensees executes a Sale (including equivalent cash value for trades or other non-cash payments). The transfer of Licensed Products by Nanofluidics or its Sublicensees strictly for their own laboratory research and development purposes, beta-testing and/or clinical testing does not constitute a First Commercial Sale for the purposes of this Agreement, provided that Nanofluidics or its Sublicensees receive no payment or other compensation or value for such Licensed Product in excess of the fully burdened (i.e., direct and indirect) costs of producing and transporting such materials.

2.9 Intellectual Property: Any and all rights under the Patent Rights.

2.10 Licensed Product: Any product made, made for, used, sold or imported by Nanofluidics or any Sublicensees that: (a) in the absence of this Agreement would infringe at least one Valid Claim, or (b) uses a process covered by a Valid Claim.

2.11 Nanofluidics: Nanofluidics, Inc. and its affiliates which are exercising the rights granted in Article 3. For the purpose of this definition, affiliate is any person or entity that, directly or indirectly, owns or controls a Party or that is controlled by or under common control with a Party. Control(s) or controlled by means (a) direct or indirect ownership of at least 50% of the outstanding voting securities of a corporation, (b) the right to receive at least 50% of the earnings of the person, corporation, or other entity in question, or (c) the right to control the business decisions of the person, corporation, or other entity in question.

2.12 Net Sales: The total of all value, compensation, and payments received for Sales of Licensed Products, it being understood that Net Sales will include only Sales of [...***...], less the following:

2.12.1 Trade, quantity and cash discounts on Licensed Products actually provided to third parties.

2.12.2 Credits, allowances or refunds, not to exceed the original invoice amount, for actual claims, damaged goods, rejections or returns of Licensed Products.

2.12.3 Excise, sale, use, value added or other taxes, other than income taxes, paid by Nanofluidics or its Sublicensees due to the Sale of Licensed Products.

2.12.4 Freight, transport packaging, or insurance charges associated with transportation.

2.13 Party: IURTC or Nanofluidics. Collectively, IURTC and Nanofluidics are referred to as the “Parties.”

2.14 Patent Rights: Any and all rights in and to United States Patent No. [...***...], as well as all patents or applications claiming priority thereto or common priority with United States Patent No. [...***...], including all divisions, continuations, continuations-in-part, reissues, reexaminations, and any foreign counterparts to the foregoing patents or applications.

2.15 Sale: Any transaction in which a Licensed Product is exchanged or transferred for value. A Sale of a Licensed Product will be deemed to have been made at the time Nanofluidics (or anyone acting on behalf of or for the benefit of Nanofluidics) first invoices, ships, or receives value for a Licensed Product.

2.16 Sublicensee: A person or entity to whom Nanofluidics has granted a sublicense pursuant to and in accordance with Article 3 of this Agreement.

2.17 Sublicensing Revenue: All payments received by Nanofluidics from its Sublicensees specifically attributable to the licensing of Intellectual Property, including upfront cash payments, minimum royalties and royalties on Net Sales on the account of the importation, manufacture, sale, or use of Licensed Products in the Territory during the Term of this Agreement.

2.18 Term: Commencing on the Effective Date and continuing until the expiration of the last to expire patents included in the Patent Rights unless earlier terminated in accordance with this Agreement.

2.19 Territory: Anywhere in the world, except those countries to which export of technology or goods is prohibited by applicable U.S. export control laws or regulations.

2.20 Valid Claim: A claim of an issued and unexpired patent included in the Patent Rights that has not been disclaimed, or has not been held invalid or unenforceable by a court or other governmental agency of competent jurisdiction in a decision or order that is not subject to appeal.

3 **License Grant:** Subject to the terms and conditions set forth in this Agreement, IURTC hereby grants to Nanofluidics and Nanofluidics hereby accepts, the following license during the Term in the Territory:

3.1 An exclusive, fee- and royalty-bearing license, including the right to enforce the Patent Rights and the right to grant sublicenses as set forth herein, under the Intellectual Property, to make, have made, sell, offer for sale, have sold, use, import and have imported Licensed Products in the Field.

3.2 Nanofluidics may grant sublicenses under this Agreement only in strict compliance with the following terms and conditions:

3.2.1 Only Nanofluidics is permitted to grant sublicenses. Any sublicense granted by Nanofluidics under this Agreement shall provide that Sublicensees:

3.2.1.1 Indemnify and hold harmless IURTC Indemnitees (as defined in Article 11) to the same extent and under terms no less favorable to IURTC Indemnitees as Nanofluidics' obligations under Article 11 of this Agreement.

3.2.1.2 Maintain insurance for IURTC's benefit to the same extent and under terms no less favorable to IURTC as Nanofluidics' obligations under Article 12 of this Agreement.

3.2.1.3 Maintain books and records and allow audits for IURTC's benefit to the same extent and under terms no less favorable to IURTC as Nanofluidics' obligations under Section 6.4 of this Agreement.

3.2.1.4 Use commercially reasonable efforts to comply with those parts of Nanofluidics' Development Plan referred to in Article 4 of this Agreement which are relevant to the activities of the Sublicensee.

3.2.1.5 Will pay directly to IURTC the Sublicensing Revenue then due or thereafter due to Nanofluidics upon receipt of notice from IURTC and only after Nanofluidics enters bankruptcy or receivership, voluntarily or involuntarily. IURTC will remit to Nanofluidics any amounts received that exceed the sum actually owed by Nanofluidics to IURTC.

3.2.1.6 Will become direct licensees of IURTC under the rights originally sublicensed to them by Nanofluidics if this Agreement is terminated prior to expiration, provided that (i) the Sublicensee did not cause the termination of this Agreement and (ii) the Sublicensee agrees to reasonably comply with the relevant terms of this Agreement and to fulfill all the responsibilities of Nanofluidics hereunder including reasonable obligations to continue with product development. In no event, however, shall a person or entity who becomes a direct licensee pursuant to this provision have any right to grant sublicenses under this Agreement. Sublicensing agreements will remain in effect if this Agreement is terminated prior to expiration.

3.2.2 Within thirty (30) days of the effective date of any sublicense, Nanofluidics shall provide IURTC a complete copy of the sublicense and all exhibits thereto. If the original sublicense is written in a language other than English, the copy of the sublicense and all exhibits thereto shall be accompanied by a complete translation written in English. Nanofluidics represents and warrants that such translation will be a true and accurate translation of the sublicense agreement and its exhibits.

3.2.3 Nanofluidics will be primarily liable to IURTC for all of Nanofluidics' obligations contained in this Agreement. Any act or omission by a Sublicensee that would be a breach of this Agreement if not unreasonably imputed to Nanofluidics will be deemed to be a breach by Nanofluidics of this Agreement.

3.2.4 If IURTC becomes aware of the breach, IURTC will provide Nanofluidics reasonable advance notice of such act or omission by a Sublicensee, and afford Nanofluidics the opportunity to cure the breach within ninety (90) days after Nanofluidics receives the notice from IURTC.

3.3 The license "to have made" granted in Articles 3.1 and 3.2 means that the Nanofluidics may contract with one or more third parties to manufacture Licensed Products for Nanofluidics for sale or offer for sale by Nanofluidics or Sublicensees within the scope of its (or their) sales operations. Nanofluidics shall require all such third parties to assume confidentiality obligations consonant with Article 7 of this Agreement.

3.4 IURTC and IU may use the Intellectual Property for non-commercial educational and research purposes and permit other universities and non-profit research institutes to do the same, it being understood that no rights will be extended to commercial entities pursuant to this section.

3.5 Except with respect to Confidential Information provided by Nanofluidics under this Agreement, Nanofluidics may not in any way restrict the rights of IU, other universities or non-profit institutions, or their faculty, staff, students, or employees from publishing the results of their research related to the Intellectual Property.

3.6 This Agreement provides Nanofluidics and Sublicensees no ownership rights of any kind in the Intellectual Property. All ownership rights remain the property of IURTC.

3.7 In accordance with Public Laws 96-517, 97-256 and 98-620, codified at 35 U.S.C. §§ 200-212, the United States government retains certain rights to inventions arising from federally supported research or development. Under these laws and implementing regulations, the government may impose requirements on such inventions. Licensed Products embodying inventions subject to these laws and regulations sold in the United States must be substantially manufactured in the United States. The license rights granted in this Agreement are expressly made subject to these laws and regulations as they may be amended from time to time. Nanofluidics shall be required to abide by all such laws and regulations and shall ensure that all sublicenses under this Agreement impose a similar requirement upon all Sublicensees.

3.8 Nanofluidics shall ensure that appropriate markings, such as the patent number included in the Patent Rights, appears in accordance with each country's patent laws, on all Licensed Products (or their packaging, as appropriate) sold by or on behalf of Nanofluidics and all Sublicensees.

4 **Diligence:** Nanofluidics agrees to use commercially reasonable efforts to develop, manufacture, promote and sell Licensed Products (including sales through agents or distributors) in accordance with the Development Plan.

4.1 Within sixty days of the Effective Date of this Agreement, Nanofluidics will provide IURTC with a Development Plan that contains Nanofluidics' good faith, bona fide plans for commercializing Licensed Products as rapidly and extensively as practicable. The Development Plan will contain the following information:

4.1.1 A summary of work completed as of the submission date of the Development Plan relating to development of Licensed Products and a description of each Licensed Product planned for development.

4.1.2 Tasks to be performed by Nanofluidics, its contractors and/or Sublicensees to develop Licensed Product to the point of commercialization, including estimated time schedules for specific tasks to be accomplished.

4.1.3 Tasks to be performed to achieve regulatory approval or other certification of Licensed Product, including estimated time schedules for each.

4.1.4 Identification of the primary country(ies) in which the Licensed Product(s) will be sold and a good faith estimate of time of First Commercial Sale in the primary country(ies).

4.2 Nanofluidics will update the Development Plan and report progress against the Plan in writing to IURTC no later than January 31 of the Calendar Year following the Calendar Year in which the Effective Date falls and no later than January 31 of each subsequent Calendar Year. The updates and reports will summarize in reasonable detail the progress achieved and any problems encountered in the development, evaluation, testing, manufacture, initial sale, and/or initial marketing of each Licensed Product. Upon reasonable request by IURTC, Nanofluidics will consult with IURTC about tasks, schedules and progress.

4.3 Prior to the First Commercial Sale of any Licensed Product, Nanofluidics will be considered diligent developing any Licensed Product so long as Nanofluidics timely provides the required updates and progress reports to the Development Plan and so long as Nanofluidics:

4.3.1 Provides financial and other resources required to maintain progress in accomplishing the Development Plan as to any Licensed Product.

4.3.2 Uses commercially reasonable efforts to conduct and/or enable others to conduct all activities required to maintain scheduled progress to accomplish the Development Plan as to any Licensed Product.

4.4 Within [...***...] after the First Commercial Sale of a Licensed Product Nanofluidics will be considered diligent if [...***...].

4.5 If Nanofluidics has ceased to develop, manufacture, promote and sell Licensed Products (including sales through agents or distributors) in accordance with the provisions of this Article, for reasons other than: (a) a governmental agency has withheld regulatory approval notwithstanding Nanofluidics' diligent efforts to obtain such approval; (b) Nanofluidics encountered unanticipated technical or scientific problems that have been promptly reported in writing to IURTC; or (c) Nanofluidics encountered other causes beyond its reasonable control, notwithstanding its diligent efforts to overcome them, and which have been promptly reported in writing to IURTC; then IURTC must notify Nanofluidics of its belief that Nanofluidics has not reasonably fulfilled the diligence obligations pursuant to any provisions in Article 4 and provide reasonable justification for such belief. Upon provision of such notice and at the request of IURTC, Nanofluidics must show cause why the exclusivity granted hereunder should not be terminated. If within ninety (90) days after IURTC's service of notice, Nanofluidics has not provided IURTC with reasonable evidence that Nanofluidics has met the diligence obligations of this Article 4, then IURTC may immediately terminate the exclusive license granted hereunder. Notwithstanding the foregoing, the Parties agree to engage in good faith discussions, and negotiations as necessary, prior to any early termination of this Agreement as provided herein.

5 Fees, Payments, and Royalties

5.1 Nanofluidics shall pay to IURTC a non-refundable, non-creditable license issue fee of [...***...]. The license fee of [...***...] shall be paid in three separate installments, each payable on or before [...***...], [...***...], and [...***...].

5.2 Within fifteen (15) days after the Effective Date, Nanofluidics shall pay to IURTC [...***...] as reimbursement for documented expenses incurred for preparing, filing, and prosecuting patents and patent applications prior to the Effective Date.

5.3 Beginning on the first anniversary of the Effective Date until the Calendar Half of the First Commercial Sale that occurs in a primary country designated in the Development Plan, Nanofluidics shall pay to IURTC a non-refundable, non-creditable license maintenance fee of [...***...] per Calendar Half.

5.4 Nanofluidics shall pay to IURTC a non-refundable minimum royalty during the Term of this Agreement. The first calendar period for which the minimum royalty will be paid will begin on the first day of the Calendar Half following the Calendar Half in which the First Commercial Sale occurs. Payments under this Section 5.3 will be due in the following amounts for the corresponding periods:

Period	Minimum Royalty
[...***...]	[...***...]
[...***...]	[...***...]
[...***...]	[...***...]
[...***...]	[...***...]

5.4.1 Minimum royalties will be paid within thirty (30) days of the end of each respective Calendar Half.

5.4.2 Minimum royalties will be creditable against earned royalties for the Calendar Year in which they were or are to be paid.

5.5 Nanofluidics shall pay to IURTC an earned royalty of:

5.5.1 [...***...] of Net Sales of a sequencing service provided by Nanofluidics to a third party, excluding services promoted as a Diagnostic.

5.5.2 [...***...] of Net Sales of Nanofluidics to a third party, excluding Diagnostic products and services, and sequencing services under Section 5.5.1.

5.5.3 [...***...] of Net Sales of a Diagnostic product or service sold by Nanofluidics to a third party.

5.5.4 In the event the [...***...] are offered in combination with other product(s), service(s) or component(s) for a single price, then the Net Sales of the [...***...] will be calculated by multiplying the gross invoice price of the combination by the fraction A/(A+B), where A is the catalog price, during the royalty period in question, of the [...***...] sold separately, and B is the total catalog price, during the royalty period in question, of the other product(s), service(s) or component(s) sold separately. If the [...***...] or the other product(s), service(s) or component(s) are not offered separately during that royalty period, then the gross invoice price on the combination will be reasonably allocated between the [...***...] and other product(s), service(s) or component(s), based on their relative cost of goods determined by Generally Accepted Accounting Principles (GAAP).

5.5.5 Earned royalties will be accumulated and reported each Calendar Half. Nanofluidics will pay to IURTC earned royalties accumulated during a Calendar Half within thirty (30) days of the end of said Calendar Half.

5.6 In the event Nanofluidics is obligated to pay, pursuant to any bona fide, arm’s length contract or any judgment effective after the Effective Date of this Agreement, any amounts to any third parties with respect to a Licensed Product, Nanofluidics may deduct [...***...] percent [...***...] of the amounts owing to such third party from the royalties owing to IURTC pursuant to Section 5.5 for such Licensed Product. However, such royalties to be paid to IURTC pursuant to Section 5.5 shall not be so reduced to less than [...***...] of the amounts that would have otherwise be due IURTC with respect to such Licensed Product.

5.7 In the event any patent or any claim thereof included within the Patent Rights is disclaimed through reissue or reexamination, or held invalid or unenforceable by a court

or other government agency of competent jurisdiction, and no other Valid Claim covers the Licensed Product in the Territory, then all obligation to pay royalties based on such patent or claim will cease as of the date of such decision, provided that if such decision is vacated or overruled, royalty payments shall then be resumed.

5.8 Nanofluidics shall pay to IURTC [...***...] percent [...***...] of all Sublicensing Revenue.

5.8.1 Sublicensing Revenue is fully creditable against minimum royalties in the Calendar Year in which they were or are to be paid.

5.8.2 Sublicensing Revenue will be accumulated and reported on a Calendar Half basis. Nanofluidics will pay to IURTC sublicense fees accumulated during a Calendar Half within thirty (30) days of the end of said Calendar Half.

5.9 Nanofluidics will pay IURTC the following milestone payments:

5.9.1 A one time payment of [...***...] due after annual Net Sales equals or exceeds [...***...].

5.9.2 A one time payment of [...***...] upon regulatory approval of a Diagnostic Product.

5.10 No multiple royalty will be required to be paid because a Licensed Product or its manufacture, use, sale or importation is covered by more than one Valid Claim.

6 **Place and Method of Payment; Reports and Records; Audit; Interest**

6.1 All dollar ($) amounts referred to in this Agreement are expressed in United States dollars. All payments to IURTC shall be made in United States dollars by check or electronic transfer payable to “Indiana University Research and Technology Institute”. Any Sales revenues for Licensed Products in currency other than United States dollars shall be converted to United States dollars at the conversion rate for the foreign currency as published in the Eastern edition of The Wall Street Journal as of the last business day in the United States of the applicable Calendar Half.

6.2 Checks shall be sent to:

Indiana University Research and Technology Corporation
2455 Reliable Parkway
Chicago, IL 60686-2455

The IURTC Tech No. [...***...] and purpose of payment must be included with the check.

6.3 Wire transfer payments should be sent to:

[...***...]
[...***...]
[...***...]
[...***...]

The IURTC Tech No. [...***...] and purpose of the payment must be included with the wire transfer information. Nanofluidics must add wire transfer fees to the payment.

6.4 Nanofluidics shall deliver to IURTC, within forty-five (45) days of the end of each Calendar Half in which earned royalties and/or sublicense fees are owed and payable, a written report setting forth the calculation of the payments made to IURTC for that Calendar Half, including at least the following:

6.4.1 The number of Licensed Products sold and amount of Sales by country.

6.4.2 Gross receipts for Sales of Licensed Products including total amounts invoiced and received.

6.4.3 Deductions, as defined in Section 2.11, giving totals by each type.

6.4.4 Net Sales of Licensed Products by country.

6.4.5 Earned royalty amounts credited against minimum royalty payments or vice versa.

6.5 Nanofluidics shall maintain, and shall require its Sublicensees to maintain, complete and accurate books of account and records that would enable an independent auditor to verify the amounts paid as royalties, fees and payments under this Agreement. Nanofluidics must also require its Sublicensees to file reports to Nanofluidics to enable Nanofluidics to comply with all record keeping and reporting obligations in this Agreement. The books and records must be maintained for three years following the Calendar Half after submission of the reports required by this Article. Upon reasonable notice by IURTC, Nanofluidics must give IURTC (or auditors or inspectors appointed by and representing IURTC) access to all books and records in Nanofluidics' possession relating to Sales of Licensed Products by Nanofluidics and its Sublicensees to conduct, at IURTC's expense, an audit or review of those books and records. This access must be available at least once every six (6) months, during regular business hours, during the Term of the Agreement and for the three Calendar Years following the year in which termination or expiration occurs. Any audit or review by or on behalf of IURTC shall not extend to books and records previously examined hereunder or to books and records relating to a period more than three years prior to the audit date. However, if the audit or review reports that Nanofluidics has underpaid royalties by [...***...] or more for any Calendar Half, Nanofluidics shall reimburse IURTC for the costs and expenses of the accountants and auditors in connection with the review and audit.

6.6 Any amounts not paid by Nanofluidics to IURTC when due shall accrue interest, from the due date until payment is made, at an annual rate equal to [...***...] (or the maximum allowed by law, if less than the amount specified herein).

7 Confidentiality

7.1 Nanofluidics and IURTC will maintain in secrecy and not disclose to any third party any Confidential Information. Nanofluidics and IURTC will ensure that their respective employees have access to the Confidential Information only on a need-to-know basis and are obligated by written agreement to keep the Parties' confidentiality obligations under this Agreement. As used in this Section, IURTC is a "Disclosing Party" of its Confidential Information and a "Receiving Party" of Nanofluidics' Confidential Information, and Nanofluidics is a "Disclosing Party" of its Confidential Information and a "Receiving Party" of IURTC's Confidential Information.

7.2 The obligations of confidentiality specified in this Article will not extend to Confidential Information that:

7.2.1 Becomes part of the public domain through no fault of either Party;

7.2.2 Was known to the Recipient Party before disclosure by the Disclosing Party as established by written records in the Recipient Party's possession;

7.2.3 Comprises identical subject matter to that which had been originally and independently developed by the Recipient Party without knowledge or use of any Confidential Information; or

7.2.4 Was disclosed to the Recipient Party by a third party having a right to make the disclosure.

7.3 Notwithstanding the other terms of this Article 7, Nanofluidics may, to the extent necessary, use Confidential Information to secure governmental approval to clinically test or market a Licensed Product, to comply with a court order or governmental rule or regulation, or to show to a potential sublicensee or contractor subject to an appropriate confidentiality agreement. Nanofluidics may use and disclose Confidential Information to the extent necessary to carry out its obligations and exercise its rights under this Agreement, and (without limiting the foregoing) may disclose this Agreement to its investors and prospective investors. Nanofluidics will, in any such use, take all reasonably available steps to maintain confidentiality of the disclosed Information and to guard against any further disclosure.

7.4 IURTC also may disclose the existence of this Agreement and only to the extent of the grant in Article 3 to a third party that inquires whether a license to the Intellectual Property is available. However, IURTC shall not disclose the name of Nanofluidics as the Licensee, unless Nanofluidics has already made such disclosure publicly or unless Nanofluidics agrees in writing that IURTC may disclose such information.

8 **Representations and Warranties**

8.1 IURTC represents and warrants that:

8.1.1 It is a corporation organized, existing, and in good standing under the laws of Indiana.

8.1.2 It has the authority to enter into this Agreement and that the person signing on its behalf has the authority to do so.

8.1.3 To the best of its knowledge, it is the owner (subject to any rights retained by the U.S. government by operation of law) of the Intellectual Property licensed in this Agreement and that it has the authority to grant the licenses set forth herein.

8.1.4 To the best of its knowledge, as of the Effective Date of the Agreement, there are no threatened or pending actions, suits or claims against IURTC challenging IURTC's ownership or control of the Intellectual Property licensed in this Agreement.

8.1.5 To the best of its knowledge, all inventors named in patents within the Patent Rights have, unless indicated otherwise to the contrary, have an obligation to assign to IURTC their right, title and interest in and to the patents describing and claiming their invention(s) and have already made such an assignment.

8.1.6 It has not previously granted and will not grant during the Term, any right, license or interest in or to the Intellectual Property, or any portion thereof, inconsistent with the rights and licenses granted to Nanofluidics herein.

8.1.7 There are no threatened or pending actions, suits, claims or arbitration proceedings in any way relating to the validity or enforceability of U.S. Patent No. 6,399,335.

8.1.8 It is not a party to any agreement or arrangement that would prevent it from performing its duties and fulfilling its obligations to Nanofluidics under this Agreement.

8.2 Nanofluidics represents and warrants that:

8.2.1 It is a corporation duly organized, existing, and in good standing under the laws of Delaware.

8.2.2 The execution, delivery and performance of this Agreement have been authorized by all necessary corporate action on the part of Nanofluidics and that the person signing the Agreement on behalf of Nanofluidics has the authority to do so.

8.2.3 The making or performance of this Agreement would not violate any separate agreement it has with a third party.

8.2.4 It is not a party to any agreement or arrangement that would prevent it from performing its duties and fulfilling its obligations to IURTC under this Agreement.

8.2.5 It has, or will obtain at the time specified in Article 12, the insurance coverage called for in Article 12.

8.2.6 It will obtain any additional licenses from any third party needed to perform and fulfill its duties and obligations under this Agreement, including, but not limited to, the Development Plan.

8.2.7 There is no pending litigation and no threatened claims against it that could impair its ability or capacity to perform and fulfill its duties and obligations under this Agreement, including, but not limited to, the Development Plan.

8.3 Nothing in this Agreement shall be construed as:

8.3.1 A warranty or representation by IURTC or IU as to the validity, scope, or efficacy of Intellectual Property.

8.3.2 A grant, by implication, estoppel, or otherwise, of any licenses or rights under patents or other intellectual property rights of IURTC or other persons, other than the rights expressly granted above to Intellectual Property.

8.3.3 A grant of rights to either Party to use the name of the other in advertising, publicity, or otherwise, except as expressly authorized herein, without the written permission of the other Party.

8.3.4 A grant of rights to Licensee to use the name of IU in advertising publicity, or otherwise without the written permission of IU.

8.4 IURTC PROVIDES THE INTELLECTUAL PROPERTY “AS IS” AND MAKES NO REPRESENTATIONS AND EXTENDS NO WARRANTIES OF ANY KIND, EITHER EXPRESS OR IMPLIED. THERE ARE NO EXPRESS OR IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS OF THE INTELLECTUAL PROPERTY OR LICENSED PRODUCTS DERIVED FROM OR INCLUDING IT FOR A PARTICULAR PURPOSE, OR THAT THE USE OF THE INTELLECTUAL PROPERTY OR ANY LICENSED PRODUCT WILL NOT INFRINGE ANY PATENT, COPYRIGHT, TRADEMARK OR OTHER RIGHTS, OR ANY OTHER EXPRESS OR IMPLIED WARRANTIES. IURTC MAKES NO REPRESENTATION OR WARRANTY WITH RESPECT TO THE PERFORMANCE OF THE INTELLECTUAL PROPERTY OR ANY LICENSED PRODUCT, INCLUDING THEIR SAFETY, EFFECTIVENESS, OR COMMERCIAL VIABILITY. IURTC WILL NOT BE

LIABLE TO NANOFLUIDICS, OR ITS SUCCESSORS, ASSIGNS, CONTRACTORS, OR SUBLICENSEES, OR ANY THIRD PARTY REGARDING ANY CLAIM ARISING FROM OR RELATING TO NANOFLUIDICS' USE OF THE INTELLECTUAL PROPERTY, ANY LICENSED PRODUCT, OR FROM THE MANUFACTURE, USE, IMPORTATION OR SALE OF LICENSED PRODUCTS, OR FOR ANY CLAIM FOR LOSS OF PROFITS, LOSS OR INTERRUPTION OF BUSINESS, OR FOR INDIRECT, SPECIAL, EXEMPLARY, PUNITIVE, OR CONSEQUENTIAL DAMAGES OF ANY KIND.

9 **Application, Prosecution, and Maintenance of Patent Rights**

9.1 IURTC shall control the preparation, filing, prosecution, issue and maintenance of patents within the Patent Rights. IURTC will select qualified outside patent counsel reasonably acceptable to Nanofluidics and corresponding foreign associates to prepare, file, prosecute and maintain U.S. patents/applications and foreign counterparts within the Patent Rights. IURTC will consult with Nanofluidics regarding the prosecution of patent applications including, without limitation, by providing Nanofluidics a reasonable opportunity, and sufficiently in advance, to review and comment on proposed submissions to any patent office, before the submission is filed and will reasonably consider the advice of Nanofluidics with respect to patent prosecution. IURTC will keep Nanofluidics reasonably informed of the status of Patent Rights patents and applications by timely giving Nanofluidics copies of communications relating to such Patent Rights that are received from any patent office or outside patent counsel of record or foreign associate.

9.2 During the Term of the Agreement, Nanofluidics will reimburse IURTC for all reasonable and documented costs and expenses incurred by IURTC in the preparation, filing, prosecution, issue and maintenance of patents and applications within the Patent Rights within thirty (30) days of receipt from IURTC of copies of billing invoices for such costs and expenses; provided, however, that IURTC will have provided Nanofluidics reasonable advance notice of such activities and the estimated costs expected to be incurred if those costs exceed those specified in the IURTC Outside Counsel Guidelines, and afforded Nanofluidics the opportunity to provide input regarding such activities and estimated costs.

9.3 IURTC will diligently prosecute and maintain the applications and patents within the Patent Rights as long as Nanofluidics timely satisfies its reimbursement obligations hereunder. IURTC will prepare, file and prosecute additional applications within the Patent Rights as Nanofluidics may reasonably request, in IURTC's name at Nanofluidics' sole expense.

9.4 If Nanofluidics elects not to reimburse IURTC for any fees or expenditures relating to any Patent Rights, Nanofluidics shall give IURTC written notice of such election at least ninety (90) days in advance of the date on which such expenditure is to be made or such fee is due to be paid. Upon IURTC's receipt of such notice, the license to those patent applications or patents in the Patent Rights granted to Nanofluidics under Sections 3.1

and 3.2 for which IURTC has not been reimbursed shall be free, at IURTC's sole discretion and without any further obligation to Nanofluidics, to continue prosecution or maintenance, for IURTC's sole use and benefit or to abandon the patent applications.

9.5 Nanofluidics' failure to reimburse IURTC for patent expenses incurred in connection with filing, prosecution, issue, and maintenance of patent applications or patents in the Patent Rights without notification pursuant to Section 9.4 shall be considered a material breach subject to the termination provisions of this Agreement.

10 **Infringement, Enforcement, and Defense**

10.1 The Parties shall give prompt written notice (the "Infringement Notice") to each other of (a) any known or suspected infringement of the Intellectual Property by a third party, and (b) any claim that a Licensed Product infringes the intellectual property rights of a third party that dominate the inventions claimed in the Patent Rights patent.

10.2 In the event either party becomes aware of a suspected infringement of the Intellectual Property that is of substantial commercial significance in the Field by a third party, Nanofluidics at its sole expense may attempt to abate such suspected infringement. Nanofluidics shall have the right, but shall not be obligated, to initiate and prosecute an infringement action at its own expense, in its own name and entirely under its own direction and control. In such event, Nanofluidics shall also be entitled to all recoveries in any such action or proceeding. Nanofluidics shall consult with IURTC prior to and in conjunction with all significant issues, shall keep IURTC informed of all proceedings, and shall provide copies to IURTC of all pleadings and other papers related to such actions. IURTC will provide reasonable assistance to Nanofluidics in prosecuting any such actions, and shall lend its name to such actions or proceedings if requested by Nanofluidics or required by law. IURTC shall have the right to participate and be represented in any such actions or proceedings by its own counsel at its own expense.

10.3 Nanofluidics at its sole expense shall defend third party claims for (a) patent or intellectual property infringement and injury, and (b) death, bodily injury, property damage, damage to business, or product liability brought against Nanofluidics and IURTC arising from or relating to Intellectual Property or a Licensed Product. Nanofluidics will have the right to conduct the defense of such actions through outside counsel of its choice who are reasonably acceptable to IURTC. Nanofluidics shall consult with IURTC prior to and in conjunction with all significant issues, shall keep IURTC informed of all proceedings, and shall provide copies to IURTC of all pleadings, legal analyses, and other papers related to such actions. IURTC will provide reasonable assistance to Nanofluidics in defending any such actions. In such event, Nanofluidics shall also be entitled to all recoveries in any such actions.

10.4 Notwithstanding anything herein to the contrary and absent IURTC's prior written consent, Nanofluidics shall not settle or compromise any claim or action in a manner that imposes restrictions or obligations on IURTC, requires any financial payment by IURTC, or grants rights or concessions to a third party to Intellectual Property or a Licensed Product.

10.5 Nanofluidics will be entitled to offset against royalties and fees due under Sections 5.4 and 5.5 fifty percent (50%) of its reasonable and necessary attorney's fees and expenses incurred in abating, bringing, or defending against third party claims of infringement or unfair trade practices against Intellectual Property, or in bringing or defending an action against a third party under this Article, provided, however, that in no event shall the royalty and fee payments due to IURTC be reduced by more than fifty percent (50%) in any Calendar Year.

10.6 If Nanofluidics fails or declines to take any action under Section 10.2 within a reasonable time after learning of third party infringement or unfair trade practices, IURTC shall have the right, but not the obligation, to take appropriate actions against any such third party at its own expense. If Nanofluidics fails to defend a claim or action under Section 10.3 within twenty (20) days of learning of the same, IURTC may assume the defense at its own expense for the account of and at the risk of Nanofluidics and any resulting liability will be deemed conclusively to be a liability of Nanofluidics.

11 **Indemnification.**

11.1 Nanofluidics shall indemnify, defend, and hold harmless IURTC, its Board of Directors, and employees, IU's faculty, staff, employees, students, and IURTC and IU's successors, assigns, and agents (collectively, "IURTC Indemnitees") from and against any and all judgments, liabilities, losses, damages, actions, claims, or expenses (including all attorney's fees and costs incurred by IURTC Indemnitees) arising out of, relating to, or incidental to (a) the use of any Intellectual Property in the design, development, production, manufacture, sale or offer for sale, use, importation, lease, marketing or promotion of any Licensed Product by Nanofluidics or its contractors, employees, Sublicensees, assigns, or agents, (b) injury or death to any person, damage to property, or any injury to business, including, but not limited to, business interruption or damage to reputation, arising out of, relating to, or incidental to the use of Intellectual Property or a Licensed Product, (c) any third party claim that any use or licensing of Intellectual Property or development of Licensed Products by Nanofluidics violates or infringes a third party's intellectual property rights.

11.2 Nanofluidics' indemnification obligations shall not apply to any liability, damage, loss or expense to the extent that it is attributable to (a) the willful misconduct of the IURTC Indemnitees, or (b) any breach of IURTC's warranties or obligations under this Agreement.

12 **Insurance**

12.1 Nanofluidics will at all times comply, through insurance or self-insurance, with all statutory workers' compensation and employers' liability requirements covering all employees with respect to activities undertaken in performance of this Agreement. This requirement may be met by insurance or self-insurance coverage provided to Nanofluidics by a Sublicensee.

12.2 In addition to the foregoing, Nanofluidics will at appropriate times obtain and maintain occurrence-based Broad Form Comprehensive General Liability (BFCGL) insurance with a reputable and financially secure insurance carrier(s). The BFCGL insurance will include, among all other coverages standing in such BFCGL policies, coverage for product liability and contractual liability.

12.3 The insurance policy shall identify IURTC as an additional insured and shall provide to Nanofluidics, its Affiliates, for the express benefit and protection of IURTC Indemnitees and in order to satisfy Nanofluidics' indemnity obligations in Article 11, minimum annual limits of [...***...].

12.4 Insurance policies purchased to comply with this Article shall be kept in force for two years after the last sale the last Licensed Product is sold.

12.5 Nanofluidics will provide IURTC with a certificate of insurance and notices of subsequent renewals. The certificates and policies must provide that Nanofluidics' carrier will notify IURTC in writing at least thirty (30) days prior to cancellation or material change in coverage.

12.6 The specified minimum coverages do not constitute a limitation on Nanofluidics' obligation to indemnify IURTC under this Agreement.

13 **Termination**

13.1 Nanofluidics may terminate this Agreement with or without cause on ninety (90) days advance written notice to IURTC. The license rights granted in Article 3 shall terminate at the end of the 90-day period.

13.2 IURTC may terminate this Agreement as provided in Article 4.5 for Nanofluidics' failure to [...***...].

13.3 Subject to Section 13.3.8, IURTC may terminate this Agreement on sixty (60) days advance written notice to Nanofluidics upon Nanofluidics' material breach of the Agreement. The termination becomes effective at the end of the sixty-day period unless Nanofluidics has fully cured the breach within that time. A material breach includes, but is not limited to, material failure of one or more of the following:

13.3.1 Failure to pay timely any fee, royalty, or other payment required under this Agreement.

13.3.2 Failure to keep accurate and complete books and records, failure to require that Sublicensees keep accurate books and records, and failure to allow reasonable audit and inspection, all as required by Article 6.

13.3.3 Failure to comply with the confidentiality requirements of Article 7.

13.3.4 Failure to obtain, maintain, and/or timely report levels of insurance, as required in Article 12.

13.3.5 Breach or falsity of any of Nanofluidics' representations or warranties made in this Agreement.

13.3.6 Failure to indemnify in accordance with Article 11 of this Agreement.

13.3.7 Failure to include all necessary and required terms in all sublicenses, or inclusion of any prohibited terms.

13.3.8 Notwithstanding the foregoing, if Nanofluidics disputes that it is in breach concerning the amount of payment to be made hereunder (for purpose of clarity, the breach concerning the amount of payment to be made as used in this Section 13.3.8 does not include the situation in which Nanofluidics refuses to make any payment under this Agreement), IURTC shall not have the right to terminate this Agreement unless it has been determined in an arbitration proceeding that this Agreement was breached, and Nanofluidics fails to cure such breach within sixty (60) days after such determination. The Parties agree that the arbitration proceeding shall be conducted by a sole arbitrator selected by the Parties in accordance with the licensing rules of the American Arbitration Association, and be completed within thirty (30) days. During the arbitration proceeding, each party shall submit a proposal setting forth the terms of a proposed resolution. The arbitrator is empowered only to select one of the proposed resolutions in whole. The arbitrator may not modify the terms of this Agreement. The award rendered thereon by the arbitrator shall be final and binding on the Parties thereto. In the event that Nanofluidics is found in such arbitration proceeding to be in breach for failure to fulfill its payment obligations under this Agreement, Nanofluidics shall cure such breach by paying the damage owed to IURTC with interest at the rate set forth in Section 6.6, and by reimbursing IURTC the attorney's fees that IURTC incurred in the arbitration proceeding.

13.4 If Nanofluidics enters bankruptcy or receivership, voluntarily or involuntarily, all obligations of IURTC and all rights (but not obligations) of Nanofluidics terminate immediately without the need for either IURTC or Nanofluidics to take any action.

13.5 Upon the date of termination of this Agreement for any reason, Nanofluidics shall return, and shall cause all Sublicensees, if sublicensing agreements are also terminated, to return to IURTC all Confidential Information of IURTC (as defined in Article 7) received during the Term of this Agreement.

13.6 As of the date of termination of this Agreement by either Party for any reason pursuant to the terms herein, all license rights granted to Nanofluidics under Article 3 shall terminate. Nanofluidics' obligations to pay fees, royalties, or other payments and patent expenses (Article 10) accruing prior to termination shall survive termination.

14 **Use of Names:** Neither Party may use the name of the other for any commercial, advertisement, or promotional purpose without the prior written consent of the other. Nanofluidics may not use the name of IU for any commercial, advertisement, or promotional purpose without the prior written consent of IU.

15 **Assignment or Pledge of the Agreement:** This Agreement, in whole or in part, shall not be assigned by either Party to any third party without the written consent of the non-assigning Party. However, Nanofluidics may assign the entire Agreement, without IURTC's consent, to a third party that acquires substantially all of Nanofluidics' business or assets through merger, sale, acquisition, or other similar transaction, provided that the successor agrees in writing (with a copy of such assent to IURTC within ten (10) days of the effective date of the transaction) to assume all obligations and liabilities of Nanofluidics to IURTC. The rights granted in this Agreement may not be pledged or hypothecated in any way by Nanofluidics or any Sublicensee to secure any purchase, lease, or loan.

16 **Notice:** Any required or permissive notice under this Agreement will be sufficient if in writing and delivered personally, by recognized national overnight courier, or by registered or certified mail, postage prepaid and return receipt requested, to the address below and will be deemed to have been given as of the date shown on the receipt if by certified or registered mail, or the day following dispatch if by overnight courier.

If to IURTC:

Vice President of Technology Transfer
Attn: IURTC Tech No. 0009
Indiana University Research and Technology Corporation
351 W. 10th Street
Indianapolis, IN 46202

If to Nanofluidics:

[...***...]
Nanofluidics, Inc.
1505 Adams Drive
Menlo Park, CA 94025

Cc: [...***...]
Wilson Sonsini Goodrich and Rosati
650 Page Mill Road
Palo Alto, CA 94304

17 **General Provisions**

17.1 This Agreement shall be governed by and interpreted according to the laws of the State of Indiana.

17.2 No waiver of any breach of this Agreement shall constitute a waiver of any other breach of the same or any other provision of this Agreement, and no waiver shall be effective unless made in writing by the Party against whom the waiver is sought to be asserted.

17.3 The Parties acknowledge that they have read this Agreement in its entirety and agree that this instrument comprises the entire agreement, contract, and understanding of the Parties relating to the subject matter of the Agreement.

17.4 This Agreement cannot be changed, modified or amended except by a written instrument subscribed by authorized representatives of the respective Parties.

17.5 Neither Party is an agent or contractor of the other as a result of any transaction under or related to this Agreement. Neither Party may in any way pledge the other Party's credit or incur any obligation on behalf of the other Party.

17.6 IURTC shall not be liable to Nanofluidics for any special, consequential, incidental, or indirect damages arising out of or relating to this Agreement, however caused, under any theory of liability.

17.7 The provisions of this Agreement are severable in that if any provision in the Agreement is finally determined by a court of competent jurisdiction to be invalid or unenforceable, the remaining provisions of the Agreement shall remain in full force and effect.

17.8 If the performance of any obligation under this Agreement is prevented or impaired by acts of war, riot, acts or defaults of common carriers, or governmental laws or regulations, a Party will be excused from performance so long as such cause continues to prevent or impair that Party's performance. The Party claiming such force majeure excuse must promptly notify the other Party of the existence of the cause and must at all times use diligent efforts to resume and complete performance. This Section 18.8 will not excuse Nanofluidics' obligation to pay fees, payments and royalties under Article 5 of the Agreement.

17.9 IURTC has no responsibility and assumes no liability for product design, development, pre- or post-market regulatory approval, servicing, distribution, or marketing of any Licensed Product, or for any decisions made or strategies devised relating to any Licensed Product.

17.10 Nanofluidics agrees, that in the event an IU faculty or staff member serves Nanofluidics or any sublicensee in the capacity of consultant, officer, employee, board member, advisor, or other designation, pursuant to contract or otherwise, such IU faculty or staff member shall serve in his or her individual capacity, as an independent contractor, and

not as an agent or representative of IURTC or IU, that IURTC or IU exercises no authority or control over such faculty or staff member while acting in such capacity, that IURTC or IU receives no benefit from such activity, and that IURTC or IU assume no liability or obligation in connection with any such work or service undertaken by such faculty or staff member. Nanofluidics further agrees that any breach, error, or omission by an IU faculty or staff member acting in the capacity set forth above in this paragraph shall not be imputed or otherwise attributed to IURTC or IU, and shall not constitute a breach of this Agreement by IURTC.

17.11 All representations, warranties, covenants, and agreements made herein that, by their express terms or by implication, are to be performed after the execution or termination of this Agreement, or are prospective in nature, shall survive such execution and/or termination, as the case may be. This shall include, but not be limited to, the provisions in Articles 5, 6, 7, 8, 11, 12 and 14.

17.12 Each Party shall, at the reasonable request of the other, execute and deliver to the other such instruments and/or documents and shall take such actions as may be required to more effectively carry out the terms of this Agreement.

17.13 This Agreement may be executed in counterparts, each of which shall be deemed an original and all of which when taken together shall be deemed one instrument.

17.14 This Agreement may be executed in counterparts, each of which shall be deemed an original and all of which when taken together shall be deemed one instrument.

Witness: The Parties have caused this Agreement to be executed in duplicate by their duly qualified representatives.

Nanofluidics, Inc.	**IURTC**
/s/ Stephen Turner, Ph.D.	/s/ Jack H. Pincus, Ph.D.
Signature	**Signature**
Stephen Turner, Ph.D.	Jack H. Pincus, Ph.D.
Name	**Name**
CTO	Vice President of Technology Transfer Indiana University Research & Technology Corporation
Title	**Title**
6/14/05	6/15/05
Date	**Date**

*** Confidential Treatment Requested

PACIFIC BIOSCIENCES OF CALIFORNIA, INC.

EMPLOYMENT AGREEMENT

This Employment Agreement (the "**Agreement**") is entered into as of September 16, 2010 (the "**Effective Date**") by and between Pacific Biosciences of California, Inc. (the "**Company**") and Hugh Martin ("**Executive**").

1. Duties and Scope of Employment.

(a) Position and Duties. As of the Effective Date, Executive will continue to serve as the Company's Chief Executive Officer and President. 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 Company's Board of Directors (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 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.

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 8 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 three hundred thousand dollars ($300,000). 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 2012.

(b) Bonus. Executive will be eligible to participate in any bonus plans or programs maintained from time to time by the Company on such terms and conditions as determined by the Board. Any bonus, or any portion thereof, will be paid as soon as practicable after the Board 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) Stock Options.

(i) First Option. On August 12, 2010 the Board granted Executive a stock option to purchase 500,000 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 "**First Option**"). The First Option will vest as to twenty percent (20%) of the Shares subject to the First Option on the one (1) year anniversary of August 12, 2010, and as to 1/60th of the Shares subject to the First Option monthly thereafter, so that the First Option will be fully vested and exercisable five (5) years from August 12, 2010, subject to Executive continuing to provide services to the Company through the relevant vesting dates.

(ii) Second Option. Effective on the date of the Company's initial public offering of its Shares (the "**IPO**"), subject to Executive's continued employment through the IPO, Executive will be granted a stock option to purchase 300,000 Shares at an exercise price per Share equal to the fair market value of a Share on the date of grant which shall be the initial price to the public as set forth in the final prospectus included within the registration statement on Form S-1 filed with the Securities and Exchange Commission for the IPO (the "**Second Option**"). The Second Option will vest upon achievement of certain performance targets in 2011 and 2012, as established by the Board, based on the Company's operating plan for fiscal years 2011 and 2012. Executive will not be eligible to earn any portion of the Second Option until after the Company completes its determination of the results for fiscal 2011, as approved by the Board. Executive will be eligible to earn up to fifty percent (50%) of the Shares subject to the Second Option based on the Company's performance in fiscal 2011 and up to fifty percent (50%) of the Shares subject to the Second Option based on the Company's performance in fiscal 2012.

(iii) The First Option is subject to the terms and conditions of the Company's 2005 Equity Incentive Plan and stock option agreements by and between Executive and the Company. The Second Option will be subject to the terms and conditions of the Company's 2010 Equity Incentive Plan and stock option agreements by and between Executive and the Company.

(d) 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 Executive's accrued but unpaid 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 9(b) below, Executive will be entitled to:

(i) A lump sum payment equal to six (6) 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 six (6) months of Executive's Base Salary as in effect immediately prior to such Base Salary reduction), less applicable withholding taxes, 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 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) Termination for Cause, Death or Disability; Resignation without Good Reason. 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. Non-Duplication of Benefits. 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 8 of this Agreement and, in such case, Executive will be entitled to no payments or benefits under Section 8 of this Agreement.

11. Conditions to Receipt of Severance.

(a) Release of Claims Agreement. 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 (60th) 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 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 8 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 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 (60th) 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 (60th) 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 8 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 Employee'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 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 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.

(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 Employment Agreement entered into between Executive and the Company dated March 13, 2004, as amended December 17, 2008. 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, including, but not limited to, Section 16 regarding arbitration, 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 Date: 9/17/10
Susan Barnes

Title: Chief Financial Officer

EXECUTIVE:

/s/ Hugh Martin Date: 9/1710
Hugh Martin

Exhibit 10.18

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 Hugh Martin ("*Executive*") and Pacific Biosciences of California, Inc., a Delaware corporation (the "*Company*"), effective as of September 16, 2010 (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 6 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, 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 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 6(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.

(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 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 (60th) day following Executive's separation from service, or, if later, such time as required by Section 4(c)(iii). Except as required by Section 4(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 (60th) 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, 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 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 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-l(b)(9)(iii)(A)(l) 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 7(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 8(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 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 Employment Agreement entered into between Executive and the Company dated March 13, 2004, as amended December 17, 2008. 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.

o O o

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

Title: Chief Financial Officer

EXECUTIVE

By: /s/ Hugh C. Martin

Title: President and Chief Executive Officer

Exhibit 10.19

September 15, 2010

Susan K. Barnes
c/o Pacific Biosciences, Inc.
1380 Willow Road
Menlo Park, CA 94025

Re: Letter Relating to Employment Terms

Dear Susan:

This letter is to confirm the terms of your employment with Pacific Biosciences, Inc. (the ***"Company"***). This letter supersedes all prior agreements relating to the terms of your employment, except for the Change in Control Severance Agreement dated September 9, 2010, between you and the Company (the ***"Severance Agreement"***) and the Pacific Biosciences At-Will Employment, Confidential Information, Invention Assignment and Arbitration Agreement dated February 22, 2010, between you and the Company (the ***"Confidentiality Agreement"***). This letter reflects the terms that are in effect as of September 15, 2010 (the ***"Effective Date"***).

1. Title and Cash Compensation

Your title is, and shall remain, Senior Vice President and Chief Financial Officer. In your capacity as Senior Vice President and Chief Financial Officer, you will continue to report to the Chief Executive Officer and President. As of the Effective Date, your base salary is $300,000 on an annualized basis.

2. Bonus Compensation

In addition to your base salary, you will be eligible for an annual incentive cash award, as determined by the Company. For calendar year 2010, you are eligible to receive a bonus of $18,270 plus up to 40% of your base salary as of the Effective Date, pro-rated for the portion of the year covered by our incentive plan. The target bonus and its components, the Company performance objectives, and your individual objectives shall be determined each year by the Compensation Committee of the Board of Directors (the ***"Compensation Committee"***) in consultation with the CEO.

3. Equity Awards

The Company may grant equity awards to you from time to time, which will be subject to the terms of the applicable equity compensation plan or arrangement in effect at the time of grant. The Compensation Committee will determine in its discretion whether you will be granted any such equity awards and the terms and conditions of any such awards in accordance with the terms of any applicable equity plan.

You should be aware that you may incur federal and state income taxes as a result of your receipt or the vesting of any equity compensation awards and it shall be your responsibility to pay any such applicable taxes.

4. Other Benefits

As an employee, you will continue to be eligible to receive our standard employee benefits, except to the extent that this letter agreement provides you with more valuable benefits than the Company's standard policies.

5. Additional Terms

You should be aware that your employment with the Company is for no specified period and constitutes "at will" employment. As a result, you are free to resign at any time, for any reason or for no reason. Similarly, the Company is free to conclude its employment relationship with you at any time, with or without cause, subject to the severance obligations under or referred to in this letter.

Please review these terms to make sure they are consistent with your understanding. If so, please send the original signed offer letter to Mary Corbett no later than two days after your receipt of this letter.

Sincerely,

Pacific Biosciences, Inc.

By: /s/ Hugh C. Martin
Hugh C. Martin
Chairman, CEO and President

AGREED:

Signed: /s/ Susan K. Barnes
Susan K. Barnes

Dated: Sept 16, 10

Exhibit 10.20

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 Susan K. Barnes ("*Executive*") and Pacific Biosciences of California, Inc., a Delaware corporation (the "*Company*"), effective as of September 9, 2010 (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 6 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 thud 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 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 6(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.

(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. 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 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 (60th day) following Executive's separation from service, or, if later, such time as required by Section 4(c)(iii). Except as required by Section 4(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 (60th 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.

5. 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 *5*, 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 5 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 5, 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 5.

6. 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, 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-l(b)(9)(iii)(A)(l)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.

7. 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 7(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.

8. 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 8(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.

9. 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 accelerated vesting of any equity awards upon certain terminations within 12 months following a change of control of the Company), 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.

o O o

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/ Susan K. Barnes
Susan K. Barnes

Title: Senior Vice President & Chief Financial Officer

September 15, 2010

Stephen Turner
c/o Pacific Biosciences, Inc.
1380 Willow Road
Menlo Park, CA 94025

Re: Letter Relating to Employment Terms

Dear Steve:

This letter is to confirm the terms of your employment with Pacific Biosciences, Inc. (the "***Company***"). This letter supersedes all prior agreements relating to the terms of your employment, except for the Change in Control Severance Agreement dated September 9, 2010, between you and the Company (the "***Severance Agreement***") and the Proprietary Information and Inventions Agreement dated March 3, 2004, between you and the Company (the "***Confidentiality Agreement***"). This letter reflects the terms that are in effect as of September 15, 2010 (the "***Effective Date***").

1. Title and Cash Compensation

Your title is, and shall remain, Vice President and Chief Technology Officer. In your capacity as Vice President and Chief Technology Officer, you will continue to report to the Chief Executive Officer and President. As of the Effective Date, your base salary is $275,000 on an annualized basis.

2. Bonus Compensation

In addition to your base salary, you will be eligible for an annual incentive cash award, as determined by the Company. For calendar year 2010, you are eligible to receive a bonus of up to 30% of your base salary as of the Effective Date, pro-rated for the portion of the year covered by our incentive plan. The target bonus and its components, the Company performance objectives, and your individual objectives shall be determined each year by the Compensation Committee of the Board of Directors (the "***Compensation Committee***") in consultation with the CEO.

3. Equity Awards

The Company may grant equity awards to you from time to time, which will be subject to the terms of the applicable equity compensation plan or arrangement in effect at the time of grant. The Compensation Committee will determine in its discretion whether you will be

granted any such equity awards and the terms and conditions of any such awards in accordance with the terms of any applicable equity plan.

You should be aware that you may incur federal and state income taxes as a result of your receipt or the vesting of any equity compensation awards and it shall be your responsibility to pay any such applicable taxes.

4. Other Benefits

As an employee, you will continue to be eligible to receive our standard employee benefits, except to the extent that this letter agreement provides you with more valuable benefits than the Company's standard policies.

5. Additional Terms

You should be aware that your employment with the Company is for no specified period and constitutes "at will" employment. As a result, you are free to resign at any time, for any reason or for no reason. Similarly, the Company is free to conclude its employment relationship with you at any time, with or without cause, subject to the severance obligations under or referred to in this letter.

Please review these terms to make sure they are consistent with your understanding. If so, please send the original signed offer letter to Mary Corbett no later than two days after your receipt of this letter.

Sincerely,

Pacific Biosciences, Inc.

By: /s/ Hugh C. Martin
Hugh C. Martin
Chairman, CEO and President

AGREED:

Signed: /s/ Stephen Turner
Stephen Turner

Dated: Sept 17, 2010

Exhibit 10.22

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 Stephen Turner ("*Executive*") and Pacific Biosciences of California, Inc., a Delaware corporation (the "*Company*"), effective as of September 9, 2010 (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 6 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, 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 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 6(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.

(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. 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 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 (60th) day following Executive's separation from service, or, if later, such time as required by Section 4(c)(iii). Except as required by Section 4(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 (60th) 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-l(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.

5. 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 5, 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 5 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 5, 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 5.

6. 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, 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-l(b)(9)(iii)(A)(l) 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.

7. 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 7(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.

8. 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 8(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.

9. 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 accelerated vesting of any equity awards upon certain terminations within 12 months following a change of control of the Company), 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.

o O o

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/ Stephen Turner
Stephen Turner

Title: Vice President & Chief Technology Officer

Exhibit 10.23

September 15, 2010

James Michael Phillips
c/o Pacific Biosciences, Inc.
1380 Willow Road
Menlo Park, CA 94025

Re: Letter Relating to Employment Terms

Dear Michael:

This letter is to confirm the terms of your employment with Pacific Biosciences, Inc. (**the *"Company"***). This letter supersedes all prior agreements relating to the terms of your employment, except for the Change in Control Severance Agreement dated September 9, 2010, between you and the Company (the ***"Severance Agreement"***) and the At-Will Employment, Confidential Information, Invention Assignment and Arbitration Agreement dated April 18, 2005, between you and the Company (the ***"Confidentiality Agreement"***). This letter reflects the terms that are in effect as of September 15, 2010 (the ***"Effective Date"***).

1. Title and Cash Compensation

Your title is, and shall remain, Senior Vice President, Research & Development. In your capacity as Senior Vice President, Research & Development, you will continue to report to the Chief Executive Officer and President. As of the Effective Date, your base salary is $270,000 on an annualized basis.

2. Bonus Compensation

In addition to your base salary, you will be eligible for an annual incentive cash award, as determined by the Company. For calendar year 2010, you are eligible to receive a bonus of $20,000 plus up to 40% of your base salary as of the Effective Date, pro-rated for the portion of the year covered by our incentive plan. The target bonus and its components, the Company performance objectives, and your individual objectives shall be determined each year by the Compensation Committee of the Board of Directors (the ***"Compensation Committee"***) in consultation with the CEO.

3. Equity Awards

The Company may grant equity awards to you from time to time, which will be subject to the terms of the applicable equity compensation plan or arrangement in effect at the time of grant. The Compensation Committee will determine in its discretion whether you will be granted any such equity awards and the terms and conditions of any such awards in accordance with the terms of any applicable equity plan.

You should be aware that you may incur federal and state income taxes as a result of your receipt or the vesting of any equity compensation awards and it shall be your responsibility to pay any such applicable taxes.

4. Other Benefits

As an employee, you will continue to be eligible to receive our standard employee benefits, except to the extent that this letter agreement provides you with more valuable benefits than the Company's standard policies.

5. Additional Terms

You should be aware that your employment with the Company is for no specified period and constitutes "at will" employment. As a result, you are free to resign at any time, for any reason or for no reason. Similarly, the Company is free to conclude its employment relationship with you at any time, with or without cause, subject to the severance obligations under or referred to in this letter.

Please review these terms to make sure they are consistent with your understanding. If so, please send the original signed offer letter to Mary Corbett no later than two days after your receipt of this letter.

Sincerely,

Pacific Biosciences, Inc.

By: /s/ Hugh C. Martin
Hugh C. Martin
Chairman CEO and President

AGREED:

Signed: /s/ James Michael Phillips
James Michael Phillips

Dated: 9/16/2010

Exhibit 10.24

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 James Michael Phillips ("*Executive*") and Pacific Biosciences of California, Inc., a Delaware corporation (the "*Company*"), effective as of September 9, 2010 (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 6 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, 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 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 6(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.

(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. 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 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 (60th) day following Executive's separation from service, or, if later, such time as required by Section 4(c)(iii). Except as required by Section 4(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 (60th) 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-l(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.

5. 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 5, 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 5 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 5, 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 5.

6. 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, 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-l(b)(9)(iii)(A)(l) 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.

7. 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 7(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.

8. 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 8(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.

9. 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 accelerated vesting of any equity awards upon certain terminations within 12 months following a change of control of the Company), 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.

o O o

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/ James Michael Phillips
James Michael Phillips

Title: Senior Vice President, Research & Development

Exhibit 23.1

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We hereby consent to the use in this Amendment No. 1 to the Registration Statement on Form S-1 of our report dated August 16, 2010 relating to the financial statements of Pacific Biosciences of California, Inc., which appears in such Registration Statement. We also consent to the reference to us under the heading “Experts” in such Registration Statement.

/s/ PricewaterhouseCoopers LLP

PricewaterhouseCoopers LLP
San Jose, California
September 17, 2010

September 17, 2010

VIA EDGAR AND OVERNIGHT DELIVERY

Securities and Exchange Commission
Division of Corporation Finance
100 F Street, N.E.
Washington, D.C. 20549-3720

Attention: Russell Mancuso, Branch Chief
David Burton, Staff Accountant
Kevin Vaughn, Accounting Branch Chief
Celia Soehner, Attorney
Tim Buchmiller, Senior Attorney

Re: Pacific Biosciences of California, Inc.
Registration Statement on Form S-1
Filed on August 16, 2010
File No. 333-168858

Ladies and Gentlemen:

On behalf of Pacific Biosciences of California, Inc. (the "**Company**"), we submit this letter in response to comments from the staff (the "**Staff**") of the Securities and Exchange Commission (the "**Commission**") received by letter dated September 10, 2010, relating to the Company's Registration Statement on Form S-1 (File No. 333-168858) filed with the Commission on August 16, 2010.

The Company is concurrently filing via EDGAR Amendment No. 1 to the Registration Statement. For the convenience of the Staff, we are enclosing herewith marked copies, complete with exhibits, of Amendment No. 1.

In this letter, we have recited the comments from the Staff in italicized, bold type and have followed each comment with the Company's response thereto.

1. ***Please confirm that any preliminary prospectus you circulate will include all non-Rule 430A information. This includes the price range and related information based on a* bona fide *estimate of the public offering price within that range, and other information that was left blank throughout the document. Please note that we may have additional comments after you file this information and missing exhibits.***

The Company respectfully acknowledges the Staff's comment and confirms that any preliminary prospectus that it circulates will include all non-Rule 430A information, including the price range and related information based on a *bona fide* estimate of the public offering price range within that range.

Table of Contents, page 2

2. We note your disclosure in the last sentence of the last paragraph. Please tell us why it is appropriate to shift the burden to investors of informing themselves of any restrictions relating to your offering and the distribution of your prospectus. Please ensure that you have disclosed all applicable restrictions and to whom those restrictions apply.

The Company respectfully acknowledges the Staff's comment and advises the Staff that the Company does not anticipate making this offering or distributing the prospectus in any jurisdiction where action for that purpose is required, other than the United States. However, the Company may not be able to control how the prospectus is distributed after its initial distribution by the Company or the underwriters, and it is possible that the prospectus may be received by investors in foreign jurisdictions where additional action is required. Because it is impossible to know all the foreign jurisdictions in which the prospectus may be distributed, the Company believes it is appropriate to shift the burden to foreign investors of informing themselves of any restrictions relating to the offering and the distribution of the prospectus. The Company respectfully advises the Staff that it has disclosed all applicable restrictions and to whom such restrictions apply with respect to investors in the United States. The Company has revised the language on page i to clarify that this pertains only to investors residing outside of the United States.

Graphics

3. If you elect to retain the narrative disclosure accompanying your graphics on the front and back cover, please also present a balanced portrayal of your company and business such as by also noting the business risks or challenges. If such balancing disclosure is inappropriate for your graphics, please relocate the narrative disclosure to a more appropriate section of your prospectus where you can present balanced disclosure.

In response to the Staff's comment and based on our conversation with the Staff, the Company has revised the graphics on the front and back cover of the prospectus.

Prospectus Summary, page 1

4. Please substantially revise your disclosure in this section to avoid vague statements and instead describe your business and industry in concrete, everyday terms. We note as examples your statements that "[your] mission is to transform the way humankind acquires, processes and interprets data from living systems. . ." and your belief that "[y]our SMRT platform represents a new paradigm in biological science . . . that has the potential to significantly impact a number of areas critical to humankind . . . ." Please also apply this comment to your disclosure in your "Business" section starting on page 49.

The Company respectfully acknowledges the Staff's comment and has revised the disclosure in the Prospectus Summary section on page 1 and the Business section starting on page 53 as requested to eliminate the vague statements and provide more concrete, everyday terms.

5. ***Please also revise your disclosure to avoid the use of undefined scientific or technical terms; we note as examples your references to "PCR amplification," "flush and scan method," "DNA methylation," and "ligand binding." If you must include technical terms that may be unfamiliar to individuals who are not experts in your industry, please explain such terms concisely at the time of first use.***

The Company respectfully acknowledges the Staff's comment and has revised the disclosure in this section and throughout the prospectus to define scientific or technical terms at the time of first use.

6. ***Please tell us how your statements regarding the feasibility and superiority of your technology are reconcilable with your disclosure on page 10 that your products involve "unproven . . . technology."***

In response to the Staff's comment, the Company advises the Staff that it has revised the disclosure in the risk factor on page 11 and throughout the prospectus to clarify that the Company's technology is not unproven. Since the Company's technology has been proven to deliver certain capabilities as evidenced by peer-reviewed publications and copies of limited production release customer acceptances, copies of which are provided to the Staff supplementally in response to Comments 11 and 50, the original disclosure on page 11 was incorrect. The Company has retained the disclosure of risk associated with the fact that its technology is highly complex and the support requirements are largely unknown.

7. ***Please provide us independent, objective support for the following statements:***

- ***that you "have developed a novel approach to studying the synthesis and regulation of DNA, RNA and protein" (page 1);***
- ***that the design of your system "should facilitate rapid adoption" (page 1);***
- ***that your SMRT platform ". . . has the potential to significantly impact a number of areas . . . including the diagnosis and treatment of disease as well as efforts to improve the world's food and energy supply" (page 1);***
- ***your belief that "the long readlengths produced by the PacBio RS will allow insights into biology that are not possible with existing technologies" (page 3); and***
- ***that your "system is easy to use and adopt" and that sample preparation is "simple and fast" (page 3).***

The Company is supplementally providing the Staff with the peer-reviewed papers entitled "Real-Time DNA Sequencing from Single Polymerase Molecules," *Science*, January 2009, Vol. 323, and "Direct

detection of DNA methylation during single-molecule, real-time sequencing," *Nature Methods*, June 2010, Vol. 7, No. 6, which provide independent, objective support for the Company's statement that it has developed a novel approach to studying the synthesis and regulation of DNA. Although these papers were co-authored by employees of the Company, the publication process for top-tier scientific journals in which these papers appear involves an extensive peer review process. The Company advises the Staff that it has removed the reference to RNA and protein in the "Overview" sections of the prospectus, and directs the Staff to its response to Comment 14, which provides independent, objective support for the Company's statement that the SMRT technology also enables the study of RNA and protein.

Further, in response to the Staff's comment, the Company has removed the disclosure that the design of its system "should facilitate rapid adoption" and that its SMRT platform " . . . has the potential to significantly impact a number of areas . . . including the diagnosis and treatment of disease as well as efforts to improve the world's food and energy supply."

The Company is supplementally providing the Staff with a scientific paper titled "Structural Variation of the Human Genome," *Annual Review of Genomics and Human Genetics*, 2006, Vol 7 that provides independent, objective support for the Company's belief that "the long readlengths produced by the PacBio *RS* will allow insights into biology that are not possible with existing technologies."

Lastly, the Company has revised its disclosure on page 4 and throughout the prospectus to disclose that it believes that its system is easy to use and adopt and that sample preparation is designed to be simple and fast. The Company has received confidential feedback from its limited production release customers that support these statements and can provide these to the Staff on a confidential basis upon request.

Overview, page 1

8. Please balance your disclosure in the opening paragraphs by disclosing that you have generated no revenue from product sales to date, as discussed at the bottom of page 9, and to clarify that you currently have no commercial products available. Please clarify that all of your revenues to date have been derived from government grants.

The Company respectfully acknowledges the Staff's comment and has revised the disclosure on pages 1, 3 and 53 as requested.

9. Please revise your disclosure here and under the overview of your Business section on page 49 to clarify the nature of your technology by discussing the constituent components of your system. For example, what does your system incorporate by way of specific hardware, software, chemicals and biological products, and how do these parts interact when the product is functioning? Also clarify in an appropriate section of your document which constituent components are proprietary or covered by patents and which are licensed from a third party.

The Company respectfully acknowledges the Staff's comment and has revised the disclosure on pages 1 and 53 to clarify the nature of its technology by discussing the constituent components of its system. The Company respectfully advises the Staff that it has provided disclosure in paragraphs 2, 4, 5, 6 and 7 in the Intellectual Property section starting on page 67 to disclose which constituent components are proprietary or covered by patents and which are licensed from a third party. In general, each of the Company's products is covered by multiple patents or pending patent applications that it owns or licenses from third parties.

10. Please revise to clarify what you mean by "our consumables," as discussed in the second paragraph under this section.

The Company respectfully acknowledges the Staff's comment and has revised the disclosure in this section as requested.

11. Please provide us with the peer reviewed articles mentioned in this section.

The Company respectfully acknowledges the Staff's comment and is supplementally providing the Staff with the peer reviewed articles mentioned in this section, including (i) "Real-time tRNA transit on single translating ribosomes at codon resolution," *Nature*, April 2010, Vol. 464, (ii) "Real-Time DNA Sequencing from Single Polymerase Molecules," *Science*, January 2009, Vol. 323, and (iii) "Direct detection of DNA methylation during single-molecule, real-time sequencing," *Nature Methods*, June 2010, Vol. 7, No. 6.

12. We note your disclosure that your product enables the study of RNA and protein synthesis and regulation. Please clarify if the products you intend to launch for commercial use will have the ability to study RNA and protein synthesis and regulation. Please clarify in an appropriate location what you mean by protein regulation.

The Company respectfully acknowledges the Staff's comment and has revised the disclosure by removing the reference to RNA and protein in the "Overview" section of the prospectus. The Company advises the Staff that clarification of the term "protein regulation" is not required because the term is no longer used in the prospectus.

13. We note your disclosure that your SMRT technology enables "real-time" analysis of biomolecules with "single molecule resolution." We also note that after the tagged nucleotide is imaged, the image then has to be processed and the order of the various DNA strands being studied has to be reassembled using further computational efforts before the results can be read. In this regard, please clarify how your technology enables "real-time" analysis. Please also clarify that you are not observing or resolving the biomolecule itself, but identifying the tag associated with that molecule.

The Company respectfully acknowledges the Staff's comment and has revised the disclosure on page 2 as requested. In addition, the Company has clarified on page 2 that a user can view nucleotides being incorporated into a growing DNA strand within the ZMW by visualizing a fluorescent signal, or tag, associated with the nucleotide that is being incorporated.

14. With regard to your disclosure that your technology enables the study of RNA and protein, and with a view towards revised disclosure, please tell us whether you have demonstrated an ability to tag RNA and amino acids without affecting the synthesis of RNA polymers and proteins. Tell us if that ability is proprietary and disclose any risks in developing these aspects of your product for commercial usage. Please also tell us if your RNA testing has demonstrated whether the RNA molecules are sufficiently stable for purposes of your tests.

In response to the Staff's comment, the Company advises the Staff that RNA tagging is not required for the Company's approach; direct sequencing of RNA can be performed using a reverse transcriptase enzyme, which uses the same nucleotides that a DNA polymerase would use. Therefore, synthesis is unaffected. For protein, tagging of the tRNA is required and the Company has demonstrated the ability to do so without affecting the synthesis of protein which has been published in a peer reviewed paper entitled "Real-time tRNA transit on single translating ribosomes at codon resolution," *Nature*, April 15, 2010, Vol. 464, a copy of which will be supplementally provided to the Staff.

The Company respectfully advises the Staff that the Company's approach described above is proprietary. The Company has added a risk factor on page 11 to disclose the risks associated with developing future commercial applications.

RNA degradation is an issue for all methods studying RNA and the adoption of standard laboratory practices is sufficient to address the issue. The Company respectfully submits to the Staff that it provides details about the capability of SMRT technology to study RNA and protein in the section of the prospectus entitled "Future Commercial Applications" on pages 64 and 65.

15. We note your disclosure that your ability to generate longer readlengths is an important aspect of your technology. We also note from your disclosure that you are using single stranded DNA as the template for your sequencing studies and that your wells are measured at the nanometer level. In this regard, and with a view towards enhanced disclosure, please tell us whether the use of single-stranded DNA in your wells in any ways limits the readlengths you are able to achieve. For example, would DNA hairpins prevent your DNA polymerase from reading the entire strand under study? Also tell us whether the size of your wells places any limits on the readlengths that you are able to accomplish.

In response to the Staff's comment, the Company advises the Staff that secondary structure, such as hairpins, does not limit the readlengths that it is able to achieve. The studies that were published in the peer reviewed paper entitled "Real-Time DNA Sequencing from Single Polymerase Molecules," *Science*, January 2009, Vol. 323, a copy of which will be supplementally provided to the Staff, used single stranded DNA. As demonstrated in the highlighted portion of the paper, while secondary structure in single stranded DNA may cause a pausing event it does not interfere with the development of accurate consensus sequence . The Company also respectfully advises the staff that this is not an issue with the current sequencing process, as the SMRTbell format it uses is double stranded DNA, which is reflected in the modified disclosure on page 61 in the Business section. The Company does not believe that well size places limits on the readlengths it is able to accomplish because the entire template does not need to be in the ZMW at the same time.

16. In an appropriate location in your prospectus, please disclose how your technology could be used in molecular diagnostics, drug discovery and development, food safety, forensics, biosecurity and bio-fuels; please clarify for each of these uses whether you or a third party would potentially use your technology for those uses.

The Company respectfully acknowledges the Staff's comment and has revised the disclosure on pages 1, 4, 53 and 64 of the prospectus as requested.

Our solution, page 2

17. Please provide us with support for the market opportunity data and industry statistics that you have included throughout your prospectus. Clearly mark the relevant sections that support the data and statistics, and note the applicable page number in the registration statement where the disclosure is located. Please also tell us:

- ***how you confirmed that the information reflects the most recent available information;***
- ***whether all of the information is publicly available;***
- ***whether you paid for the compilation of any of the data;***
- ***whether any market information was prepared for your use in the registration statement or by an affiliated party; and***
- ***whether the authors of the industry information consented to your use of such data in the registration statement.***

In response to the Staff's comment, the Company advises the Staff that it contracted with, and paid Scientia Advisors, a life sciences consulting firm, to investigate the market opportunity for sequencing technology. The Company has supplementally included a copy of the report, entitled, "Executive Summary: Opportunities for Sequencing Technology" (the "Scientia Study"), dated July 26, 2010. In addition, the Company has included additional information from Scientia Advisors dated August 9, 2010 entitled, "2009 Sequencing Market Sizing Call" (the "Scientia Amendment"). Pages 12 and 13 of the Scientia Study describe the size of the worldwide market for sequencing technology growing from $1.1B in 2009 to $3.64B in 2014. Page 3 of the Scientia Amendment describes an additional $66M of estimated sequencing revenue in 2009, bringing the total to approximately $1.2B of sequencing revenue generated in 2009. The Company references the figures from these pages of the Scientia documents on Pages 2 and 63 of the prospectus. The information in the Scientia documents reflects the most recent information available to the Company. Scientia Advisors was made aware at the time the study was performed that the Company intended to reference their research in the Company's registration statement, and Scientia Advisors has given the Company their consent to do so.

18. In an appropriate section of your prospectus, please explain how your system "addresses many of the limitations" of prior generation technologies and how it "enables new types of biological research that were previously not feasible."

In response to the Staff's comment, the Company has revised the disclosure on pages 53 and 57 of the prospectus to list the limitations of the first and second generation sequencing technologies addressed by the Company's third generation DNA sequencing system. In addition, the Company has revised the disclosure on pages 1 and 5 to list the other types of biological research that may be possible with SMRT technology. The Company respectfully submits that

the prospectus does contain detailed explanations of the limitations of the prior generation technologies in the disclosure under “Evolution of Sequencing,” which begins on page 55 of the prospectus. In addition, the Company provides an explanation under “SMRT Sequencing Advantages” beginning on page 59 of the prospectus of how its third generation sequencing system addresses these limitations. To avoid confusion, the Company has also removed the language in the prospectus that provides its SMRT technology enables biological research that were previously not feasible, and instead lists the additional types of biological research that may be capable using its SMRT technology, including kinetic detection, RNA transcription monitoring, RNA sequencing, protein translation and ligand binding. The Company explains each of the future applications under the heading “Future Commercial Applications,” which begins on page 64 of the prospectus.

19. ***We note your disclosure in the first bullet point of the second paragraph that each array has approximately 75,000 zero mode waveguides. We also note from an article in* Technology Review *entitled “DNA in Real Time” published on September 16, 2008 that, as of the time of that article, only about one-third of your zero mode waveguides, or wells, are used and that the remaining two-thirds house either no enzyme or more than one enzyme, and thus fail to generate useful information. In an appropriate location in your prospectus, please disclose the current limitations on the usage of the total number of wells on your SMRT Cells.***

The Company respectfully acknowledges the Staff’s comment and has revised the disclosure on pages 2 and 58 as requested.

20. ***We note your reference to your “customers” in the last paragraph of this section. Please clarify, if true, that the products you have shipped to date have been related to your limited production release program and that you have not recognized revenue from these deliveries to date and that your backlog, to the extent it consists of deliveries of products that are part of your limited production release program, will not result in revenue recognition as the contracts pursuant to which your products are delivered require the delivery of full commercial release units, which may not occur.***

In response to the Staff’s comment, the Company has revised the disclosure on pages 3 and 66 of the prospectus as requested.

SMRT Sequencing Advantages, page 3

21. ***With reference to your first bullet point, please explain in an appropriate location how your technology allows the observation of “structural” variation. Explain why first and second generation sequencers are unable to accomplish this.***

The Company respectfully acknowledges the Staff's comment and has revised the disclosure on page 3 to explain how the Company's technology allows the observation of "structural" variation. The Company respectfully submits that it has described the limitations of first and second generation sequencers in detail in the Business section and that it would be too detailed for the Prospectus Summary section.

22. Please enhance your disclosure in the second bullet point to provide greater clarity as to the readlengths your product is currently capable of producing. We note in this regard that you disclose that your readlengths are greater than 1,000 base pairs "on average," with "instances" of over 10,000 base pairs, and that "first generation" sequencing may be extended to 1,000 bases. Disclose the reasons for the varying readlengths.

The Company respectfully acknowledges the Staff's comment and has revised the disclosure on page 3 as requested.

In addition, the Company advises the Staff that it has demonstrated the readlength capability of its SMRT technology in the peer reviewed paper entitled "Real-Time DNA Sequencing from Single Polymerase Molecules," *Science*, January 2 2009, Vol. 323, a copy of which will be supplementally provided to the Staff. These reads are derived from individual molecules and the termination of these reads stems from a single molecular event. These events, like all molecular events, are intrinsically random leaving uncertainty in the possible length of a particular sequencing reaction. The reason for the varying readlengths is that each sequencing reaction is an independent event, thereby producing a distribution of readlengths across each SMRT Cell.

23. With reference to your third bullet point, please explain in an appropriate location whether first and second generation sequencing technology is capable of monitoring infectious disease and molecular pathology. If your technology is able to accomplish those applications only on a faster basis, please make that clear.

The Company respectfully acknowledges the Staff's comment and has revised its disclosure on page 4 as requested.

24. Please revise the last bullet point in this section to clarify (1) how the kinetic information you describe ultimately relates to "play[ing] a critical role in diseases such as cancer" and (2) what this "critical role" is. Also disclose the basis for this belief. We also note from an article in* Technology Review *entitled "DNA in Real Time" that the polymerase molecule used in one of your wells is capable of incorporating 10 bases per second into the DNA strand. Since the date of that article was September 16, 2008, please update your disclosure to indicate the speed at which your current product is capable of incorporating DNA molecules and compare that to the speeds that typically occur in living cells. If the polymerization in your wells is operating at slower speeds than in a living cell, please explain whether this affects the comparability and significance of your kinetics results with those that occur in living human cells or in other living organisms. Please also indicate what type of DNA polymerase you are using and whether that type of polymerase affects the usability of your results for studying DNA methylation in the cells of human and other living organisms.

The Company respectfully acknowledges the Staff's comment and has revised its disclosure on pages 3, 4, 60 and 61 as requested. The Company will also supplementally provide the Staff with a recently published article, "Active DNA demethylation: many roads lead to Rome," *Nature Reviews – Molecular Cell Biology*, September 2010, Vol. 11, which establishes as general scientific belief that kinetics of incorporation may be associated with DNA methylation which is believed to play a critical role in diseases such as cancer.

In addition, the Company advises the Staff that the sequencing speed of the initial commercial release system is targeted to be one to three bases per second. This has been clarified in the Business section on page 59.

This reflects optimal sequencing speed, whereas the Technology Review article described maximum sequencing speed. The optimal speed has been selected to drive overall performance for SMRT technology. In nature, polymerases operate over a wide range of speeds, from as low as a few bases per second (comparable with the Company's system) up to a maximum observed speed of around 1,000 bases per second in the polymerase complexes responsible for replication in higher organisms. The impact of the polymerase speed is application-specific.

The Company's DNA sequencing application requires sensitivity to detect chemical changes on the DNA and identify the positions of modified bases. The Company is currently using a genetically modified DNA polymerase as it has the sensitivity required to detect methylation.

Risks Affecting Us, page 4

25. ***We note that many of the risk factors that you list here could apply to any issuer or offering. Please revise to present the most significant risk factors that make this offering speculative or risky. In addition, please expand your discussion of the risk factors to balance the positive elements that you have chosen to highlight in the rest of your prospectus summary. We note in this regard the contrast between the brief list of risk factors and the narrative discussion on pages 1 through 4. Revise accordingly.***

The Company respectfully acknowledges the Staff's comment and has revised the risk factors to present the most significant risk factors that make this offering speculative or risky. However, the Company respectfully submits that although the risk factors could apply to many issuers or offerings, such risk factors do in fact apply to the Company and do represent some of the most significant risk factors that make this offering speculative or risky. The Company has also expanded its discussion of the risk factors to balance the positive elements highlighted in the rest of the prospectus summary.

Risk Factors, page 9

We have limited experience in manufacturing our products . . . , page 12

26. Please disclose any risks to your proprietary protections to the extent you currently or in the future outsource the manufacturing of any of your products.

In response to the Staff's comment, the Company has expanded the risk factor titled "The measures that we use the 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" on page 21 to note that the Company requires third party manufacturing partners to enter into confidentiality agreements, which agreements may be breached, and the Company may not have adequate remedies for any such breach.

We rely on other companies for the manufacture of components and sub-assemblies . . . , page 12

27. Please reconcile the heading of this risk factor with your disclosure under "Manufacturing" on page 62, which appears to indicate that you currently do not outsource sub-assemblies to third parties. Please also expand your disclosure under this risk factor to clarify the extent to which required components are available only from a single source.

In response to the Staff's comment, the Company has revised this risk factor to clarify that the Company does currently outsource certain components and sub-assemblies (i.e., the wafer fabrication and processing of SMRT Cells as disclosed under "Manufacturing" on page 62) and that the Company intends to outsource additional sub-assemblies in the future. The Company has also expanded this risk factor to clarify the extent to which required components are available only from a single source.

We may encounter difficulties in managing our growth . . . , page 13

28. Since you have not yet commenced commercial sales of your products, please indicate the basis for your disclosure that you "expect to experience rapid and substantial growth."

The Company respectfully acknowledges the Staff's comment and advises the Staff that although the Company has not yet commenced commercial sales of its products, it has delivered seven limited production release instruments as of September 15, 2010 to customers participating in the limited production release program. The Company expects that all seven limited production release customers will accept such instruments after testing is completed and will ultimately accept the commercial release version. The launch of the commercial release version is expected in early 2011. The Company has approximately $15 million in backlog, which includes orders from customers not participating in the limited production release program. The Company continues to receive orders from additional customers. Given the anticipated number of instruments that the Company expects to sell, the Company believes it will experience rapid and substantial growth.

Our products could have unknown defects or errors . . . , page 15

29. Please expand to state whether you offer a return policy or product warranty to customers, and if so, please disclose the material terms.

In response to the Staff's comment, the Company has revised the disclosure in this risk factor to disclose the material terms of the Company's warranty.

We are subject to existing and potential additional governmental regulation . . . , page 17

30. Please expand this risk to include, or provide a cross-reference to, a discussion of the various material regulations to which you are subject and to clarify the material effects of compliance with such regulations.

In response to the Staff's comment, the Company has revised the disclosure in this risk factor on pages 18 and 19 to cross-reference other risk factors relating to various material regulations to which the Company is subject and to clarify the material effects of compliance with such regulations.

If we fail to maintain proper and effective internal controls . . . , page 17

31. Please revise to clarify what you mean by your statement that you "have in the past discovered . . . areas of [y]our internal financial accounting controls and procedures that need improvement," and to specify the areas of concern. Clarify whether you took any remedial actions and the results of those actions.

In response to the Staff's comment, the Company has revised its disclosure on page 19 and respectfully advises the Staff that, until recently, the Company has limited its accounting and internal control structure to meet the external financial reporting obligations required by the terms of the private equity purchased and held by its investors. The rapid growth of the Company's operations and the planned initial public offering created a need for additional resources within the accounting and finance functions due to the increasing need to produce timely financial information and to ensure the level of segregation of duties customary for a U.S. public company. The Company has since hired additional resources in the accounting and finance function and continues to reassess the sufficiency of finance personnel in response to these increasing demands and expectations.

Our ability to use net operating losses . . . , page 18

32. Please quantify your available net operating losses that you currently are able to offset against future taxes. Indicate the likelihood that your offering will constitute another ownership change.

In response to the Staff's comment, the Company has expanded its disclosure on page 20 to quantify the available net operating losses that the Company is currently able to offset against future taxes. The Company further respectfully refers the Staff to page F-24 for the disclosures of the Company's available net operating losses totaling $152 million at December 31, 2009. Management is uncertain as to whether or not the offering will constitute an ownership change as it is unable to predict: a) potential shifts within its existing ownership pool prior to completion of the offering; and b) the investors and their relative ownership percentages in this offering. If the offering were to trigger an ownership change, the company's current expected valuation would likely not affect the usability of net operating losses.

Some of the intellectual property that is important to our business . . . , page 19

33. To the extent that you are substantially dependent on any licenses, please name the licensors in this risk factor and describe any specific risks that you face as a result of your agreements with them. If you are not substantially dependent on any one licensor, please clarify this fact and disclose the approximate number of licensors with which you have agreements.

In response to the Staff's comment, the Company has revised this risk factor on page 21 to name the licensors with whom the Company has entered into material license agreements. The Company has also included a cross-reference to the Intellectual Property portion of the Business Section describing the termination rights of these licensors, which are the primary material risks relating to these agreements. The Company has also filed such license agreements as exhibits to the registration statement.

Risks Relating to Owning Our Common Stock and This Offering, page 22

34. Please add a risk factor that addresses the percentage of your outstanding common stock following the completion of this offering that will be owned by the principal shareholders, including officers and directors, as listed on page 97. Discuss the extent to which these principal shareholders will control the composition of the board.

In response to the Staff's comment, the Company has added a risk factor on page 26 that addresses the percentage of the outstanding common stock following the completion of this offering that will be owned by the principal shareholders, including officers and directors, as listed on page 103. After the completion of the offering, no one principal shareholder but the principal shareholders acting together may exert significant control over the composition of the Company's board of directors.

If securities or industry analysts do not publish research or reports . . . , page 23

35. Your disclosure indicates that you currently have analysts who cover your company. Please confirm if you currently are covered by analysts. If you are not currently covered, please revise your disclosure to indicate that you may not obtain analyst coverage.

In response to the Staff's comment, the Company has revised the disclosure on page 25 to indicate that it does not currently have analyst coverage and that it may not obtain any analyst coverage in the future.

Anti-takeover provisions in our charter documents and under Delaware law . . . , page 24

36. Please expand to address the potential dilutive and anti-takeover effects that exist specifically in light the large amount of your authorized but unissued shares of common stock.

In response to the Staff's comment, the Company has revised the disclosure in this risk factor on page 26 to note the potential dilutive effect with respect to the issuance of the authorized but unissued shares of common stock. In addition, the Company has added an additional risk factor on page 27 noting the potential dilutive effect of the authorized but unissued shares of capital stock.

Use of Proceeds, page 27

37. Please revise to state the approximate amount of proceeds to be used for each stated purpose as set forth in the bulleted list in this section. Refer to Regulation S-K Item 504.

In response to the Staff's comment, the Company has revised this disclosure to state the approximate amount of proceeds to be used for each stated purpose as set forth in the Use of Proceeds section of the prospectus.

Capitalization, page 28

38. ***Please revise to remove the caption relating to cash and cash equivalents from your presentation of capitalization.***

In response to the Staff's comment, the Company has removed the caption relating to cash and cash equivalents from the presentation of capitalization.

39. ***We note from page F-28 that your outstanding convertible preferred stock and convertible junior preferred stock will convert automatically into common stock on a one-to-one basis based upon on certain conditions including a minimum amount of gross proceeds and minimum price per share. In connection with your pro forma presentation in this filing, please confirm to us that you currently expect the offering to meet all of the conditions for automatic conversion. If you subsequently conclude that the conditions may not be satisfied, please revise the filing accordingly.***

The Company respectfully acknowledges the Staff's comment and confirms that it currently expects the offering to meet all of the conditions for automatic conversion. If the Company subsequently concludes that the conditions may not be satisfied, the Company will revise the filing accordingly.

Dilution, page 30

40. ***Please expand your disclosure to indicate how the numbers, amounts, average price per share and percentages would change if the full over allotment option is exercised.***

In response to the Staff's comment, the Company has revised its disclosure on page 32.

Management's Discussion and Analysis of Financial Condition, page 34

MD&A Overview, page 34

41. ***Please clarify the nature of the government grants upon which you have historically relied. Describe the material terms of these grants, including but not limited to the aggregate amounts and terms of the grants. Please also file any material agreements as exhibits.***

In response to the Staff's comment, the Company respectfully advises the Staff that the Company has received grant awards from the National Human Genome Research Institute of the National Institutes of Health (the NIH) for purposes of advancing health through genome research. These awards provide cost reimbursement for certain types of research and development expenditures over a contractually defined period. The awards granted to the Company by the NIH are as follows:

Project Name	Grant Amount	Project Period
Real-time Multiplex Single-Molecule DNA Sequencing	$ 2,150,000	8/1/2005-5/31/2008
ARRA Grant (Supplement) Real-time Multiplex Single-Molecule DNA Sequencing	$ 714,406	9/30/2009-8/31/2010
Direct Single Base-Pair Real-Time DNA Methylation Sequencing	$ 595,011/year (2 years)	9/30/2009-7/31/2011
Direct Real-Time Transcriptome Sequencing	$ 970,749	6/15/2010-3/31/2012

These grants were not deemed to be material by management. Accordingly these agreements have not been filed as exhibits.

Operating Expenses, page 35

42. Please quantify the prototype expenses that you incurred in 2010 but that you do not expect to recur in 2011.

In response to the Staff's comment, the Company has expanded its disclosure on page 37 to include prototype expenses incurred in 2010 that it does not expect to recur in 2011.

Critical Accounting Policies and Estimates, page 36

Valuation of Stock Based Awards, Common Stock and Warrants, page 36

43. For each valuation date, describe how you determined the significant assumptions used in the valuations, including discount rates, the weighting between the income and market approaches, and the weighting within the Probability Weighted Expected Return Method. Include clear disclosure of the reasons for any significant changes in the weighting of items within the valuation and/or allocation methodologies.

In response to the Staff's comment, the Company has expanded its disclosure on pages 42, 43 and 44 to clearly identify the key quantitative assumptions used in valuations, including discount rates, the weightings of income and market approaches and the weightings within the PWERM.

44. Further to the above, we note your disclosure on page 39 that over time, the allocation methodology used to allocate your value transitioned from the Option Pricing Method to the Probability Weighted Expected Return Method. Please revise your disclosures to clarify for each valuation discussed herein which allocation methodology was used.

In response to the Staff's comment, the Company revised its disclosure on page 41 as follows:

*Over time, as certainty developed regarding possible discrete events, including an IPO, the allocation methodology utilized to allocate our value transitioned from the Option Pricing Method, or OPM**, which was utilized through July 2009,** to the Probability Weighted Expected Return Method, or PWERM**, which has been utilized since December 2009**.*

Further, in response to Comment 43, the Company has expanded the disclosure on pages 40 and 41 for each valuation date to include the method used and key assumptions employed in applying the applicable method.

45. Please disclose the aggregate intrinsic value of all outstanding options based on the midpoint of the estimated IPO price range. Please include an updated discussion of each significant factor contributing to the difference between the fair value as of the date of grant and the estimated IPO price for options granted during the twelve months prior to the date of the most recent balance sheet once you have determined your IPO price range. Please note that we will delay our assessment of your stock based compensation pending inclusion of the estimated IPO price in the filing.

In response to the Staff's comment, the Company has included additional disclosure on page 40 beneath the table of option grants as follows:

The intrinsic value of all outstanding options as of June 30, 2010 was $ million based on the estimated value of $ per share, the midpoint of the planned range of this offering.

The Company will update the requested information when the range has been determined.

The Company believes using the June 30, 2010 date is appropriate as it will correspond to the other disclosures in the document as of the same date.

Results of Operations, page 43.

46. For each of the periods discussed and analyzed, please add a separate discussion for loss from operations and net losses.

In response to the Staff's comment, the Company has expanded its disclosure on pages 46 through 48 to include the loss from operations and net losses in tabular form. This will allow the reader to readily see financial statement line items comprising loss from operation and net losses and refer to the narrative discussions for those line items in the following paragraphs.

Contractual Obligations, Commitments and Contingencies, page 47

47. We note disclosure on page 48 and in Note 6 of the financial statements of amounts due under a facility financing obligation. We also note disclosure in Note 7 of the financial statements of minimum amounts due under license agreements. Please revise to include disclosure of these items in the contractual obligations table or otherwise explain to us how your presentation here complies with Regulation S-K Item 303(a)(5).

The Company respectfully acknowledges the Staff's comment and expanded its disclosure on page 51 to include minimum amounts due under the facility financing obligation in the tabular disclosure and to expand disclosure of the terms of the license agreements in accordance with Regulation S-K Item 303(a)(5). The Company further advises the Staff that the license agreement amounts included in Note 7 are not included in the tabular disclosure of contractual obligations as it believes that it is impracticable to determine the amount to be included in the table as the license fees are not fixed and are cancellable.

Off-Balance Sheet Arrangements, page 48

48. Please reconcile your disclosure here that you do not have any off-balance sheet arrangements with your disclosure on page F-23 regarding indemnification agreements. Alternatively, explain how your presentation here complies with Regulation S-K Item 303(a)(4)(ii)(A).

In response to the Staff's comment, the Company has expanded its disclosure on page 51 to reconcile with its disclosure on page F-23 regarding indemnification agreements.

Business, page 49

49. We note that you provide extensive background information on your industry in this section, yet provide comparatively little information describing your planned products, services, markets and customers. For example, we note that you do not describe the components of the "reagent kits" that are discussed at the top of page 57. It is also unclear from your disclosure on page 61 what specific markets you plan to address. For example, will the types of customers you describe at the bottom of page 61 use your system in different ways? Please note that your revised disclosure should be presented clearly so it is understandable to an investor who is not an expert in your industry.

In response to the Staff's comment, the Company has revised the disclosure on pages 60, 61, 63 and 66 of the prospectus to provide additional information describing the Company's planned products, services, markets and customers.

50. Please provide us with independent, objective support for your statements regarding the efficacy and accuracy of your technology. We note in this regard your disclosure at the top of page 53. Please also revise to ensure that your disclosure in this section is balanced, particularly in light of your risk factor disclosure on page 10 that your products will include "unproven" technology.

The Company respectfully notes that the statement on page 57 relates to the natural process of DNA replication, which is generally recognized as an efficient and accurate process. In addition, the Company is supplementally providing the Staff with signed customer acceptances which substantiate the Company's statements regarding the accuracy of its technology. The Company further advises the Staff that it has revised its disclosure to clarify that the Company's technology is not unproven as noted in its response to Comment 6 above.

Pacific Biosciences' Solutions – The Third Generation, page 52

51. We understand that error correction is a property of some DNA polymerases and is a process that corrects mistakes in DNA strands undergoing synthesis by removing a base that has been incorrectly inserted into the strand and then replacing it with the appropriate base. In this regard, please disclose whether your SMRT technology would recognize a base that is added, and then removed, as a part of your DNA sequence analysis and how this would affect your results. Also, if there are insertion or deletion errors that are not corrected, please disclose how that would affect the results of your sequencing analysis. Disclose any known limitations or error rates that result from the foregoing and the known frequency of such limitations or error rates that you have experienced to date.

The Company respectfully advises the Staff that regardless of the source (i.e., DNA polymerase properties or other), potential errors such as insertion and deletion errors described in the Staff's comment are common to all sequencing methods. These errors are generally mitigated through data analyses and consensus sequencing methods which involve repeated sequencing of the DNA strand. As described on page 61, the PacBio *RS* that has the ability to achieve a 99.99% finished accuracy rate, which is commensurate with leading second generation sequencing systems. The Company respectfully submits that because these types of potential errors would not affect the results of a DNA sequencing analysis, additional disclosure in the prospectus regarding error rates and correction are not required and could even be misleading to potential investors.

Putting the Three Innovations Together, page 55

52. Please clarify the meaning of the second graphic in this section. Explain the background noise and the scale used in your graphic.

The Company respectfully acknowledges the Staff's comment and has clarified the narrative description of the graphics in this section in order to clarify the meaning of the second graphic in this section. The Company notes that the y-axis is the relative light intensity and the x-axis is time measured in milliseconds. The graphic has been revised to reflect these labels.

SMRT Transcription, page 60

53. Explain how your SMRT detection provides the ability to "directly observe" in "real time" the "regulation" of transcription of a gene into an RNA message. Since we understand from your disclosure regarding the Central Dogma of Molecular Biology that the RNA polymerase would translate based on the DNA template, please clarify why this application would be valuable.

In response to the Staff's comment, the Company hereby respectfully advises the Staff that its SMRT technology is capable of directly observing in real time the regulation of transcription of a gene into an RNA message. Internal studies have demonstrated that RNA synthesis may be achieved by replacement of the DNA polymerase with an RNA polymerase, and the exchange of the phospholinked substrates with their RNA counterparts. The remaining elements of the system are conceptually the same. While the content of the message can be read by current techniques, the events leading to the expression of a specific RNA molecule are not observed. For example, it is established that many genes are transcribed into multiple RNA molecules, defined as splice variants. However, the specific signals leading to these alternative splicing events are not fully understood so any information provided by the SMRT technology will be useful to researchers. The Company has revised its disclosure on page 65 accordingly.

SMRT Translation, page 61

54. We note your disclosure that the levels of mRNA do not always correlate with the amounts of the corresponding protein production as a result of regulatory mechanisms such as miRNA binding. To the extent that your wells do not contain similar amounts of miRNA or other regulatory molecules as would occur in a living cell, please clarify how your systems quantify and measure the levels of protein production in a way that would be useful for understanding intracellular biological processes.

In response to the Staff's comment regarding the presence of miRNA, the Company respectfully advises the Staff that, as a future application, in a future translation assay the Company will endeavor to develop methods that would provide appropriate quantification and relevant, informative data.

Customers, page 61

55. Please tell us whether the entities disclosed in this section represent a complete list of your current customers. If not, please tell us what objective criteria you used to select the customers disclosed in this section and whether any other entities that satisfy the criteria were omitted.

In response to the Staff's comment, the Company hereby respectfully advises the Staff that the entities listed as its customers on page [66] are all of its customers who have ordered limited production release instruments. All of the Company's limited production release customers have agreed that the Company may publicly disclose their identities.

56. Please explain in greater detail the "limited production release program" described in this section, including the types of instruments for which you received orders and how these instruments differ from your planned commercial product. Clarify the material terms of the agreements related to this program; we note in this regard your disclosure on page 35 that the program "will not result in revenue recognition as the contracts pursuant to which the units were delivered require the delivery of a full commercial release unit."

In response to the Staff's comment, the Company has revised this section of the prospectus on page 66 to more fully describe the limited production release program. The disclosure now describes that limited production release instruments have lower performance parameters than the Company expects its commercial release version to achieve. The Company has also disclosed the material terms of the agreements connected with the limited production release program, including certain payment terms. This is now consistent with the disclosure on page 37 of the prospectus.

57. Please disclose any positive or negative feedback that you have received from the entities that are using your products as part of the limited production release program.

In response to the Staff's comment, the Company respectfully advises the Staff that the limited production release program was designed to help the Company garner quality feedback on the product prior to its full commercial launch. The Company is in regular and frequent contact with its limited production release customers who have received the Company's instrument, and such customers consistently provide the Company with feedback. The Company has revised its disclosure on page 66 to more fully describe the limited production release program. To date, the Company has not received any material negative feedback, and the Company expects that of the seven customers who have received a limited production release instrument as of September 15, 2010, all will accept such instruments after testing is completed and will ultimately accept the commercial release version.

Backlog, page 62

58. Please revise to indicate the portion of backlog orders that are not reasonably expected to be filled in the current fiscal year. Clarify whether the backlog includes government orders that are not yet funded or contracts that have been awarded but are not yet signed. See Regulation S-K Item 101(c)(1)(viii).

In response to the Staff's comment, the Company has revised this section of the prospectus on page 66 to clarify that it expects to deliver all orders in the backlog by December 31, 2011; however, the Company does not expect to recognize revenues on any orders in the current fiscal year. In addition the Company has clarified in this section of the prospectus that orders include purchase orders or signed contracts. With regard to the Staff's comment on potentially unfunded government orders, the Company respectfully submits that it must rely on its customers' representation that orders they have placed with the Company have been adequately funded. If the Company were to be made aware that any order placed with it was not funded or encumbered in some way, the Company would consider such circumstances in determining whether or not an order was firm. There were no such circumstances in connection with the orders included in this disclosure of backlog.

Research and Development, page 62

59. Please expand your disclosure in this section to disclose the estimated amount spent in each of the last three fiscal years on company sponsored-research and development.

In response to the Staff's comment, the Company has revised this section of the prospectus on page 67 to disclose the estimated amount spent in each of the last three fiscal years on Company-sponsored research and development.

Intellectual Property, page 63

60. Please explain what you mean by "government march-in rights" and include any appropriate risk factor disclosure.

In response to the Staff's comment, the Company has revised the disclosure on page 68 to clarify the discussion of "government march-in rights." The U.S. government may disregard the Company's exclusive patent rights on its own behalf or on behalf of third parties by imposing licenses in certain circumstances, such as if the patent holder fails to achieve practical application of the U.S. government-funded technology, because such action is necessary to alleviate health or safety needs, to meet requirements of federal regulations, or to give preference to U.S. industry. The Company has also added a risk factor relating to government march-in rights.

Legal Proceedings, page 65

61. We note that Helicos Biosciences Corporation recently filed a patent infringement lawsuit against you. Please revise your disclosure in this section to address the lawsuit and provide the disclosure required by Regulation S-K Item 103. Also revise your risk factor disclosure on page 21 under the heading "[w]e could in the future be subject to legal proceedings . . . ," or provide risk factor disclosure under a separate heading, as appropriate.

The Company respectfully acknowledges the Staff's comment and has revised the disclosure in the Legal Proceedings section on page 70 to address the patent infringement lawsuit filed by Helicos Biosciences Corporation. The Company has also revised the risk factor disclosure on page 23 to address this lawsuit.

Director Independence, page 68

62. Please explain in greater detail how the board of directors determined that Messrs. Byers, Ericson and Singer and Dr. Hunkapiller qualify as "independent directors" given their beneficial stock ownership and that their affiliates are parties to your investor rights agreement.

The Company respectfully informs the Staff that the Company's Board of Directors has determined that Messrs. Byers, Ericson and Singer and Dr. Hunkapiller qualify as "independent directors" based on applicable stock exchange listing standards, notwithstanding the stock ownership of their affiliates and such affiliates being parties to the Company's investor rights agreement.

Mr. Byers is a Managing Partner of Kleiner Perkins Caufield & Byers ("KPCB"), which holds approximately 10% of the Company's outstanding stock on an as-converted basis prior to the offering. Mr. Ericson is a Managing Partner of Mohr Davidow Ventures ("MDV") which holds approximately 12% of the Company's outstanding stock on an as-converted basis prior to the offering. Mr. Singer is a Limited Partner of Maverick Capital Ltd. ("Maverick"), which holds approximately 9% of the Company's outstanding stock on an as-converted basis prior to the offering. Dr. Hunkapiller is a General Partner of Alloy Ventures ("Alloy"), which holds approximately 7% of the Company's outstanding stock on an as-converted basis prior to the offering. Given the anticipated size of this offering, the holdings of KPCB and MDV post-offering will likely fall below 10% of the Company's voting securities, and the holdings of Maverick and Alloy will also be reduced. Under NASDAQ Marketplace Rules, ownership of a significant amount of stock is not a *per se* bar to independence. Messrs. Byers, Ericson and Singer and Dr. Hunkapiller do not currently receive any compensation from the Company nor have they received any such compensation in the past. The Board of Directors has made an affirmative determination that Messrs. Byers, Ericson and Singer and Dr. Hunkapiller do not have any other relationships that would impair their independence, based on all the facts and circumstances known to the Company and to the other members of the Board of Directors.

The Company's Board of Directors has taken into consideration the fact that affiliates of Messrs. Byers, Ericson and Singer and Dr. Hunkapiller are parties to the Company's investor rights agreement. However, the Board of Directors has determined that the rights afforded to the parties under such agreement do not impair the independence of Messrs. Byers, Ericson and Singer and Dr. Hunkapiller.

Executive Compensation, page 73

63. We note that you have not included any disclosure in response to Regulation S-K Item 402(s). Please advise us of the basis for your conclusion that disclosure is not necessary and describe the process you undertook to reach that conclusion.

The Company respectfully acknowledges the Staff's comment and advises the Staff that in evaluating whether any disclosure was required in response to Item 402(s) of Regulation S-K, the Company's management, including senior members of the Company's human resources department, reviewed the Company's compensation policies and practices to assess whether such policies and practices as they relate to the Company's employees are reasonably likely to have a material adverse effect on the Company. The Company concluded that its compensation policies and practices are not reasonably likely to have a material adverse effect on the Company and that no disclosure in response to Item 402(s) of Regulation S-K was necessary. In reaching such conclusion, the Company considered the following factors:

- substantially all employees receive a substantial majority of their cash compensation in the form of base salary, which the Company believes does not encourage excessive risk taking;
- although certain of the Company's employees are awarded performance-based cash bonuses based on the achievement of performance objectives, the Company believes that the performance objectives are aligned with the long-term goals of the Company and stockholder interests and create a balanced risk and reward structure that incentivizes such employees but does not encourage excessive risk taking;
- substantially all of the equity awards granted to employees are subject to multi-year time-based vesting, which require an employee remain employed by the Company for a period of years in order to receive the full benefit of any awards; and
- the Company's annual compensation review and performance evaluation process does not focus entirely on the Company's financial results but considers other factors that the Company believes do not encourage excessive risk taking, such as management and technical skills, team building, integrity and mentoring skills.

Peer Group, page 74

64. We note your disclosure that your peer group "includes" the companies listed on page 75. Please clarify whether this represents all peer group companies, or revise your disclosure accordingly. See Regulation S-K Item 402(b)(2)(xiv).

The Company acknowledges the Staff's comment and clarifies that the companies listed on page 81 comprises all of the companies in the Company's peer group. The Company has revised this disclosure accordingly.

65. ***It is unclear from your existing disclosure how you use comparative compensation information to determine actual compensation. For example, we note your belief that a review of comparative information provides you "with appropriate compensation benchmarks." Please revise to disclose the benchmark used for each component of your compensation program. For example, while we note from your disclosure on page 76 that you target "at or near the midpoint of executives in similar positions" with respect to base salary, it is unclear whether you benchmark for other elements of compensation or for compensation in the aggregate. See Regulation S-K Item 402(b)(2)(xiv). Your revised disclosure should also clarify whether actual compensation paid for each component and in the aggregate deviates from the benchmark, and if so, the reasons why. We note in this regard your disclosure at the bottom of page 75 that "[t]he base salaries of [y]our executive officers may in some instances be lower than market..." To the extent that you use benchmarks that differ among your named executive officers, please also explain why; we note your disclosure at the top of page 76 that you have developed a bonus target "to allow [y]our executives, other than [y]our Chief Executive Officer, to earn total cash compensation at the mid-level for [y]our peer group . . . ."***

In response to the Staff's comment, the Company has revised its disclosure on page 81 to disclose the benchmark used for each component of the Company's compensation program. The revised disclosure also clarifies whether and why actual compensation paid for each component and in the aggregate deviates from the benchmark.

Components of Our Executive Compensation Program, page 75

66. ***Please revise to explain in greater detail how you determine base salary for your named executive officers, focusing on how you consider the specific "individual skills" and "performance contributions" of the named executive officers. Refer to Regulation S-K Item 402(b)(2)(vii). Similarly, please expand your disclosure on page 76 to explain what contributions by Mr. Phillips led to the decision to increase his base salary significantly in February 2010.***

In response to the Staff's comment, the Company has revised its disclosure to explain in greater detail how base salary is determined for named executive officers and the contributions by Mr. Phillips that led to the decision to increase his base salary in February 2010.

67. ***Please expand your disclosure to clarify the nature of the "quarterly bonus commitment" paid to Mr. Phillips. For example, while we note your cited need for retention, it is unclear whether this bonus was a fixed amount and whether you will continue to pay this amount to Mr. Phillips. We note in this regard your disclosure at the top of page 76. Please also file the contractual agreement with Mr. Phillips discussed in footnote (2) to the summary compensation table on page 81.***

In response to the Staff's comment, the Company has expanded its disclosure to clarify the nature of the "quarterly bonus commitment" paid to Mr. Phillips. The Company respectfully advises the Staff that the contractual bonus commitment to Mr. Phillips expired in 2008 and the Company has deleted footnote (2) to the summary compensation table on page 87.

Executive Officer Compensation, page 76

68. Please expand to disclose the specific "quarterly deliverables" and "major goals" that were required to be achieved by Mr. Martin in order to receive his bonus payment for 2009. See Regulation S-K Item 402(b)(v).

The Company respectfully acknowledges the Staff's comment and advises the Staff that the Company has disclosed that Mr. Martin's quarterly deliverables relate to products, finance, organization and personnel and his major goals relate to conserving cash, product development timeline and market strategies. The Company respectfully submits that disclosure of the specific deliverables and goals to be achieved by Mr. Martin in order to receive his bonus payment for 2009 is not required because it would result in competitive harm and may be omitted pursuant to Instruction 4 to Item 402(b) of Regulation S-K.

Instruction 4 to Item 402(b) of Regulation S-K states that the standard to use when determining whether disclosure would cause competitive harm for the registrant is the same standard that would apply when a registrant requests confidential treatment of confidential trade secrets or confidential commercial or financial information pursuant to Securities Act Rule 406 and Exchange Act Rule 24b-2, each of which incorporates the criteria for non-disclosure when relying upon Exemption 4 of the Freedom of Information Act and Rule 80(b)(4) thereunder. Exemption 4 generally exempts "matters that are . . . trade secrets and commercial or financial information obtained from a person [that is] privileged or confidential" from the class of materials that public agencies must make available to the public. For Exemption 4 to apply, the following test must be satisfied: (1) the information for which an exemption is sought must be a trade secret or such information must be commercial or financial in character; (2) such information must be obtained from a person, which includes a corporation; and (3) such information must be privileged or confidential. *Nadler v. Federal Deposit Ins. Corp.*, 92 F.3d 93, 95 (2d. Cir. 1996); *GC Micro Corp. v. Defense Logistics Agency*, 33 F.3d 1109, 1112 (9th Cir. 1994).

The specific quarterly deliverables and major goals constitute "commercial or financial information" under Exemption 4 as they relate to the Company's commercial and financial targets.

Provided by a Person. Under the second requirement of Exemption 4, information for which confidential treatment is requested must be provided to the Commission by a person. The *Landfair* court stated that the term "person" refers to a wide range of entities, including corporations. 645 F. Supp. at 327. The Company, from whom the information is obtained, is a corporation, and therefore is a person within the meaning of Exemption 4. Accordingly, the second prong under Exemption 4 has been satisfied.

Privileged or Confidential Information. Commercial or financial information is considered "confidential" within the meaning of Exemption 4 where (i) it is not customarily released to the public by the person from whom it was obtained, and (ii) requiring disclosure would likely impair the government's ability to obtain necessary information in the future or public disclosure would cause substantial harm to the competitive position of the person from whom the information was obtained. S. Rep. No. 813, 89th Cong, 1st Sess. 9 (1965); *see also Burke Energy Corp. v. Dep't of Energy*, 583 F. Supp. 507 (1984); *National Parks and Conservation Ass'n v. Morton*, 498 F.2d 765 (1974). Evidence revealing actual competition and the likelihood of substantial competitive injury are sufficient to bring commercial information within the realm of confidentiality. *Public Citizen*, 704 F.2d at 1291.

As noted in the prospectus, Mr. Martin's bonus payment for 2009 was determined 50% based on actual achievement of certain quarterly deliverables relating to products, finance, organization and personnel, and 50% based on the Company's Board of Directors' assessment of Mr. Martin's progress toward certain major goals set by the Board of Directors relating to conserving cash, the product development timeline and developing and executing market strategies. The Company's plans relating to its products, finance, organization and personnel, as well as its plans for conserving cash, its product development timeline and its market strategies represent the Company's confidential internal goals for its business, financial and operational strategies. None of this information is released or disclosed to the public.

The Company believes that disclosure of the performance targets would cause substantial harm to its competitive position. If the Company is required to disclose the performance target levels, it would essentially be informing its competitors of its expectations, both historically and for the current fiscal year, for its business, financial and operational strategies. The disclosure of such performance targets would provide significant visibility into, and allow the Company's competitors to reach significant conclusions about, its plans and priorities, including: designated plans for growth, profitability, areas of product research or development; timing of product launch; allocation of resources; and changes in direction.

The Company's competitors could use such information to unfairly compete with the Company, which would clearly be harmful to the Company's business and its future operations. For example, competitors could use such information to recruit employees away from the Company or to retain their own employees by offering similar incentives. In addition, competitors could implement tactics to prevent the Company from achieving its strategies. For example, the disclosure of the Company's product development timeline would allow competitors to gauge its production processes and competitors could launch similar products earlier than the Company's timing target, thereby giving the competitors an unfair competitive advantage. In addition, the Company's competitors that are not publicly traded have no comparable reporting requirements. Disclosure of the Company's performance target levels without a corresponding opportunity to access similar information from its competitors would place the Company at a strategic disadvantage.

Furthermore, disclosure of historical performance target levels would allow competitors to forecast or extrapolate the Company's business model to future periods and subject the Company to similar risks. The Company may also have multi-year strategies that would be harmed by disclosure of historical performance targets.

The Company believes disclosure of the performance targets will make it substantially more difficult for it to achieve its business, financial and operational strategies and will cause significant economic harm to its competitive position, which would be harmful to its stockholders. The Company believes that access to its performance target levels by its competitors would allow them to use the information against the Company, affecting its future plans and strategies and making its ability to achieve such plans and strategies increasingly difficult, which could be materially harmful to its future financial performance.

Certain Relationships and Related Party Transactions, page 92

69. Please tell us why you have not provided disclosure of the collaboration agreement with Gen-Probe, a 5% or greater shareholder, as discussed on page 64 of your registration statement.

In response to the Staff's comment, the Company has revised its disclosure under the Certain Relationships and Related Party Transactions section on page 100 to discuss the collaboration agreement with Gen-Probe.

Principal Stockholders, page 96

70. Please disclose the natural person or persons who exercise, directly or indirectly, sole or shared voting and/or dispositive powers with respect to your shares held by each entity named in the table.

In response to the Staff's comment, the Company has revised the footnotes to the Principal Stockholders table to disclose the natural person or persons who exercise, directly or indirectly, sole or shared voting and/or dispositive powers with respect to the Company's shares held by each entity named in the table.

Index to Financial Statements. Page F-1

Note 1, Overview, page F-10

71. ***We note your disclosure that you report as a development stage enterprise since planned principal operations have not yet commenced. We note elsewhere in the filing, including on pages 61-62 that you have commenced marketing and sales activity. We also note that you have begun distributing limited production release units and that you have received orders from customers totaling approximately $15 million as of June 30, 2010. Please explain to us in greater detail how you have evaluated the provisions of Topic 915 of the FASB Accounting Standards Codification.***

The Company respectfully advises the Staff of the Company's evaluation related to its disclosure as a development stage enterprise.

Topic 915 of the FASB Accounting Codification states:

"For purposes of this section, an enterprise shall be considered to be in the development stage if it is devoting substantially all of its efforts to establishing a new business and either of the following conditions exists:

a. Planned principal operations have not commenced.

b. Planned principal operations have commenced, but there has been no significant revenue therefrom.

A development stage enterprise will typically be devoting most of its efforts to activities such as financial planning;, raising capital; exploring natural resources; developing natural resources; research and development; establishing sources of supply; acquiring property, plant equipment or other operating assets, such as mineral rights; recruiting and training personnel; developing markets; and starting up production. The point at which an enterprise ceases to be in the development stage, and, therefore, need not present the cumulative amounts since its inception … must be evaluated in each case."

The Company's focus is on developing and introducing a third generation sequencing platform and since inception substantially all of the Company's costs are associated with many of the "Development Stage Enterprise" activities described by Topic 915. Inception to date, the Company has incurred $206.7 million (or 81% of total operating expenses) on research and development expenses to further the development of the SMRT Cell technology platform. The Company continues to increase the amount of sales, general and administration expenses incurred to develop new markets and potential partners through commencing marketing and sales activities, yet the Company has no revenue from its FCR units. The Company has relied on private equity financing to fund operations.

The Company acknowledges the Staff's insight into the statements regarding backlog as an indicator that planned operations may have commenced, but the fact that there been no revenue on the units, the Company concluded that it qualifies as a development stage enterprise under the guidance. In addition, please note that LPR units shipped were of a limited production nature and are subject to a test period and after full commercial release, are upgraded to a commercial release version of the PacBio RS.

The Company expects its full commercial units to launch early 2011, which at that time the Company will have commenced its "planned principal operations".

Note 2. Summary of Significant Accounting Policies, page F-10

Unaudited Interim Financial Information, page F-10

72. Revise this note, as appropriate, to also discuss the presentation of the statements of operations and cash flows for the period from July 14, 2000 (date of inception) to June 30, 2010.

In response to the Staff's comment, the Company has revised its disclosure on page F-10 as requested.

Revenue Recognition, page F-14

73. We note that you recognize as revenue cost reimbursements from government grants. Please provide us with your analysis of the accounting for government grants. Explain why you concluded such cost reimbursements should be recorded as revenues. Cite any authoritative accounting literature you relied on in setting your accounting policy.

The Company has received grant awards from the National Institute of Health ("NIH") on a fixed price, best efforts basis. For government-sponsored research and development grants, the AICPA industry guide, *Audits of Federal Government Contractors*, addresses certain best-efforts research and development cost-sharing arrangements. In accordance with the guide, the amounts funded by the government should be recognized as an offset to the contractor's research and development expense if the government is the sole or principal expected ultimate customer for the research and development activity or products directly resulting from the research and development activity subject to the arrangements. Based on the terms of the Company's grant agreements with NIH, the government is not deemed to be the sole or principal expected ultimate customer of the research and development results. Accordingly the accounting for the government grants the Company has received are not subject to the provisions of the AICPA guide.

Outside of the accounting for government grants where the federal government is the sole customer, US GAAP provides limited guidance on the accounting for government grants received by for-profit companies. As such the Company has considered the US GAAP guidance related to general revenue recognition and the guidance related to income statement classification for R&D reimbursements.

In accordance with SAB Topic 13 revenue generally is realized or realizable and earned when persuasive evidence of an arrangement exists, delivery has occurred or services have been rendered, the seller's price to the buyer is fixed or determinable, and collectibility is reasonably assured.

Management believes revenue recognition for the amount of the qualifying expenditure is appropriate given the following analogy to the SAB Topic 13 criteria for revenue recognition:

- Management has previously obtained a notice of award from the government agency having authority to obligate the respective parties to the grant (i.e., evidence of an arrangement).
- The actual amount of the qualifying reimbursement expenditure is known because it has been incurred, through the transfer of cash or other company assets, in the process of performing R&D activities consistent with those specified in the government grant (i.e., fixed or determinable price).
- At the point in time an R&D expenditure that qualifies for reimbursement under the terms of the Company's government grants has been incurred, the R&D activities have been performed (i.e. delivery/performance).
- Although government agencies maintain the right to adjust the total amount committed under grants in the event government appropriations change, once a qualifying expenditure has been incurred, the government agency no longer has the ability to avoid payment under the Company's grant terms (i.e., collectability).

In accordance with ASC 605-45, *Principal Agent Considerations*, an entity is determined to be the principal and revenue should be recorded on a gross basis in transactions where the entity has the discretion to choose suppliers, is involved in determining the nature, type, characteristics, or specifications of the product or services, bears credit risk and performs part of the services. ASC 605-45 also notes that reimbursements received for out-of-pocket expenses incurred shall be characterized as revenue in the income statement. Under the grant awards, the Company has discretion to choose suppliers, determines the nature, type and specifications of the research activities, bears the credit risk in the event the grant is not received and performs all of the research and development services. Accordingly, the Company is considered to be the principal of the research and development activities.

The analogy to US GAAP revenue recognition rules, combined with the conclusions in ASC 605-45 were significant considerations used by management in determining the accounting and classification for government grants.

In the absence of specific US GAAP guidance related to government grants, the Company also considered the guidance provided in IAS ("International Accounting Standards") 20, *Accounting for Government Grants of Government Assistance* which states that government grants shall not be recognized until there is reasonable assurance that: (a) the entity will comply with the conditions attached to them; and (b) the grants will be received. IAS 20 further states that government grants shall be recognized in profit or loss on a systematic basis over the periods in which the entity recognizes as expenses the related costs for which the grants are intended to compensate.

Therefore, considering all of the abovementioned guidance, the Company concluded that the NIH grants should be recorded as revenue when the related costs are incurred and it has met all the conditions under which the government grants were provided.

Convertible Preferred Stock Warrants, page F-18

74. ***We note that upon a qualified initial public offering, the unexercised warrants will be automatically converted into warrants to purchase common stock. We further note your disclosure here and in pro forma presentations throughout the filing that upon conversion, the liability related to the convertible preferred stock warrants will be reclassified to additional paid-in capital. Please revise to describe the material terms of the post-conversion common stock warrants. In addition, provide us with your analysis of the accounting for the post-conversion common stock warrants.***

The Company respectfully directs the Staff's attention to page F-28 for complete disclosure of the facts and circumstances giving rise to the warrants as well as a discussion of the material terms of the convertible preferred stock warrants. The pre-conversion and post-conversion terms of the warrants will remain largely identical with the exception of the conversion feature and the potential for possible redemption under certain circumstances outside of the Company's control which resides in the convertible preferred stock but will lapse upon replacement of the underlying class of equity to common stock.

In evaluating the post-conversion accounting for the Company's common stock warrants, the Company determined that liability classification of its preferred stock warrants, previously required pursuant to ASC 480, will cease upon conversion of underlying convertible preferred stock, a temporary or mezzanine equity instrument, into common stock, a permanent equity instrument.

The Company then considered ASC 815. ASC 815-10 establishes the accounting and reporting standards for derivative instruments. When determining whether the common stock warrants were within the scope of ASC 815-10, the Company considered the scope exceptions provided for by ASC 815-10, which states that if the contract issued is both (1) indexed to its own stock and (2) classified in stockholders' equity in its statement of financial position, the contract is not subject to derivative accounting and thus not subject to the guidance in ASC 815-10. The Company notes that the common stock warrants will be indexed solely to its common stock and thus, the first criterion will be satisfied.

The Company then considered whether the warrants will meet the second criterion for a scope exception under ASC 815-10. In assessing whether the warrants would be classified in stockholders' equity in the Company's statement of financial position, the Company analyzed the guidance provided by ASC 815-40. ASC 815-40 provides guidance on the proper recognition, measurement, and classification of certain freestanding financial instruments that are indexed to, and potentially settled in, an entity's own stock.

After analysis of the conditions specified in ASC 815-40-25-11 through ASC 815-40-25-35 management determined that there will be no provisions in the terms of the common stock warrants, issued upon conversion of preferred stock to common stock upon the completion of a qualifying IPO, that will subject the Company to a potential requirement to provide cash or net-cash settlement to the holders of the common stock warrants.

Because the underlying stock will not be mandatorily redeemable pursuant to ASC 480 and because the criteria for equity classification under ASC 815 will have been satisfied, the Company concluded that the common stock warrants issued to replace preferred stock warrants upon the occurrence of a qualifying IPO will be classified as equity and therefore will be reclassified to additional paid-in capital.

Note 11. Stock Option Plans, page 30

75. Please revise to disclose the weighted average grant date fair value of options granted during each year ended December 31, 2007, 2008 and 2009 and the six-month periods ended June 30, 2009 and 2010. Refer to paragraph 718-10-50-2(d)(1) of the FASB Accounting Standards Codification.

The Company respectfully refers the Staff to this disclosure on page F-35.

Item 15. Recent sales of unregistered securities, page II-2

76. We refer to the second bullet point at the bottom of page II-2. Please revise to clarify which exemption from registration was claimed for each transaction; we note in this regard your reference to "Section 4(2) of the Securities Act, or Rule 506 of the Regulation D." If your disclosure in response to this comment reveals reliance on Regulation D, please tell us when you filed the related Form D.

In response to the Staff's comment, the Company respectfully advises the Staff that the sale and issuance of its Series E convertible preferred stock was exempt from the registration requirements of the Securities Act in reliance on Section 4(2) of the Securities Act and Rule 506 of Regulation D. The Company filed a Form D with the Securities and Exchange Commission on July 25, 2008. The sale and issuance of the Company's Series F convertible preferred stock was exempt from the registration requirements of the Securities Act in reliance on Section 4(2) of the Securities Act.

The Company has revised its disclosure in this section of the registration statement on page II-2 to clarify which exemption from registration was claimed for each transaction.

Item 16. Exhibits and financial statements schedules, page 11-3

77. We note your pending request for confidential treatment. We will provide any comments on your request in a separate letter. Comments on your request must be resolved before we may accelerate the effectiveness of this registration statement.

The Company respectfully acknowledges the Staff's comment.

Signatures, page 11-6

78. Note that your controller or principal accounting officer must sign the registration statement. Refer to instruction 1 to the Signatures portion of Form S-1. Please revise accordingly.

The Company respectfully acknowledges the Staff's comment and advises the Staff that the principal accounting officer has signed Amendment No. 1 to the registration statement.

Exhibit 23.1

79. Please provide an updated consent from your independent auditor as required by Regulation S-K Item 601(b)(23)(i) prior to requesting effectiveness.

The Company respectfully acknowledges the Staff's comment and advises the Staff that it will provide an updated consent from its independent auditor as required by Regulation S-K Item 601(b)(23)(i) prior to requesting effectiveness.

* * * * *

Please direct your questions or comments regarding the Company's responses or Amendment No. 1 to Larry W. Sonsini, Donna M. Petkanics or me at (650) 493-9300. Thank you for your assistance.

Sincerely,

WILSON SONSINI GOODRICH & ROSATI
Professional Corporation

/s/ Glenn J. Luinenburg

Glenn J. Luinenburg

Enclosures

cc (w/encl.): Hugh C. Martin
Matthew B. Murphy
Pacific Biosciences of California, Inc.

Larry W. Sonsini, Esq.
Donna M. Petkanics, Esq.
Wilson Sonsini Goodrich & Rosati, P.C.

Alan F. Denenberg, Esq.
Davis Polk & Wardwell LLP

Tracy Lefteroff
Jeff Womer
PricewaterhouseCoopers LLP