

PACIFIC BIOSCIENCES OF CALIFORNIA, INC.

Form 424B4

April 30, 2013

Table of Contents

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PROSPECTUS

Shares of Common Stock Issuable Upon Exercise of Warrants

Pacific Biosciences of California, Inc.

This prospectus relates solely to the resale or other disposition by the selling stockholders identified in the prospectus of up to 5,500,000 shares of our common stock issuable upon the exercise of warrants plus an indeterminate number of shares of common stock that may be issued as a result of stock splits, stock dividends or similar transactions as described in the warrants.

The selling stockholders or their pledgees, donees, transferees or other successors-in-interest, may, from time to time, sell, transfer, or otherwise dispose of any or all of their shares through public or private transactions at prevailing market prices, at prices related to prevailing market prices or at privately negotiated prices.

We are not selling any common stock under this prospectus, and will not receive any proceeds from the sale of the shares issuable upon exercise of the warrants. To the extent the warrants are exercised for cash, if at all, we will receive the exercise price for the warrants. The selling stockholders will sell the shares in accordance with the Plan of Distribution set forth in this prospectus. The selling stockholders will bear all commissions and discounts, if any, attributable to the sales of shares. We will bear all costs, expenses and fees in connection with the registration of the shares.

Our common stock is listed on the Nasdaq Global Select Market under the symbol PACB. On April 18, 2013, the last reported sale price of our common stock was \$2.02.

The selling stockholders and any broker-dealer executing sell orders on behalf of the selling stockholders, may be deemed to be underwriters within the meaning of the Securities Act of 1933, as amended (the Securities Act). Commissions received by any broker-dealer may be deemed to be underwriting commissions under the Securities Act. See Plan of Distribution.

INVESTING IN OUR COMMON STOCK INVOLVES SIGNIFICANT RISKS. FOR A DISCUSSION OF SOME OF THE RISKS INVOLVED, SEE RISK FACTORS BEGINNING ON PAGE 3 OF THIS PROSPECTUS.

NEITHER THE SECURITIES AND EXCHANGE COMMISSION NOR ANY STATE SECURITIES COMMISSION HAS APPROVED OR DISAPPROVED OF THESE SECURITIES OR PASSED UPON THE ADEQUACY OR ACCURACY OF THIS PROSPECTUS. ANY REPRESENTATION TO THE CONTRARY IS A CRIMINAL OFFENSE.

The date of this prospectus is April 29, 2013

Table of Contents

Table of Contents

	Page
<u>Prospectus Summary</u>	1
<u>The Offering</u>	2
<u>Risk Factors</u>	3
<u>Forward-Looking Statements</u>	3
<u>Description of Financing Transaction and Warrants</u>	4
<u>Use of Proceeds</u>	6
<u>Price Range of our Common Stock</u>	6
<u>Dividend Policy</u>	6
<u>Description of Capital Stock</u>	7
<u>Selling Stockholders</u>	10
<u>Plan of Distribution</u>	12
<u>Legal Matters</u>	15
<u>Experts</u>	15
<u>Where You Can Find More Information</u>	15
<u>Information Incorporated by Reference</u>	16

We have not authorized anyone to provide you with information that is different from 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 other information that others may give you. This prospectus is not an offer to sell or a solicitation of an offer to buy securities in any jurisdiction where such offer or sale of securities would be unlawful. You should not assume that the information in this prospectus, including any information incorporated by reference or in any free writing prospectus prepared by or on behalf of us or to which we have referred you, is accurate as of any date other than their respective dates. If any statement in one of these documents is inconsistent with a statement in another document having a later date for example, a document incorporated by reference in this prospectus the statement in the document having the later date modifies or supersedes the earlier statement.

Table of Contents

PROSPECTUS SUMMARY

This summary description about us and our business highlights selected information contained elsewhere in this prospectus or incorporated in this prospectus by reference. This summary does not contain all of the information you should consider before investing in our securities. You should carefully read this entire prospectus, including each of the documents incorporated herein by reference, before making an investment decision. As used in this prospectus, we, us, Pacific Biosciences, PacBio, the Company and our refer to Pacific Biosciences of California, Inc., a Delaware corporation.

Pacific Biosciences of California, Inc.

Overview

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

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

Since our inception, we have incurred significant net losses and we expect to continue to experience significant losses as we invest in developing and taking advantage of market opportunities for our products, servicing and supporting initial customers, development of enhancements and updates to existing products, development of future products, and sales and administrative infrastructure. As of December 31, 2012, we had an accumulated deficit of approximately \$536.0 million. We incurred net losses of \$94.5 million, \$109.4 million and \$140.2 million in 2012, 2011 and 2010, respectively.

Corporate Information

Pacific Biosciences of California, Inc., formerly Nanofluidics, Inc., was incorporated in the State of Delaware in 2000. Our executive offices are located at 1380 Willow Road, Menlo Park, California 94025, and our telephone number is (650) 521-8000. We maintain a website at www.pacificbiosciences.com where general information about us is available. The Company's website, and the information contained therein, is not a part of this prospectus.

Table of Contents

THE OFFERING

This prospectus relates to the sale by the selling stockholders of shares of our common stock issuable upon the exercise of certain outstanding warrants, or the Warrants.

Common stock offered by selling stockholders: 5,500,000 shares of common stock issuable upon exercise of the Warrants plus an indeterminate number of shares of common stock that may be issued as a result of stock splits, stock dividends or similar transactions as described in the Warrant

Common stock outstanding after this offering: 66,323,575 shares assuming full exercise of the Warrants

NASDAQ Global Select Market symbol: PACB

Use of proceeds: We will not receive any proceeds from the sale or other disposition of the shares of common stock offered hereby. However, if all of the Warrants were exercised for cash, we would receive gross proceeds of approximately \$14.5 million. Any funds received from the exercise of the Warrants will be used for general corporate purposes.

Risk factors: See Risk Factors beginning on page 3 and the other information included in this prospectus or incorporated by reference into the prospectus for a discussion of factors you should consider before making an investment decision.

The number of shares of our common stock to be outstanding immediately after this offering is based on 60,823,575 shares outstanding as of April 10, 2013 and excludes:

12,015,743 shares of our common stock issuable upon exercise of stock options outstanding as of December 31, 2012, having a weighted-average exercise price of approximately \$5.37 per share; and

an aggregate of 3,338,954 shares of our common stock available for issuance or future grant as of December 31, 2012 under our 2010 Equity Incentive Plan, 2010 Outside Director Equity Incentive Plan and our 2010 Employee Stock Purchase Plan.

Table of Contents

RISK FACTORS

An investment in our securities involves a high degree of risk. Prior to making a decision about investing in our securities, you should carefully consider the risks, uncertainties and assumptions discussed under Item 1A, Risk Factors, in our Annual Report on Form 10-K for the fiscal year ended December 31, 2012 and any updates described in our Annual Report on Form 10-K, Quarterly Reports on Form 10-Q and Current Reports on Form 8-K, all of which are incorporated herein by reference and may be amended, supplemented or superseded from time to time by other reports we file with the SEC in the future, together with information in this prospectus and any other information incorporated by reference into this prospectus. See the section of this prospectus entitled Where You Can Find More Information. The risks and uncertainties we have described are not the only ones we face. Additional risks and uncertainties not presently known to us or that we currently deem immaterial may also affect our operations. The occurrence of any of these known or unknown risks might cause you to lose all or part of your investment in the offered securities.

FORWARD-LOOKING STATEMENTS

This prospectus and the information and documents incorporated by reference in this prospectus contain certain statements that constitute forward-looking statements within the meaning of Section 27A of the Securities Act of 1933 and Section 21E of the Exchange Act, and include, but are not limited to, statements regarding the sequencing advantages of our SMRT technology, our market opportunity, our strategic plans, our expectation regarding the conversion of backlog to revenue, our manufacturing plans, our research and development plans, our competition, our intent regarding dividends, our expectation regarding our unrecognized income tax benefits, the sufficiency of our cash, cash equivalents and investments to fund our projected operating requirements, and the effects of recent accounting pronouncements on our financial statements. Such statements may be signified by terms such as anticipates, believes, could, seeks, estimates, expects, intends, may, plans, projects, should, will, would or similar expressions and the negatives of those terms. Those statements appear in this prospectus and the documents incorporated herein by reference and include statements regarding the intent, belief or current expectations of the company and management that are subject to known and unknown risks, uncertainties and assumptions and other factors that could cause actual results and the timing of certain events to differ materially from future results expressed or implied by such forward-looking statements. Factors that could cause or contribute to such differences include, but are not limited to, those discussed in the section of this prospectus entitled Risk Factors set forth above.

This prospectus and the information and documents incorporated by reference in this prospectus also contain statements that are based on management's current expectations and beliefs, including estimates and projections about our company, industry, financial condition, results of operations and other matters. These statements are not guarantees of future performance and are subject to numerous risks, uncertainties, and assumptions that are difficult to predict.

Because forward-looking statements are inherently subject to risks and uncertainties, some of which cannot be predicted or quantified, you should not rely upon forward-looking statements as predictions of future events. The events and circumstances reflected in the forward-looking statements may not be achieved or occur and actual results could differ materially from those projected in the forward-looking statements. Except as required by applicable law, including the securities laws of the United States and the rules and regulations of the SEC, we do not plan to publicly update or revise any forward-looking statements contained herein after we distribute this prospectus, whether as a result of any new information, future events or otherwise.

Table of Contents

DESCRIPTION OF FINANCING TRANSACTION AND WARRANTS

Facility Agreement

On February 5, 2013, we entered into a Facility Agreement, or the Facility Agreement, with entities affiliated with Deerfield Management Company, L.P., collectively, Deerfield, pursuant to which Deerfield agreed to provide \$20.5 million in funding to us, or the Facility. Under the terms of the Facility Agreement, we issued to Deerfield promissory notes in the aggregate principal amount of \$20.5 million, or the Notes. The Notes bear simple interest at a rate of 8.75% per annum, payable quarterly in arrears commencing on April 1, 2013 and on the first business day of each January, April, July and October thereafter. We received net proceeds of \$20.0 million, representing \$20.5 million of gross proceeds, less a \$500,000 facility fee, before deducting other expenses of the transaction.

The Facility has a maximum term of seven years from the date of the Facility Agreement. The Facility Agreement provides for an early repayment of principal in the event we have Net Sales (as defined in the Facility Agreement) of less than \$41 million for the twelve-month period from the beginning of the second calendar quarter of 2014 through the first calendar quarter of 2015, or the Milestone. If the Milestone is not achieved, at Deerfield's option, one-third of the original principal balance of the Facility will become due, on each of the third, fourth and fifth anniversaries of the date of the Facility Agreement.

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

Deerfield has the option to require us to repay the Notes if we complete a Major Transaction (as defined in the Facility Agreement), including a change of control of us or a sale of all or substantially all of our assets. Additionally, the principal balance of the Facility may become immediately due and payable upon an Event of Default, as defined in the Facility Agreement, in which case Deerfield would have the right to require us to repay 100% of the principal amount of the loan, plus any accrued and unpaid interest thereon. The Facility Agreement does not provide for a prepayment of the Facility at our option.

The Facility Agreement also contains various representations and warranties, and affirmative and negative covenants, customary for financings of this type, including restrictions on the ability of us and our subsidiaries to incur additional indebtedness or liens on its assets, except as permitted under the Facility Agreement. In addition, we are required to maintain consolidated cash and cash equivalents on the last day of each calendar quarter of not less than \$2.0 million.

Warrants

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

If we declare and pay dividends or make other distributions to the holders of the Common Stock, the holders of the Warrants are entitled to receive the dividends or distributions as if the holders had exercised the Warrants and held Common Stock. The Warrants expire on the seventh anniversary of the date of issuance and contain certain limitations that prevent a holder from acquiring shares upon exercise of a Warrant that would result in the number of shares

Table of Contents

beneficially owned by such holder to exceed 9.985% of the total number of shares of Common Stock then issued and outstanding. The maximum number of shares of Common Stock that may be issued under the Warrants may not exceed 19.9% of our outstanding capital stock at the time of issuance of the Warrants.

The exercise price may be paid, at the election of the holder, in cash, by a reduction of the principal amount of the holder's Note outstanding under the Facility Agreement or pursuant to certain cashless exercise provisions. In connection with certain Major Transactions (as defined in the Warrant) and certain Events of Default (as defined in the Warrant) including a change of control of us, the sale of all or substantially all of our assets, liquidation, bankruptcy, or in the event the Common Stock ceases to be registered under Section 12 of the Securities Exchange Act of 1934, as amended, the holder may have the option to receive, in exchange for the Warrant, a number of shares of Common Stock equal to the Black-Scholes value of the Warrant (as defined in the Warrant), divided by the closing price of the Common Stock on the trading day immediately preceding the date on which the applicable Major Transaction is consummated or Event of Default is triggered. In certain circumstances in which cash is paid to common stockholders in connection with a Major Transaction, a portion of such payment may be made in cash rather than in shares of Common Stock.

Registration Rights Agreement

In connection with the Facility, we entered into a Registration Rights Agreement with Deerfield, or the Registration Rights Agreement, obligating us to register for resale the shares of Common Stock issuable upon the exercise of the Warrants on a registration statement on Form S-3 to be filed with the Securities and Exchange Commission within 45 days after the date the Warrants were issued. We are required to file additional registration statements to register the resale of any shares underlying the Warrants which are not included in the registration statement. The Registration Rights Agreement will terminate on the date that is eight years from the date of its signing.

Security Agreement

In connection with the Facility Agreement, we entered into a Security Agreement with Deerfield, or the Security Agreement, pursuant to which, as security for our repayment of our obligations under the Facility Agreement, we granted to Deerfield a security interest in substantially all of our property and interests in property, except as otherwise limited in the Security Agreement.

Table of Contents**USE OF PROCEEDS**

We are registering these shares pursuant to registration rights granted to the selling stockholders. We are not selling any securities under this prospectus and will not receive any proceeds from the sale or other disposition of the shares covered hereby. The holders of the Warrants are not obligated to exercise their Warrants, and we cannot predict whether holders of the Warrants will choose to exercise all or any of their Warrants or if they will do so for cash or on a cashless basis. However, if all of the Warrants were exercised for cash, we would receive gross proceeds of approximately \$14.5 million. Any funds received from the exercise of the Warrants will be used by us for general corporate purposes.

We have agreed to pay all costs, expenses and fees relating to registering the shares of our common stock referenced in this prospectus. The selling stockholders will pay any brokerage commissions and/or similar charges incurred in connection with the sale or other disposition by them of the shares covered hereby.

PRICE RANGE OF OUR COMMON STOCK

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

	High	Low
2011		
First Quarter	\$ 16.30	\$ 12.94
Second Quarter	\$ 13.53	\$ 10.44
Third Quarter	\$ 12.24	\$ 3.21
Fourth Quarter	\$ 4.07	\$ 2.28
2012		
First Quarter	\$ 5.04	\$ 2.94
Second Quarter	\$ 3.63	\$ 1.82
Third Quarter	\$ 2.32	\$ 1.70
Fourth Quarter	\$ 1.85	\$ 1.10
2013		
First Quarter	\$ 3.04	\$ 1.80
Second Quarter (through April 18, 2013)	\$ 2.34	\$ 2.00

As of April 16, 2013, there were approximately 62 stockholders of record of our common stock, although we believe that there are a significantly larger number of beneficial owners of our common stock.

The foregoing table shows only historical comparisons. These comparisons may not provide meaningful information to you in determining whether to purchase shares of our common stock. You are urged to obtain current market quotations for our common stock and to review carefully the other information contained in this prospectus or incorporated by reference herein. See the section of this prospectus entitled "Where You Can Find More Information."

DIVIDEND POLICY

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

Table of Contents

DESCRIPTION OF CAPITAL STOCK

The following information describes our common stock and preferred stock, as well as certain provisions of our amended and restated certificate of incorporation and bylaws. This description is only a summary. You should also refer to our certificate of incorporation and bylaws, which have been filed with the SEC as exhibits to our registration statement, of which this prospectus forms a part.

General

Our authorized capital stock consists of 1,000,000,000 shares of common stock with a \$0.001 par value per share, and 50,000,000 shares of undesignated preferred stock with a \$0.001 par value per share. Our board of directors may establish the rights and preferences of the preferred stock from time to time. As of April 10, 2013, there were 60,823,575 shares of common stock issued and outstanding.

Common Stock

Each holder of our common stock is entitled to one vote for each share on all matters to be voted upon by the stockholders. Subject to any preferential rights of any outstanding preferred stock, holders of our common stock are entitled to receive ratably the dividends, if any, as may be declared from time to time by the board of directors out of funds legally available therefor. We have never declared or paid any cash dividend on our capital stock and do not anticipate paying any cash dividends in the foreseeable future. In the event of our liquidation, dissolution or winding up, holders of our common stock are entitled to share ratably in our assets remaining after the payment of liabilities and any preferential rights of any outstanding preferred stock.

Holders of our common stock have no preemptive or conversion rights or other subscription rights, and there are no redemption or sinking fund provisions applicable to the common stock. The outstanding shares of common stock are fully paid and non-assessable. The rights, preferences and privileges of the holders of our common stock are subject to, and may be adversely affected by, the rights of the holders of shares of any series of preferred stock that we may designate and issue in the future.

Our common stock is listed on the NASDAQ Global Select Market under the symbol **PACB**. The transfer agent and registrar for the common stock is Computershare Shareowner Services LLC. Its address is 480 Washington Boulevard, Jersey City, New Jersey 07310, and its telephone number is (866) 401-4874.

Preferred Stock

The following description of preferred stock is not complete. These descriptions are qualified in their entirety by reference to our amended and restated certificate of incorporation and the certificate of designation relating to any series of preferred stock. The rights, preferences, privileges and restrictions of the preferred stock of each series will be fixed by the certificate of designation relating to that series.

Under the terms of our amended and restated certificate of incorporation, our board of directors is authorized to issue shares of preferred stock in one or more series without stockholder approval. Our board of directors has the discretion to determine the rights, preferences, privileges and restrictions, including voting rights, dividend rights, conversion rights, redemption privileges and liquidation preferences, of each series of preferred stock. There are no restrictions presently on the repurchase or redemption of any shares of our preferred stock.

Effect of Certain Provisions of our Amended and Restated Certificate of Incorporation and Bylaws and the Delaware Anti-Takeover Statute

Some provisions of Delaware law and our amended and restated certificate of incorporation and bylaws contain provisions that could make the following transactions more difficult:

acquisition of us by means of a tender offer;

Table of Contents

acquisition of us by means of a proxy contest or otherwise; or

removal of our incumbent officers and directors.

Those provisions, summarized below, are expected to discourage coercive takeover practices and inadequate takeover bids and to promote stability in our management. These provisions are also designed to encourage persons seeking to acquire control of us to first negotiate with our board of directors.

Amended and Restated Certificate of Incorporation and Bylaws

Our amended and restated certificate of incorporation and our bylaws provide for the following:

Undesignated Preferred Stock. The ability to authorize undesignated preferred stock makes it possible for our board of directors to issue one or more series of preferred stock with voting or other rights or preferences that could impede the success of any attempt to change control of our company. These and other provisions may have the effect of deferring hostile takeovers or delaying changes in control or management of our company.

Stockholder Meetings. Our bylaws provide that in general a special meeting of stockholders may be called only by our board of directors, its chairman or our president.

Requirements for Advance Notification of Stockholder Nominations and Proposals. Our bylaws establish advance notice procedures with respect to stockholder proposals and the nomination of candidates for election as directors, other than nominations made by or at the direction of our board of directors or a committee of the board of directors.

Board Classification. Our board of directors is divided into three classes. The directors in each class are elected to serve for a three-year term, one class being elected each year by our stockholders. This system of electing and removing directors may tend to discourage a third party from making a tender offer or otherwise attempting to obtain control of us, because it generally makes it more difficult for stockholders to replace a majority of the directors.

Limits on Ability of Stockholders to Act by Written Consent. We have provided in our bylaws that our stockholders may not act by written consent. This limit on the ability of our stockholders to act by written consent may lengthen the amount of time required to take stockholder actions. As a result, a holder controlling a majority of our capital stock would not be able to amend our bylaws or remove directors without holding a meeting of our stockholders called in accordance with our bylaws.

Amendment of Certificate of Incorporation and Bylaws. The amendment of the above provisions of our amended and restated certificate of incorporation and bylaws requires approval by holders of at least two-thirds of our outstanding capital stock entitled to vote generally in the election of directors.

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

Table of Contents

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, (i) shares owned by persons who are directors and also officers, and (ii) 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.

Table of Contents**SELLING STOCKHOLDERS**

We have prepared this prospectus to allow the selling stockholders or their donees, pledgees, transferees or other successors in interest to sell or otherwise dispose of, from time to time, up to an aggregate of 5,500,000 shares of our common stock issuable upon the exercise of the Warrants plus an indeterminate number of shares of common stock that may be issued as a result of stock splits, stock dividends or similar transactions as described in the Warrants. The table below presents information regarding the selling stockholders, the shares of common stock beneficially owned by each of them prior to the issuance of the Warrants, the shares of common stock that they may sell or otherwise dispose of from time to time under this prospectus and the number and percentage of our common stock each of the selling stockholders will own assuming all of the shares covered by this prospectus are sold by the selling stockholders.

We do not know when or in what amounts the selling stockholders may sell or otherwise dispose of the shares of common stock covered hereby. The selling stockholders might not sell or dispose of any or all of the shares covered by this prospectus or may sell or dispose of some or all of the shares other than pursuant to this prospectus. Because the selling stockholders may not sell or otherwise dispose of some or all of the shares covered by this prospectus and because there are currently no agreements, arrangements or understandings with respect to the sale or other disposition of any of the shares, we cannot estimate the number of the shares that will be held by the selling stockholders after completion of the offering. However, for purposes of this table, we have assumed that all of the shares of common stock covered by this prospectus will be sold by the selling stockholders and that any other shares of our common stock beneficially owned by these selling stockholders will continue to be beneficially owned.

The information in the table is based on 60,823,575 shares outstanding as of April 10, 2013 and was prepared based on information supplied to us by the selling stockholders. Beneficial ownership is determined in accordance with Section 13(d) of the Exchange Act and generally includes voting or investment power with respect to securities and including any securities that grant the selling stockholder the right to acquire shares of common stock within 60 days of April 10, 2013. Other than the transactions referred to herein and in documents filed by us with the SEC pursuant to Section 13(a), 13(c), 14 or 15(d) of the Exchange Act, the selling stockholders have not within the past three years had any position, office or other material relationship with us or any of our subsidiaries other than as a holder of our securities.

Name of Selling Stockholder(1)	Number of Shares Beneficially Owned Prior to the Offering(2)	Number of Shares Offered Hereby(3)	Number of Shares Beneficially Owned After the Offering	Percent of Class Beneficially Owned After the Offering
Deerfield Private Design Fund II, L.P.	2,000,390(3)(4)	2,000,390		
Deerfield Private Design International II, L.P.	2,292,293(3)(4)	2,292,293		
Deerfield Special Situations Fund, L.P.	1,974,655(4)(5)	706,280	1,268,375	2.09%
Deerfield Special Situations International Master Fund, L.P.	1,607,896(4)(6)	501,037	1,106,859	1.82%

- (1) Information concerning named selling stockholders or future transferees, pledgees, assignees, distributees, donees or successors of or from any such stockholder or others who later hold any selling stockholder's interests will be set forth in supplements to this prospectus, absent circumstances indicating that the change is material. In addition, post-effective amendments to the registration statement of which this prospectus forms a part will be filed to disclose any material changes to the plan of distribution from the description in the final prospectus.

Table of Contents

- (2) Beneficial ownership is determined in accordance with the rules and regulations of the SEC. In computing the number of shares beneficially owned by a person and the percentage ownership of that person, securities that are currently convertible or exercisable into shares of our common stock, or convertible or exercisable into shares of our common stock within 60 days of the date hereof are deemed outstanding. Such shares, however, are not deemed outstanding for the purposes of computing the percentage ownership of any other person.
- (3) Represents shares of common stock issuable upon exercise of warrants. The number of shares of common stock issuable upon exercise of the warrants is subject to adjustment as a result of stock splits, stock dividends or similar transactions as set forth in the warrants. As a result, the number of shares issuable upon exercise of the warrants may increase or decrease in the future. Only the shares issuable upon exercise of the Warrants are being offered hereby.
- (4) James E. Flynn, with an address at 780 Third Avenue, 37th Floor, New York, New York 10017 has voting and disposition power over these securities.
- (5) Comprised of 706,280 shares of common stock issuable upon exercise of the warrants and 1,268,375 shares of common stock.
- (6) Comprised of 501,037 shares of common stock issuable upon exercise of the warrants and 1,106,859 shares of common stock.

Table of Contents

PLAN OF DISTRIBUTION

The selling stockholders, including their pledgees, donees, transferees, distributees, beneficiaries or other successors in interest, may from time to time offer some or all of the shares of common stock covered by this prospectus. To the extent required, this prospectus may be amended and supplemented from time to time to describe a specific plan of distribution.

The selling stockholders will not pay any of the costs, expenses and fees in connection with the registration and sale of the shares covered by this prospectus, but they will pay any and all underwriting discounts, selling commissions and stock transfer taxes, if any, attributable to sales of the shares. We will not receive any proceeds from the sale of the shares of our common stock covered hereby.

The selling stockholders may sell the shares of common stock covered by this prospectus from time to time, and may also decide not to sell all or any of the shares of common stock that they are allowed to sell under this prospectus. The selling stockholders will act independently of us in making decisions regarding the timing, manner and size of each sale. These dispositions may be at fixed prices, at market prices prevailing at the time of sale, at prices related to such prevailing market prices, at varying prices determined at the time of sale, or at privately negotiated prices. Sales may be made by the selling stockholders in one or more types of transactions, which may include:

purchases by underwriters, dealers and agents who may receive compensation in the form of underwriting discounts, concessions or commissions from the selling stockholders and/or the purchasers of the shares of common stock for whom they may act as agent;

one or more block transactions, including transactions in which the broker or dealer so engaged will attempt to sell the shares of common stock as agent but may position and resell a portion of the block as principal to facilitate the transaction, or in crosses, in which the same broker acts as an agent on both sides of the trade;

ordinary brokerage transactions or transactions in which a broker solicits purchases;

purchases by a broker-dealer or market maker, as principal, and resale by the broker-dealer for its account;

the pledge of shares of common stock for any loan or obligation, including pledges to brokers or dealers who may from time to time effect distributions of shares of common stock;

short sales or transactions to cover short sales relating to the shares of common stock;

one or more exchanges or over the counter market transactions;

through distribution by a selling stockholder or its successor in interest to its members, general or limited partners or shareholders (or their respective members, general or limited partners or shareholders);

privately negotiated transactions;

the writing of options, whether the options are listed on an options exchange or otherwise;

distributions to creditors and equity holders of the selling stockholders; and

any combination of the foregoing, or any other available means allowable under applicable law.

Table of Contents

A selling stockholder may also resell all or a portion of its common stock in open market transactions in reliance upon Rule 144 under the Securities Act provided it meets the criteria and conforms to the requirements of Rule 144.

The selling stockholders may enter into sale, forward sale and derivative transactions with third parties, or may sell securities not covered by this prospectus to third parties in privately negotiated transactions. If the applicable prospectus supplement indicates, in connection with those sale, forward sale or derivative transactions, the third parties may sell securities covered by this prospectus and the applicable prospectus supplement, including in short sale transactions and by issuing securities that are not covered by this prospectus but are exchangeable for or represent beneficial interests in the common stock. The third parties also may use shares received under those sale, forward sale or derivative arrangements or shares pledged by the selling stockholder or borrowed from the selling stockholders or others to settle such third-party sales or to close out any related open borrowings of common stock. The third parties may deliver this prospectus in connection with any such transactions. Any third party in such sale transactions will be an underwriter and will be identified in the applicable prospectus supplement (or a post-effective amendment to the registration statement of which this prospectus is a part).

In addition, the selling stockholders may engage in hedging transactions with broker-dealers in connection with distributions of common stock or otherwise. In those transactions, broker-dealers may engage in short sales of securities in the course of hedging the positions they assume with selling stockholders. The selling stockholders may also sell securities short and redeliver securities to close out such short positions. The selling stockholders may also enter into option or other transactions with broker-dealers which require the delivery of securities to the broker-dealer. The broker-dealer may then resell or otherwise transfer such securities pursuant to this prospectus. The selling stockholders also may loan or pledge shares, and the borrower or pledgee may sell or otherwise transfer the common stock so loaned or pledged pursuant to this prospectus. Such borrower or pledgee also may transfer those shares of common stock to investors in our securities or the selling stockholders' securities or in connection with the offering of other securities not covered by this prospectus.

To the extent necessary, we may amend or supplement this prospectus from time to time to describe a specific plan of distribution. We will file a supplement to this prospectus, if required, upon being notified by the selling stockholders that any material arrangement has been entered into with a broker-dealer for the sale of shares through a block trade, offering or a purchase by a broker or dealer. The applicable prospectus supplement will set forth the specific terms of the offering of securities, including:

the number of shares of common stock offered;

the price of such common stock;

the proceeds to the selling stockholders from the sale of such common stock;

the names of the underwriters or agents, if any;

any underwriting discounts, agency fees or other compensation to underwriters or agents; and

any discounts or concessions allowed or paid to dealers.

The selling stockholders may, or may authorize underwriters, dealers and agents to, solicit offers from specified institutions to purchase common stock from the selling stockholders at the public offering price listed in the applicable prospectus supplement. These sales may be made under delayed delivery contracts or other purchase contracts that provide for payment and delivery on a specified future date. Any contracts like this will be described in and be subject to the conditions listed in the applicable prospectus supplement.

Broker-dealers or agents may receive compensation in the form of commissions, discounts or concessions from the selling stockholders. Broker-dealers or agents may also receive compensation from the purchasers of common stock for whom they act as agents or to whom they sell as principals, or both. Compensation as to a particular broker-dealer might be in excess of customary commissions and will be in amounts to be negotiated in connection with transactions involving securities. In effecting sales, broker-dealers engaged by the selling stockholders may arrange for other broker-dealers to participate in the resales.

Table of Contents

In connection with sales of common stock covered hereby, the selling stockholders and any underwriter, broker-dealer or agent and any other participating broker-dealer that executes sales for the selling stockholders may be deemed to be an underwriter within the meaning of the Securities Act of 1933, as amended, or the Securities Act. Accordingly, any profits realized by the selling stockholders and any compensation earned by such underwriter, broker-dealer or agent may be deemed to be underwriting discounts and commissions. Because the selling stockholders may be deemed to be underwriters under the Securities Act, the selling stockholders must deliver this prospectus and any prospectus supplement in the manner required by the Securities Act. This prospectus delivery requirement may be satisfied through the facilities of the NASDAQ Global Select Market in accordance with Rule 153 under the Securities Act.

We and the selling stockholders have agreed to indemnify each other against certain liabilities, including liabilities under the Securities Act. In addition, we or the selling stockholders may agree to indemnify any underwriters, broker-dealers and agents against or contribute to any payments the underwriters, broker-dealers or agents may be required to make with respect to, civil liabilities, including liabilities under the Securities Act. Underwriters, broker-dealers and agents and their affiliates are permitted to be customers of, engage in transactions with, or perform services for us and our affiliates or the selling stockholders or their affiliates in the ordinary course of business.

The selling stockholders will be subject to applicable provisions of Regulation M of the Securities Exchange Act of 1934 and the rules and regulations thereunder, which provisions may limit the timing of purchases and sales of any of the common stock by the selling stockholders. Regulation M may also restrict the ability of any person engaged in the distribution of the common stock to engage in market-making activities with respect to the common stock. These restrictions may affect the marketability of such common stock.

In order to comply with applicable securities laws of some states, the common stock may be sold in those jurisdictions only through registered or licensed brokers or dealers. In addition, in certain states the common stock may not be sold unless they have been registered or qualified for sale in the applicable state or an exemption from the registration or qualification requirements is available. In addition, any common stock of a selling stockholder covered by this prospectus that qualify for sale pursuant to Rule 144 under the Securities Act may be sold in open market transactions under Rule 144 rather than pursuant to this prospectus.

In connection with an offering of common stock under this prospectus, the underwriters may purchase and sell securities in the open market. These transactions may include short sales, stabilizing transactions and purchases to cover positions created by short sales. Short sales involve the sale by the underwriters of a greater number of securities than they are required to purchase in an offering. Stabilizing transactions consist of certain bids or purchases made for the purpose of preventing or retarding a decline in the market price of the securities while an offering is in progress.

The underwriters also may impose a penalty bid. This occurs when a particular underwriter repays to the underwriters a portion of the underwriting discount received by it because the underwriters have repurchased securities sold by or for the account of that underwriter in stabilizing or short-covering transactions.

These activities by the underwriters may stabilize, maintain or otherwise affect the market price of the common stock offered under this prospectus. As a result, the price of the common stock may be higher than the price that otherwise might exist in the open market. If these activities are commenced, they may be discontinued by the underwriters at any time. These transactions may be effected on the NASDAQ Global Select Market or another securities exchange or automated quotation system, or in the over-the-counter market or otherwise.

Table of Contents

LEGAL MATTERS

The validity of the securities offered by this prospectus will be passed upon by Wilson Sonsini Goodrich & Rosati, Professional Corporation, Palo Alto, California.

EXPERTS

Ernst & Young LLP, independent registered public accounting firm, has audited our consolidated financial statements included in our Annual Report on Form 10-K as of December 31, 2012 and for each of the two years ended December 31, 2012, and the effectiveness of our internal control over financial reporting as of December 31, 2012, as set forth in their reports, which are incorporated by reference in this prospectus and elsewhere in the registration statement. Our financial statements are incorporated by reference in reliance on Ernst & Young LLP's reports, given on their authority as experts in accounting and auditing.

The consolidated financial statements for the year ended December 31, 2010 incorporated in this Prospectus by reference to the Annual Report on Form 10-K of Pacific Biosciences of California, Inc. for the year ended December 31, 2012 have been so incorporated 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 file annual, quarterly and other reports, proxy statements and other information with the SEC. Our SEC filings are available to the public over the Internet at the SEC's website at <http://www.sec.gov>. You may also read and copy any document we file at the SEC's Public Reference Room at 100 F Street, NE, Washington, D.C. 20549. Please call the SEC at 1-800-SEC-0330 for further information on the Public Reference Room. Our Annual Report on Form 10-K, Quarterly Reports on Form 10-Q, and Current Reports on Form 8-K, including any amendments to those reports, and other information that we file with or furnish to the SEC pursuant to Section 13(a) or 15(d) of the Exchange Act can also be accessed free of charge through the Internet. These filings will be available as soon as reasonably practicable after we electronically file such material with, or furnish it to, the SEC.

We have filed with the SEC a registration statement under the Securities Act relating to the offering of these securities. The registration statement, including the attached exhibits, contains additional relevant information about us and the securities. This prospectus does not contain all of the information set forth in the registration statement. You can obtain a copy of the registration statement, at prescribed rates, from the SEC at the address listed above. The registration statement and the documents referred to below under "Incorporation by Reference" are also available on our Internet website, www.pacificbiosciences.com. We have not incorporated by reference into this prospectus the information on our website, and you should not consider it to be a part of this prospectus.

Table of Contents

INFORMATION INCORPORATED BY REFERENCE

The SEC allows us to incorporate by reference into this prospectus certain information we file with it, which means that we can disclose important information by referring you to those documents. The information incorporated by reference is considered to be a part of this prospectus, and information that we file later with the SEC will automatically update and supersede information contained in this prospectus. We incorporate by reference the documents listed below that we have previously filed with the SEC (excluding any portions of any Form 8-K that are not deemed filed pursuant to the General Instructions of Form 8-K):

our Annual Report on Form 10-K for the fiscal year ended December 31, 2012, including the information specifically incorporated by reference into our Annual Report on Form 10-K for the fiscal year ended December 31, 2012 from our Definitive Proxy Statement on Schedule 14A filed on April 16, 2013;

our Current Reports on Form 8-K filed February 5, 2013 and March 7, 2013; and

the description of our common stock contained in the Registration Statement on Form 8-A relating thereto, including any amendment or report filed for the purpose of updating such description.

We also incorporate by reference into this prospectus additional documents that we may file with the SEC under Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act prior to the completion or termination of the offering, including all such documents we may file with the SEC after the date of the initial registration statement and prior to the effectiveness of the registration statement, but excluding any information deemed furnished and not filed with the SEC. Any statements contained in a previously filed document incorporated by reference into this prospectus is deemed to be modified or superseded for purposes of this prospectus to the extent that a statement contained in this prospectus, or in a subsequently filed document also incorporated by reference herein, modifies or supersedes that statement.

This prospectus may contain information that updates, modifies or is contrary to information in one or more of the documents incorporated by reference in this prospectus. You should rely only on the information incorporated by reference or provided in this prospectus. We have not authorized anyone else to provide you with different information. You should not assume that the information in this prospectus is accurate as of any date other than the date of this prospectus or the date of the documents incorporated by reference in this prospectus.

We will provide to each person, including any beneficial owner, to whom this prospectus is delivered, upon written or oral request, at no cost to the requester, a copy of any and all of the information that is incorporated by reference in this prospectus.

Requests for such documents should be directed to:

Pacific Biosciences of California, Inc.

1380 Willow Road

Menlo Park, California 94025

Attn: Investor Relations

You may also access the documents incorporated by reference in this prospectus through our website at www.pacificbiosciences.com. Except for the specific incorporated documents listed above, no information available on or through our website shall be deemed to be incorporated in this prospectus or the registration statement of which it forms a part.

Table of Contents

Common Stock

PROSPECTUS

April 29, 2013