



PACIFIC  
BIOSCIENCES®

June 13, 2017

**Via EDGAR and E-mail**

Securities and Exchange Commission  
Division of Corporation Finance  
100 F Street, N.E.  
Washington, D.C. 20549-3720

Attention: Martin James  
Eric Atallah  
Timothy Buchmiller  
Caleb French

**Re: Pacific Biosciences of California, Inc.  
Form 10-K for the Fiscal Year Ended December 31, 2016  
Filed March 6, 2017  
File No. 001-34899**

Ladies and Gentlemen:

Pacific Biosciences of California, Inc. (the “**Company**”) is submitting this letter in response to comments from the staff (the “**Staff**”) of the Securities and Exchange Commission set forth in a letter dated May 31, 2017 (the “**Comment Letter**”) with respect to the above-referenced Annual Report on Form 10-K for the Fiscal Year Ended December 31, 2016 (the “**2016 Annual Report**”) filed on March 6, 2017 (File No. 001-34899).

For your convenience, the Staff’s comments set forth in the Comment Letter have been reproduced in bold and italics herein with responses immediately following each comment. References to “we,” “our” or “us” mean the Company or its advisors, as the context may require.

Note 9. Stockholders’ Equity, page 66

Stock-based Compensation, page 68

1. ***We note that in determining the fair value of your employee stock options and your ESPP you have used an expected volatility of 70.0% for years ended December 31, 2016, 2015, and 2014, respectively. We also note from your disclosure on page 56 that your expected volatility is based on the historical volatility of your common stock as well as several comparable publicly listed companies. Please address the following:***
  - ***Explain to us how you weight your historical volatility and the volatility of comparable publicly listed companies in determining your overall expected volatility. Also explain why your expected volatility has remained unchanged for the last 3 years.***

The Company advises the Staff that it develops estimates of the expected volatility of its common stock on a quarterly basis. In doing so, the Company uses the guidance in ASC 718-10-55-35 through 55-41, as well as SAB Topic 14.D.1. The objective of the Company's estimates is to develop assumptions marketplace participants would likely use to determine an exchange price of the Company's options. In doing so, the Company calculates and considers factors such as the historical volatility of the Company's common stock (in accordance with ASC 718-10-55-37.a) as well as the length of time the Company's common stock has been traded and the expected volatility of similar entities (in accordance with ASC 718-10-55-37.c). The Company advises the Staff that it does not have data to derive implied volatility (in accordance with ASC 718-10-55-37.b). The Company takes this approach because, consistent with ASC 718-10-55-38, using the unadjusted historical volatility of the Company's common stock alone may not be appropriate as marketplace participants would not use it without considering the extent to which the future may differ from the past. The Company also reviewed SAB Topic 14.D.1, which indicates that the Staff would not object to the exclusive use of historical volatility if the methodology is applied consistently and certain factors are present. However, this is not the approach the Company has historically adopted and used.

Because volatility is a forward-looking estimate used to project the extent of stock price fluctuations over multiple years, the Company believes the weighting of different factors is highly judgmental and not mechanical. For illustration purposes, the Company has listed below the factors it considered and the basis for the Company's conclusions with respect to such factors as of December 31, 2016 (the Company's most recent annual balance sheet date) and December 31, 2015 (the corresponding prior year's balance sheet date). The Company has performed and documented similar estimation processes in prior periods, consistent with the requirements of ASC 718-10-55-40 and 55-41.

The Company observed that, even though its common stock has traded since October 2010 (i.e., for approximately 6.2 years by December 31, 2016), the Company is still early in its life cycle and, accordingly, its historical volatility is likely not relevant to future periods. In particular, prior to early 2011, the Company primarily focused on developing its technology and it launched the Company's first instrument product, the PacBio RS, in 2011. However, the Company's instrument revenue declined from \$30.2 million in 2011 to \$15.5 million in 2012 and further to \$11.5 million in 2013. In 2013, the Company introduced instrument enhancements to improve reliability and performance by launching the PacBio RS II. Still, while the Company's instrument revenue grew to \$22.1 million in 2014, it declined again to \$18.7 million in 2015. The Company announced and started shipping its new platform, the Sequel System, which provides significant productivity enhancements over the Company's PacBio RS and RS II products, in the second half of 2015. The Company was able to increase its instrument revenues to \$41.0 million in 2016 and \$12.6 million in the quarter ended March 31, 2017. The Company also had a restructuring in 2011, and its number of employees has fluctuated from 431 in 2010 to slightly over 300 in 2011-2014 before increasing back to 438 in 2016. The Company does not currently anticipate a repeat of the same pattern during future years commensurate with the expected term of its outstanding options.

Because of the Company's history, as noted in the preceding paragraph, in addition to considering its historical stock volatility over the prior 6-years (consistent with the estimated term of the Company's options) the Company also calculates and considers its volatility over the most recent 12-month period. This has generally provided an indication that the volatility rates were trending down as compared to the volatility observed immediately after the Company's initial public offering and during its initial product introductions.

The Company does not have implied volatility data, therefore it also obtains additional data points about its expected volatility by looking at the volatility of other industry participants. The Company selects entities that it believes have operations similar to the Company. When there are no comparable peer companies present (e.g., because they were acquired or grew too large compared to the Company), the Company looks at the most recent historical volatility of peer entities when they were believed to be comparable. In all instances, the Company measures their historical volatility based on the term commensurate with the expected term of the Company's options. In selecting the peer entities, the Company applies the factors listed in SAB Topic 14.D.1 Question 6 ("industry, stage of life cycle, size and financial leverage"). The Company believes that the resulting data is relevant for purposes of estimating its expected volatility.

Below the Company has presented certain data that was used to determine its volatility for 2016 and 2015.

	<u>December 31, 2016</u>	<u>December 31, 2015</u>
Company historical data since IPO (2010)	75%	76%
Company historical data for the most recent 12 months	71%	74%
Highest of peer company volatilities	64%	64%
Average of peer companies' volatility	53%	56%
Average of Company and peer companies' volatilities	59%	61%

Similar amounts resulted from the Company's estimation process at other reporting dates. As part of the Company's analysis, it is additionally noted that had the historical volatility of the Company's common stock been solely relied on to develop the volatility assumptions for options granted in 2015 and 2016, the resulting impact would not have been material. Based on the above, the Company concluded, originally during the year ended December 31, 2014, that 70% is a reasonable estimate of its expected volatility. Based on the Company's quarterly estimation process, there have been no significant changes in the data or the Company's business subsequent to such initial conclusion that the Company believes would warrant revisions to this amount. In supporting the Company's conclusion, it believes that the expected volatility is closer to the Company's historical data than to the peer companies' volatility. At the same time, the Company believes peer companies' volatility provides an indication of future volatility, which is also supported by the recent downward trend in the Company's volatility, as illustrated for example, in its most recent 12 months' volatility number (however, the Company does not believe it can solely rely on its most recent 12 months' historical volatility as it covers too short of a period when compared to the expected term of its options).

- ***As the company has been a public company since 2010, please tell us when you expect to no longer consider the volatility rates of comparable publicly listed companies when estimating your expected volatility. Refer to ASC 718-10-55-37 and Question 6 of SAB Topic 14.D.1.***

As noted above, the Company plans to continue to assess the relevant inputs for its volatility calculations on a quarterly basis, and how to weight different data. The Company does not anticipate significant changes to its process until at least December 31, 2017. The Company believes its current process is consistent with ASC 718-10-55-38, which requires entities to consider adjustments to the historical volatility amounts where appropriate to derive expected volatility. The Company does not believe its current approach is inconsistent with SAB Topic 14.D.1 Question 6, as the Company does not believe it currently has sufficient Company-specific information available.

2. ***As a related matter, we note from page 56 that the expected term of your options is estimated based on the simplified method because you have limited historical***

**information available. Please tell us how you have considered the extent of your exercise activity since your initial public offering in your determination to use the simplified method. Also tell us when you expect that sufficient historical information will be available. Refer to Question 6 of SAB Topic 14.D.2.**

The Company advises the Staff that its estimates of expected term are part of the same quarterly close process as the volatility estimates described above in response to Comment No. 1. ASC 718-10-55-31 provides various factors entities should assess when determining the expected term, including the awards' vesting period, historical exercise and termination behavior for similar grants, stock price volatility, blackout periods and employees' ages, length of service and home jurisdictions. As the Company continues to accumulate its historical exercise and termination behavior, the Company reassesses from time to time whether its historical data is sufficient and reasonable. The Company also notes that the simplified method is consistent with the assertion that employees exercise options at approximately an even pace in each period from the vesting date to the expiration date. Thus, what amounts to the "simplified method" is anticipated will produce a reasonable estimate of the expected term as long as the exercise and termination behavior does not deviate significantly from such pattern.

The Company notes that its options provide for a maximum contractual term of 10 years. Thus, the Company's oldest options granted at or after its IPO still have several years before they will begin to expire. Further, the Company's most recent options are relatively early in their lifecycle and many are not yet vested. Also, apart from the exercises and terminations triggered by the Company's restructuring in 2011, the Company has not historically had significant exercises or cancellations of options. For example, the Company had 1.2 million options exercised or cancelled during the year ended December 31, 2016, which was less than 5% of total options outstanding, and less than 10% of options exercisable. Further, only approximately 4.3 million options outstanding and 3.7 million options exercisable were "in the money" at December 31, 2016 (less than 20% of options outstanding and less than 30% of options exercisable).

As discussed above in response to Comment No. 1, the Company has experienced substantial volatility in its business, including fluctuations in its instrument sales and introductions of new products, as well as volatility of its stock price (for instance the Company's stock price was \$16.10 at its IPO, reached a high of \$16.97 on October 28, 2010, and went down to \$1.10 on November 13, 2012). The last reported sale price of the Company's common stock on June 9, 2017 was \$3.35, and as noted above in response to Comment No. 1, at December 31, 2016, less than 20% of the Company's outstanding options and less than 30% of the Company's exercisable options have exercise prices below this stock price. Thus, there are currently no significant economic incentives to exercise. Also, the Company believes that historical data

accumulated from exercises or terminations of options with high exercise prices is not relevant when the Company determines the expected term for the options with exercise prices based on current stock fair values. Additionally, the Company hopes that a continuing focus on the execution of its business plan will result in future increases in its stock price, which would likely accelerate the pace of option exercises. The Company also notes that options granted at this time will not be exercisable for 12-48 months from the grant date due to vesting provisions, further increasing the subjectivity of the Company's estimates.

Based on the above considerations, including those outlined in response to Comment No. 1, the Company concluded that at December 31, 2016 (and prior dates), it did not yet have sufficient historical information to rely on for purposes of determining the expected term of its options. Therefore, the Company believes the assertion of exercises at an even pace over the period from vesting to maximum contractual term date (which equates to the "simplified method") remains reasonable for current option grants. The Company does not anticipate significant changes to this assessment until at least December 31, 2017.

For the reasons noted above, the Company believes that this approach is consistent with SAB Topic 14.D.1 Question 6.

Note 11 – Segment and Geographic Information, page 70

3. ***We note that you include all revenues attributed to customers in North America in one line item. In future filings, please separately disclose revenues for the United States, your country of domicile, in accordance with ASC 280-10-50-41(a).***

The Company acknowledges the Staff's comment, and, in future filings, the Company will include appropriate separate disclosure regarding revenues for the United States in accordance with ASC 280-10-50-41(a).

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If you have any questions or comments regarding this letter, please do not hesitate to contact me at (650) 521-8000.

Sincerely,

/s/ Susan K. Barnes

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Susan K. Barnes  
Chief Financial Officer

cc: Michael Hunkapiller, Chief Executive Officer, Pacific Biosciences of California, Inc.  
Donna Petkanics, Wilson Sonsini Goodrich & Rosati, P.C.  
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