Table of Contents

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

Form 10-Q

(Mark One)

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

For the quarterly period ended March 31, 2025

Or

☐ TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the transition period from to

Commission File Number 001-34899

Pacific Biosciences of California, Inc.

(Exact name of registrant as specified in its charter)

Delaware	**16-1590339**
(State or other jurisdiction of incorporation or organization)	**(I.R.S. Employer Identification No.)**
1305 O'Brien Drive Menlo Park, CA	**94025**
(Address of principal executive offices)	**(Zip Code)**

(650) 521-8000
(Registrant's telephone number, including area code)

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

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common Stock, par value $0.001 per share	PACB	The NASDAQ Stock Market LLC

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

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

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

Large accelerated filer	☐	Accelerated filer	☒
Non-accelerated filer	☐	Smaller reporting company	☐
Emerging growth company	☐		

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. ☐

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

Number of shares outstanding of the issuer's common stock as of April 30, 2025: 300,084,685.

TABLE OF CONTENTS

PART I. FINANCIAL INFORMATION

ITEM 1. FINANCIAL STATEMENTS

PACIFIC BIOSCIENCES OF CALIFORNIA, INC.
CONDENSED CONSOLIDATED BALANCE SHEETS
(Unaudited)

(In thousands, except par value)	March 31, 2025	December 31, 2024
Assets		
Current assets		
Cash and cash equivalents	$ 58,507	$ 55,370
Investments	284,603	334,561
Accounts receivable, net	31,645	27,524
Inventory, net	54,007	58,755
Prepaid expenses and other current assets	15,471	18,781
Short-term restricted cash	690	690
Total current assets	444,923	495,681
Property and equipment, net	24,794	30,505
Operating lease right-of-use assets, net	44,408	16,091
Long-term restricted cash	1,532	1,532
Intangible assets, net	18,182	389,572
Goodwill	317,761	317,761
Other long-term assets	9,189	9,305
Total assets	$ 860,789	$ 1,260,447
Liabilities and Stockholders' Equity		
Current liabilities		
Accounts payable	$ 14,037	$ 16,590
Accrued expenses	29,337	22,595
Deferred revenue, current	15,241	13,864
Operating lease liabilities, current	2,417	10,026
Other liabilities, current	5,570	3,224
Total current liabilities	66,602	66,299
Deferred revenue, non-current	5,855	5,900
Contingent consideration liability, non-current	—	18,700
Operating lease liabilities, non-current	50,480	14,914
Convertible senior notes, net, non-current	646,214	647,494
Other liabilities, non-current	—	546
Total liabilities	769,151	753,853
Commitments and contingencies		
Stockholders' equity		
Preferred stock, $0.001 par value:		
Authorized 50,000 shares; No shares issued or outstanding	—	—
Common stock, $0.001 par value:		
Authorized 1,000,000 shares; issued and outstanding 300,041 and 294,418 shares at March 31, 2025 and December 31, 2024, respectively	300	294
Additional paid-in capital	2,665,958	2,654,804
Accumulated other comprehensive income	381	422
Accumulated deficit	(2,575,001)	(2,148,926)
Total stockholders' equity	91,638	506,594
Total liabilities and stockholders' equity	$ 860,789	$ 1,260,447

See accompanying notes to the condensed consolidated financial statements.

PACIFIC BIOSCIENCES OF CALIFORNIA, INC.
CONDENSED CONSOLIDATED STATEMENTS OF OPERATIONS AND COMPREHENSIVE LOSS
(Unaudited)

(In thousands, except per share amounts)	Three Months Ended March 31, 2025	2024
Revenue:		
Product revenue	$ 31,113	$ 35,009
Service and other revenue	6,040	3,801
Total revenue	37,153	38,810
Cost of Revenue:		
Cost of product revenue	26,333	22,447
Cost of service and other revenue	3,778	3,738
Amortization of acquired intangible assets	4,345	1,343
Loss on purchase commitment	4,068	—
Total cost of revenue	38,524	27,528
Gross (loss) profit	(1,371)	11,282
Operating Expense:		
Research and development	29,053	43,455
Sales, general and administrative	40,168	43,753
Impairment charges	15,000	—
Amortization of acquired intangible assets	362,042	5,506
Change in fair value of contingent consideration	(18,700)	(70)
Total operating expense	427,563	92,644
Operating loss	(428,934)	(81,362)
Interest expense	(1,737)	(3,575)
Other income, net	4,294	6,759
Loss before benefit from income taxes	(426,377)	(78,178)
Income tax (benefit) provision	(302)	—
Net loss	(426,075)	(78,178)
Other comprehensive income:		
Unrealized loss on investments	(41)	(525)
Comprehensive loss	$ (426,116)	$ (78,703)
Net loss per share:		
Basic	$ (1.44)	$ (0.29)
Diluted	$ (1.44)	$ (0.29)
Weighted average shares outstanding used in calculating net loss per share:		
Basic	296,858	269,578
Diluted	296,858	269,578

See accompanying notes to the condensed consolidated financial statements.

PACIFIC BIOSCIENCES OF CALIFORNIA, INC.
CONDENSED CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY
(Unaudited)

	Three Months Ended March 31, 2025					
	Common Stock		Additional Paid-in Capital	Accumulated Other Comprehensive Income	Accumulated Deficit	Total Stockholders' Equity
(In thousands)	Shares	Amount				
Balance at December 31, 2024	294,418	$ 294	$ 2,654,804	$ 422	$ (2,148,926)	$ 506,594
Net loss	—	—	—	—	(426,075)	(426,075)
Other comprehensive loss	—	—	—	(41)	—	(41)
Issuance of common stock in conjunction with equity plans	5,623	6	1,953	—	—	1,959
Share-based compensation expense	—	—	9,201	—	—	9,201
Balance at March 31, 2025	300,041	$ 300	$ 2,665,958	$ 381	$ (2,575,001)	$ 91,638

	Three Months Ended March 31, 2024					
	Common Stock		Additional Paid-in Capital	Accumulated Other Comprehensive Income (Loss)	Accumulated Deficit	Total Stockholders' Equity
(In thousands)	Shares	Amount				
Balance at December 31, 2023	267,744	$ 268	$ 2,539,892	$ 219	$ (1,839,075)	$ 701,304
Net loss	—	—	—	—	(78,178)	(78,178)
Other comprehensive loss	—	—	—	(525)	—	(525)
Issuance of common stock in conjunction with equity plans	4,536	4	6,887	—	—	6,891
Share-based compensation expense	—	—	19,525	—	—	19,525
Balance at March 31, 2024	272,280	$ 272	$ 2,566,304	$ (306)	$ (1,917,253)	$ 649,017

See accompanying notes to the condensed consolidated financial statements.

PACIFIC BIOSCIENCES OF CALIFORNIA, INC.
CONDENSED CONSOLIDATED STATEMENTS OF CASH FLOWS
(Unaudited)

(In thousands)	Three Months Ended March 31, 2025	2024
Cash flows from operating activities		
Net loss	$ (426,075)	$ (78,178)
Adjustments to reconcile net loss to net cash used in operating activities		
Depreciation	5,131	3,240
Amortization of intangible assets	366,390	6,853
Amortization of right-of-use assets	1,258	1,921
Share-based compensation expense	9,201	19,525
Impairment charges	15,000	—
Accretion of discount and amortization of premium on marketable securities, net	(1,706)	(4,031)
Change in the estimated fair value of contingent consideration	(18,700)	(70)
Inventory provision	7,659	3
Deferred income taxes	(546)	—
Other	719	403
Changes in assets and liabilities		
Accounts receivable, net	(4,121)	6,292
Inventory, net	(2,538)	(11,655)
Prepaid expenses and other assets	3,426	3,051
Accounts payable	(1,525)	6,644
Accrued expenses	311	(23,753)
Deferred revenue	1,332	1,601
Operating lease liabilities	(1,618)	(2,376)
Other liabilities	2,346	(5,152)
Net cash used in operating activities	(44,056)	(75,682)
Cash flows from investing activities		
Purchases of property and equipment	(1,389)	(3,879)
Purchases of intangible assets	(5,000)	—
Purchases of investments	(61,820)	(191,907)
Maturities of investments	113,443	161,650
Net cash provided by (used in) investing activities	45,234	(34,136)
Cash flows from financing activities		
Proceeds from issuance of common stock from equity plans	1,959	6,891
Notes payable principal payoff	—	(338)
Net cash provided by financing activities	1,959	6,553
Net increase (decrease) in cash, cash equivalents, and restricted cash	3,137	(103,265)
Cash, cash equivalents, and restricted cash at beginning of period	57,592	182,633
Cash, cash equivalents, and restricted cash at end of period	$ 60,729	$ 79,368
Cash and cash equivalents at end of period	58,507	76,646
Restricted cash at end of period	2,222	2,722
Cash, cash equivalents, and restricted cash at end of period	$ 60,729	$ 79,368
Supplemental disclosure of non-cash investing and financing activities		
Right-of-use asset and lease liability recognized due to lease extension	$ 29,575	$ —

See accompanying notes to the condensed consolidated financial statements.

PACIFIC BIOSCIENCES OF CALIFORNIA, INC.
NOTES TO CONDENSED CONSOLIDATED FINANCIAL STATEMENTS
(Unaudited)

NOTE 1. ORGANIZATION AND SIGNIFICANT ACCOUNTING POLICIES

Business Overview

We are a life science technology company that designs, develops, and manufactures advanced sequencing solutions that enable scientists and clinical researchers to improve their understanding of the genome and ultimately, resolve genetically complex problems.

Our products and technology, which include our HiFi long-read sequencing technology, address solutions across a broad set of applications including human genetics, plant and animal sciences, infectious disease and microbiology, oncology, and other emerging applications.

Our focus is on creating some of the world's most advanced sequencing systems to provide our customers with the most complete and accurate view of genomes, transcriptomes, and epigenomes.

Our customers include academic and governmental research institutions, commercial testing and service laboratories, genome centers, public health labs, hospitals and clinical research institutes, contract research organizations ("CROs"), pharmaceutical companies, and agricultural companies.

References in this report to “PacBio,” “we,” “us,” the “Company,” and “our” refer to Pacific Biosciences of California, Inc. and its consolidated subsidiaries.

Basis of Presentation and Consolidation

Our unaudited condensed consolidated financial statements have been prepared in conformity with accounting principles generally accepted in the United States, or U.S. GAAP, as set forth in the Financial Accounting Standards Board, or FASB, Accounting Standards Codification, or ASC. The unaudited condensed consolidated financial statements include the accounts of Pacific Biosciences and our wholly owned subsidiaries. Certain information and footnote disclosures typically included in our audited financial statements have been condensed or omitted. The accompanying unaudited condensed consolidated financial statements have been prepared on a consistent basis with the December 31, 2024 audited consolidated financial statements and include all adjustments, consisting of only normal recurring adjustments, necessary to fairly state our financial position, results of operations, comprehensive loss, and cash flows for the period, but are not necessarily indicative of the results to be expected for the entire year or any future periods. All intercompany transactions and balances have been eliminated.

The financial statements should be read in conjunction with the audited consolidated financial statements and notes included in our Annual Report on Form 10-K for the year ended December 31, 2024 ("2024 Annual Report").

Use of Estimates

The preparation of financial statements in conformity with U.S. GAAP requires us to make estimates and assumptions that affect the amounts reported in the financial statements and accompanying notes to the financial statements. On an ongoing basis, we evaluate our significant estimates, including those relating to the valuation of inventory, fair value of contingent consideration, valuation of acquired intangible assets, useful lives assigned to finite-lived assets, asset impairment assessments, computation of provisions for income taxes, and valuations related to our convertible senior notes. While the extent of the potential impact of current macroeconomic conditions on our business is highly uncertain, we considered information available related to assumptions and estimates used to determine the results reported and asset valuations as of March 31, 2025. Actual results could differ materially from these estimates.

Cash, Cash Equivalents, Restricted Cash, and Investments

We consider all highly liquid investments purchased with an original maturity of 90 days or less to be cash equivalents. Cash equivalents may be comprised of money market funds, certificates of deposit, commercial paper, corporate bonds and notes, and government agencies' securities.

We classify our investments in debt securities as available-for-sale and report the investments at fair value in current assets. We evaluate our available-for-sale investments in unrealized loss positions and assess whether the unrealized loss is credit-related. Unrealized gains and losses that are not credit-related are recognized in accumulated other comprehensive loss in stockholders' equity. Realized gains and losses, expected credit losses, as well as interest income, on available-for-sale securities are also reported in other income (expense), net. The cost used in the determination of gains and losses of securities sold is based on the specific identification method. The cost of marketable securities is adjusted for the amortization of premiums and discounts to expected maturity. Premium and discount amortization is recorded in other income (expense), net. We have the ability to hold, and do not intend to sell investments in unrealized loss positions before the recovery of their amortized cost bases.

Our investment portfolio at any point in time contains investments in cash deposits, money market funds, commercial paper, corporate debt securities and U.S. government and agency securities with high credit ratings. We have established guidelines regarding diversification and maturities of investments with the objectives of maintaining safety and liquidity, while maximizing yield.

Restricted cash includes cash that is not readily available for use in the Company's operating activities. Restricted cash is primarily comprised of cash pledged under letters of credit.

Concentration and Other Risks

For the three months ended March 31, 2025 and 2024, no customer accounted for 10% or more of total revenue during the period.

As of March 31, 2025, 36% of our accounts receivable were from domestic customers, compared to 36% as of December 31, 2024. As of March 31, 2025, one customer exceeded 10% of our net accounts receivable, while no customer represented 10% or more of our net accounts receivable as of December 31, 2024.

Recent Accounting Pronouncements

Accounting Pronouncements Pending Adoption

In December 2023, the FASB issued ASU 2023-09, *Income Taxes (Topic 740): Improvements to Income Tax Disclosures*. This new standard requires a company to expand its existing income tax disclosures, specifically related to the rate reconciliation and income taxes paid. The standard is effective for annual periods beginning in 2025. The new standard is expected to be applied prospectively, but retrospective application is permitted. We are currently evaluating the impact of ASU 2023-09 on the consolidated financial statements and related disclosures.

In November 2024, the FASB issued ASU 2024-04, *Debt—Debt With Conversion and Other Options (Subtopic 470-20): Induced Conversions of Convertible Debt Instruments*. This new standard clarifies the requirements for determining whether certain settlements of convertible debt instruments should be accounted for as an induced conversion or extinguishment of convertible debt. The standard will be effective for us beginning in the first quarter of 2026, with early adoption permitted. The new standard is expected to be applied prospectively, but retrospective application is permitted. We are currently evaluating the impact of ASU 2024-04 on the consolidated financial statements and related disclosures.

In November 2024, the FASB issued ASU 2024-03, *Income Statement—Reporting Comprehensive Income—Expense Disaggregation Disclosures (Subtopic 220-40): Disaggregation of Income Statement Expenses*. This new standard requires a company to provide disaggregated disclosures, within the notes to the financial statements, of specified categories of expenses that are included in line items on the face of the income statement. The standard will be effective for us beginning in 2027, and interim periods within 2028, with early adoption permitted. The new standard is expected to be applied prospectively, but retrospective application is permitted. We are currently evaluating the impact of ASU 2024-03 on the consolidated financial statements and related disclosures.

Significant Accounting Policies

There have been no changes to our significant accounting policies as disclosed in our 2024 Annual Report.

NOTE 2. FINANCIAL INSTRUMENTS

Fair Value of Financial Instruments

Fair value is the exchange price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date.

The fair value hierarchy established under U.S. GAAP requires an entity to maximize the use of observable inputs and minimize the use of unobservable inputs when measuring fair value. The three levels of inputs that may be used to measure fair value are as follows:

- Level 1: quoted prices in active markets for identical assets or liabilities;
- Level 2: inputs other than Level 1 that are observable, either directly or indirectly, such as quoted prices in active markets for similar assets or liabilities, quoted prices for identical or similar assets or liabilities in markets that are not active, or other inputs that are observable or can be corroborated by observable market data for substantially the full term of the assets or liabilities; and
- Level 3: unobservable inputs that are supported by little or no market activity and that are significant to the fair value of the assets or liabilities.

We consider an active market as one in which transactions for the asset or liability occurs with sufficient frequency and volume to provide pricing information on an ongoing basis. Conversely, we view an inactive market as one in which there are few transactions for the asset or liability, the prices are not current, or price quotations vary substantially either over time or among market makers. Where appropriate, our non-performance risk, or that of our counterparty, is considered in determining the fair values of liabilities and assets, respectively.

We classify our cash deposits and money market funds within Level 1 of the fair value hierarchy because they are valued using bank balances or quoted market prices. We classify our investments as Level 2 instruments based on market pricing and other observable inputs. We did not classify any of our investments within Level 3 of the fair value hierarchy.

Assets and liabilities measured at fair value are classified in their entirety based on the lowest level input that is significant to the fair value measurement. Our assessment of the significance of a particular input to the entire fair value measurement requires management to make judgments and consider factors specific to the asset or liability.

The carrying amount of our accounts receivable, prepaid expenses, other current assets, accounts payable, accrued expenses and other liabilities, current, approximate fair value due to their short maturities.

Assets and Liabilities Measured at Fair Value on a Recurring Basis

The following table sets forth the fair value of our financial assets and liabilities that were measured on a recurring basis:

	March 31, 2025				December 31, 2024			
(In thousands)	Level 1	Level 2	Level 3	Total	Level 1	Level 2	Level 3	Total
Assets								
Cash and cash equivalents	$ 42,952	$ 15,555	$ —	$ 58,507	$ 55,370	$ —	$ —	$ 55,370
Investments:								
Corporate debt securities	—	38,790	—	38,790	—	46,905	—	46,905
U.S. government & agency securities	—	245,813	—	245,813	—	287,656	—	287,656
Total investments	—	284,603	—	284,603	—	334,561	—	334,561
Short-term restricted cash	690	—	—	690	690	—	—	690
Long-term restricted cash	1,532	—	—	1,532	1,532	—	—	1,532
Total assets measured at fair value	$ 45,174	$ 300,158	$ —	$ 345,332	$ 57,592	$ 334,561	$ —	$ 392,153
Liabilities								
Contingent consideration	$ —	$ —	$ —	$ —	$ —	$ —	$ 18,700	$ 18,700
Total liabilities measured at fair value	$ —	$ —	$ —	$ —	$ —	$ —	$ 18,700	$ 18,700

For the three months ended March 31, 2025, there were no transfers between Level 1, Level 2, or Level 3 assets or liabilities reported at fair value on a recurring basis, and our valuation techniques did not change compared to the prior year.

Contingent Consideration

In connection with the August 2023 Apton Biosystems, Inc. (“Apton”) acquisition, contingent consideration of $25.0 million, which we may elect to pay in cash, shares of our common stock or a combination of cash and shares of our common stock, is due upon the achievement of a milestone, defined as the achievement of $50.0 million in revenue associated with Apton's technology, provided that the milestone event occurs prior to the five-year anniversary of the closing date of the acquisition. At this time, the number of shares, if any, to be issued in connection with the achievement of the specified milestone is not known and will be calculated based on the daily volume-weighted average price of our common stock for the twenty trading days ending on and including the fifth trading day immediately prior to the occurrence of the specified milestone. Upon achievement of the milestone, we may pay cash in lieu of our common stock to ensure that the issuance of our common stock does not exceed 19.9% of our outstanding shares of common stock then outstanding.

The contingent consideration is accounted for as a liability at fair value, with changes during each reporting period recognized in our condensed consolidated statements of operations and comprehensive loss. The fair value of the contingent consideration liability was calculated using a Monte Carlo Simulation to estimate the volatility and systematic relative risk of revenues subject to sales milestone payments and discounting the associated cash payment amounts to their present values using a credit-risk-adjusted interest rate.

We classify contingent consideration within Level 3 as factors used to develop the estimate of fair value include unobservable inputs that are not supported by market activity and are significant to the fair value. Estimates and assumptions used in the Monte Carlo simulation include risk-adjusted forecasted revenues for products and services leveraging Apton's technology and an estimated credit spread.

We estimate the fair value of the contingent consideration liability based on the simulated revenue of the Company through the five-year anniversary of the closing date of the acquisition. The key input used in the determination of the fair value included projected revenues of the high-throughput short-read products and services leveraging Apton's technology. As of March 31, 2025, primarily due to management's decision to cease development of the high-throughput short-read system, and the resulting changes in the expected future revenues, among other factors, and as the milestone event must occur prior to the five-year anniversary of the closing date of the acquisition, the estimated fair value of the contingent consideration liability was $0. An acceleration in the timing of projected revenues or an increase in the projected revenues may result in an increase in the fair value of the liability. A decrease in the discount rates, which include the risk-free rate and estimated subordinated credit spread for CCC credit rating, may result in an increase in the fair value of the liability.

Changes in the estimated fair value of the contingent consideration liability for the three months ended March 31, 2025 were as follows:

(In thousands)	Level 3
Beginning balance as of December 31, 2024	$ 18,700
Change in estimated fair value	(18,700)
Ending balance as of March 31, 2025	$ —

Changes to the fair value are recorded as change in fair value of contingent consideration in the condensed consolidated statement of operations and comprehensive loss.

Cash, Cash Equivalents, Restricted Cash, and Investments

The following tables summarize our cash, cash equivalents, restricted cash, and investments:

	As of March 31, 2025			
(In thousands)	Amortized Cost	Gross unrealized gains	Gross unrealized losses	Fair Value
Cash and cash equivalents	$ 58,507	$ 1	$ (1)	$ 58,507
Investments:				
Corporate debt securities	38,635	169	(14)	38,790
U.S. government & agency securities	245,587	283	(57)	245,813
Total investments	284,222	452	(71)	284,603
Total cash, cash equivalents and investments	$ 342,729	$ 453	$ (72)	$ 343,110
Short-term restricted cash	$ 690	$ —	$ —	$ 690
Long-term restricted cash	$ 1,532	$ —	$ —	$ 1,532

	As of December 31, 2024			
(In thousands)	Amortized Cost	Gross unrealized gains	Gross unrealized losses	Fair Value
Cash and cash equivalents	$ 55,370	$ —	$ —	$ 55,370
Investments:				
Corporate debt securities	46,746	184	(25)	46,905
U.S. government & agency securities	287,393	418	(155)	287,656
Total investments	334,139	602	(180)	334,561
Total cash, cash equivalents and investments	$ 389,509	$ 602	$ (180)	$ 389,931
Short-term restricted cash	$ 690	$ —	$ —	$ 690
Long-term restricted cash	$ 1,532	$ —	$ —	$ 1,532

The following table summarizes the contractual maturities of our cash equivalents and available-for-sale investments, excluding money market funds, as of March 31, 2025:

(In thousands)	Fair Value
Due in one year or less	$ 227,680
Due after one year through five years	72,478
Total	$ 300,158

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

Investment income included in other income, net on the condensed consolidated statements of operations and comprehensive loss was $3.9 million for the three months ended March 31, 2025 and $7.2 million for the three months ended March 31, 2024.

NOTE 3. BALANCE SHEET COMPONENTS

Inventory, Net

Our inventory, net, consisted of the following components:

(In thousands)	March 31, 2025	December 31, 2024
Purchased materials	$ 44,479	$ 45,270
Work in process	24,914	22,172
Finished goods	13,429	14,081
Inventory, gross	82,822	81,523
Inventory reserve	(28,815)	(22,768)
Inventory, net	$ 54,007	$ 58,755

Goodwill and Intangible Assets

Goodwill

Goodwill is reviewed for impairment at least annually during the second quarter, or more frequently if an event occurs indicating the potential for impairment. We performed our annual assessment for goodwill impairment in the second quarter of 2024, as of the beginning of April 2024, noting no impairment. We recognized a $93.2 million and $51.3 million impairment charge in the second and fourth quarter of 2024, respectively, as a result of quantitative interim impairment tests.

Based primarily on the decline in our stock price and overall market capitalization during the first quarter of 2025, driven in part by macroeconomic uncertainties, as well as our updated strategic plans and restructuring initiatives that prioritize accelerating adoption of HiFi sequencing and ceasing development of our high-throughput short-read platform, we concluded that changes to the timing and amount of expected future cash flows, among other factors, indicated that it was more likely than not that the fair value of the reporting unit was less than its carrying amount, requiring an interim goodwill impairment assessment. As a result of the quantitative interim impairment test performed as of March 31, 2025, we concluded that there was no impairment, as the estimated fair value of the entity-level reporting unit exceeded the carrying value.

To determine the fair value of the entity-level reporting unit as of March 31, 2025, we performed our impairment test using a combination of an income approach and a market approach to determine the fair value of the reporting unit. The income approach utilized estimated discounted cash flows, while the market approach utilized comparable company information. Significant assumptions used in the income approach included revenue growth expectations and a selected discount rate of 12.0%. The discount rate was based on the weighted average cost of capital, determined using market, industry data, and related risk factors. The assessment is a level 3 measurement due to its reliance on certain unobservable inputs and significant management judgment. The assumptions used were inherently subject to uncertainty and small changes in these assumptions could have had a significant impact on the concluded value. An increase of 100 basis points to the discount rate used in our assessment would have resulted in a change in the fair value of the reporting unit of approximately $75 million. The assessed fair value was deemed reasonable based on a market capitalization reconciliation and a supportable control premium.

Changes in our future operating results, cash flows, share price, market capitalization or discount rates used when conducting future goodwill impairment tests could affect the implied fair value of goodwill and may result in additional impairment charges in the future.

Intangible Assets

Intangible assets include developed technology, customer relationships, and acquired in-process research and development ("IPR&D"). In connection with the Apton acquisition in August 2023, we allocated $55.0 million of the purchase price to IPR&D. This asset is considered indefinite-lived until the associated research and development activities are either completed or abandoned, and is tested for impairment annually and more

frequently if events or changes in circumstances indicate that it is more likely than not that the asset is impaired.

We recognized a $40.0 million impairment charge in the fourth quarter of 2024 as a result of a quantitative interim impairment test.

Based on our decision to cease development of the high-throughput short-read sequencing platform, which would utilize the IPR&D, and the resulting changes to the expected future cash flows, among other factors, we concluded that it was more likely than not that the fair value of the IPR&D was less than its carrying amount, requiring an interim impairment assessment. Using a discounted cash flow model under the income approach, we determined the fair value was below carrying value and recorded a $15.0 million impairment charge. The decline in the fair value of the IPR&D below its carrying amount as of March 31, 2025 resulted primarily from changes in the timing of expected future cash flows as compared to the fair value as of December 31, 2024, driven by the restructuring initiatives that prioritize accelerating adoption of HiFi sequencing and resulted in ceasing development of our high-throughput short-read sequencing platform. The impairment charge is included on our consolidated statements of operations and comprehensive loss for the three months ended March 31, 2025.

Significant estimates and assumptions used in the income approach include timing of future cash flows, revenue growth assumptions, a selected discount rate of 14.0%, and a selected obsolescence factor of 11 years. The discount rate was based primarily on the weighted average cost of capital, determined using market, peer company, industry data, and related risk factors. The assessment is a level 3 measurement due to its reliance on certain unobservable inputs and significant management judgment. The assumptions used were inherently subject to uncertainty and small changes in these assumptions could have had a significant impact on the concluded value. A decrease of 200 basis points to the discount rate used in our analysis would have resulted in an increase in the estimated fair value of the IPR&D of approximately $3 million, and an increase of one year to the obsolescence factor used in our analysis would have resulted in an increase in the estimated fair value of the IPR&D of approximately $3 million.

Changes to IPR&D during the three months ended March 31, 2025 were as follows:

(In thousands)	
Balance as of December 31, 2024	$ 15,000
Impairment charge	(15,000)
Balance as of March 31, 2025	$ —

See *Note 5. Restructuring* for additional information on costs incurred in connection with our current year restructuring activities.

In addition to IPR&D, we had the following acquired finite-lived intangible assets:

		As of March 31, 2025			As of December 31, 2024		
(In thousands, except years)	Estimated Useful Life (in years)	Gross Carrying Amount	Accumulated Amortization	Net Carrying Amount	Gross Carrying Amount	Accumulated Amortization	Net Carrying Amount
Developed technology	3 — 15	$ 421,179	$ (402,997)	$ 18,182	$ 411,179	$ (36,607)	$ 374,572
Customer relationships	2	360	(360)	—	360	(360)	—
Total		$ 421,539	$ (403,357)	$ 18,182	$ 411,539	$ (36,967)	$ 374,572

The estimated future amortization expense of intangible assets with finite lives is as follows:

(In thousands)	
Remainder of 2025	$ 3,059
2026	4,078
2027	4,078
2028	1,301
2029	745
2030 and thereafter	4,921
Total	$ 18,182

Amortization of acquired intangible assets is included within our cost of revenue if the costs and expenses related to the intangible assets are attributable to revenue generating activities. Amortization expense for intangible assets that are not directly related to sales generating activities are amortized to operating expenses. For developed technology intangible assets that are utilized in both revenue generating activities and in research and development activities, we allocate the amortization expense between cost of revenue and operating expenses. The finite-lived intangible assets are amortized using the straight-line method over their estimated useful lives.

We review finite-lived intangible assets for impairment when indication of potential impairment exists, such as a significant reduction in cash flows associated with the assets.

During the three months ended March 31, 2025, we revised the estimated useful life of the developed technology acquired in the 2021 Omniome, Inc. ("Omniome") acquisition. This change reflects updated strategic plans and restructuring initiatives focused on accelerating HiFi sequencing adoption, leading to ceased development of our high-throughput short-read platform and revised expectations for the timing and amount of future cash flows from short-read sequencing products and services. As a result of the change in estimate, during the three months ended March 31, 2025 we recognized accelerated amortization of $359.3 million within amortization of acquired intangible assets in operating expenses, reflecting our revised estimate that the asset will no longer generate economic benefit beyond March 31, 2025. This expense reduced basic and diluted net loss per share by $1.21.

On March 7, 2025, the Company entered into an agreement to acquire certain developed technology and related intellectual property from The Chinese University of Hong Kong for total consideration of $9.7 million. In addition, the Company entered into a license agreement for complementary developed technology during the three months ended March 31, 2025. Both the acquired technology and license are classified as intangible assets and are being amortized over an estimated useful life of three years. As of March 31, 2025, $5.0 million of intangible assets acquired during the first quarter of 2025 remained unpaid, is included in accrued liabilities on the condensed consolidated balance sheets, and is expected to be paid in 2026.

In the first quarter of 2025, as part of our interim goodwill impairment test, we also performed a recoverability test for the definite-lived asset group noting no impairment.

See *Note 5. Restructuring* for additional information on costs incurred in connection with our current year restructuring activities.

Deferred Revenue

As of March 31, 2025, we had a total of $21.1 million of deferred revenue, $15.2 million of which was recorded as deferred revenue, current, and $5.9 million of which was recorded as deferred revenue, non-current, which primarily relates to deferred service contract revenues and is scheduled to be recognized in the next five years. Revenue recorded in the three months ended March 31, 2025 includes $4.6 million that was included in deferred revenue as of December 31, 2024.

Performance Obligations

We regularly enter into contracts with multiple performance obligations. These contracts are believed to be firm as of the balance sheet date. However, we may allow customers to make product substitutions or certain modifications at our discretion. The timing of shipments depends on several factors, including agreed upon shipping schedules, which may span multiple quarters. Most performance obligations are generally satisfied within a year of the contract execution date. As of March 31, 2025, the aggregate amount of the transaction price allocated to remaining performance obligations was $58.7 million, of which approximately 70% is expected to be converted to revenue over the next twelve months, approximately 23% in the following twelve months, and the remainder thereafter.

Product Warranties

We generally provide a one-year warranty on instruments. In addition, we provide a limited warranty on consumables. At the time revenue is recognized, an accrual is established for estimated warranty costs based on historical experience as well as anticipated product performance. We periodically review the warranty reserve for adequacy and adjust the warranty accrual, if necessary, based on actual experience and estimated costs to be incurred. Warranties are recorded as part of accrued expenses on the condensed consolidated balance sheets and warranty expense is recorded as a component of cost of product revenue in the condensed consolidated statements of operations and comprehensive loss. There were no material changes in estimates for the periods presented below.

Changes in the reserve for product warranties were as follows for the periods indicated:

	Three Months Ended March 31,	
(In thousands)	2025	2024
Balance at beginning of period	$ 3,100	$ 4,681
Additions charged to cost of product revenue	1,311	1,600
Repairs and replacements	(1,552)	(2,161)
Balance at end of period	$ 2,859	$ 4,120

NOTE 4. CONVERTIBLE SENIOR NOTES

2029 Convertible Senior Notes

On November 7, 2024, we entered into an exchange agreement with SB Northstar LP (“SBN”), a subsidiary of SoftBank Group Corp., pursuant to which we agreed to exchange the remaining approximately $459.0 million in aggregate principal amount of our previously held 1.50% Convertible Senior Notes due 2028 (the “2028 Notes”) outstanding for (i) $200.0 million aggregate principal amount of 1.50% Convertible Senior Notes due 2029 (the “2029 Notes”), (ii) 20,451,570 shares of common stock (the “Exchange Shares”) and (iii) $50.0 million of cash (the “2024 Exchange Transaction”). The Exchange Shares were issued on November 21, 2024 (the “Closing Date”). The 2029 Notes, the Exchange Shares, and shares of common stock issuable upon conversion of the 2029 Notes are subject to certain lock-up restrictions for a six-month period (the “Lock-Up Period”) beginning on the Closing Date of the 2024 Exchange Transaction; the lock-up restrictions will terminate immediately prior to the consummation of any change in control of the Company.

Upon any conversion of the 2029 Notes, SBN will not be entitled to be issued a number of shares of the Company’s common stock which would cause SBN's beneficial ownership of common stock to exceed either 9.9% of the total number of issued and outstanding shares of common stock or 9.9% of the combined voting power of all of the securities of the Company, in each case, following such conversion.

The 2029 Notes are governed by an indenture (the “2029 Indenture”) between the Company and U.S. Bank Trust Company, National Association, as trustee. The 2029 Notes bear interest at a rate of 1.50% per annum. Interest on the 2029 Notes is payable semi-annually in arrears on February 15 and August 15, commencing on February 15, 2025. The 2029 Notes will mature on August 15, 2029, subject to earlier conversion, redemption or repurchase.

The 2029 Notes are convertible at the option of the holder at any time from the expiration of the Lock-Up Period until the second scheduled trading day prior to the maturity date, including in connection with a redemption by the Company. The 2029 Notes are convertible into shares of our common stock based on an initial conversion rate of 204.5157 shares of common stock per $1,000 principal amount of the 2029 Notes (which is equal to an initial conversion price of approximately $4.89 per share of common stock), in each case subject to customary anti-dilution and other adjustments as a result of certain extraordinary transactions. Upon conversion of the 2029 Notes, we may elect to settle such conversion obligation in cash, shares of our common stock, or a combination of cash and shares of our common stock.

On or after August 20, 2027, and prior to the 31st scheduled trading day immediately preceding the maturity date, the 2029 Notes will be redeemable by the Company in the event that the closing sale price of our common stock has been at least 150% of the conversion price then in effect for at least 20 trading days (whether or not consecutive) during any 30 consecutive trading day period (including the last trading day of such period) ending on, and including, the trading day immediately preceding the date on which we provide the redemption notice at a redemption price of 100% of the principal amount of such 2029 Notes, plus accrued and unpaid interest up to, but excluding, the redemption date.

Upon the occurrence of a Fundamental Change (as defined in the 2029 Indenture), the holders of the 2029 Notes may require that we repurchase all or part of the principal amount of the 2029 Notes at a purchase price of par plus unpaid interest up to, but excluding, the maturity date.

The 2029 Notes are subject to certain debt and lien covenants as well as springing guarantees, in each case, the terms of which are set forth in a second letter agreement between the Company and SBN entered into in connection with the Indenture.

The 2029 Indenture includes customary “events of default,” which may result in the acceleration of the maturity of the 2029 Notes under the 2029 Indenture. The 2029 Indenture also includes customary covenants for convertible notes of this type.

To the extent we elect, the sole remedy for an event of default relating to our failure to comply with certain of our reporting obligations shall, for the first 360 calendar days after the occurrence of such an event of default, consist exclusively of the right to receive additional interest on the 2029 Notes at a rate equal to (i) 0.25% per annum of the principal amount of the 2029 Notes outstanding for each day during the first 180 calendar days of the 360-day period after the occurrence of such an event of default during which such event of default is continuing (or, if earlier, the date on which such event of default is cured or waived) and (ii) 0.50% per annum of the principal amount of the 2029 Notes outstanding for each day from, and including, the 181st calendar day to, and including, the 360th calendar day after the occurrence of such an event of default during which such event of default is continuing (or, if earlier, the date on which such event of default is cured or waived as provided for in the 2029 Indenture). On the 361st day after such event of default (if the event of default relating to our failure to comply with its obligations is not cured or waived prior to such 361st day), the 2029 Notes shall be subject to acceleration as provided for in the 2029 Indenture.

The 2029 Notes are accounted for in accordance with the authoritative guidance for convertible debt instruments that may be settled in cash upon conversion. Under ASU 2020-06, the guidance requires that debt with an embedded conversion feature is accounted for in its entirety as a liability and no portion of the proceeds from the issuance of the convertible debt instrument is accounted for as attributable to the conversion feature unless the conversion feature is required to be accounted for separately as an embedded derivative or the conversion feature results in a substantial premium. The conversion feature of the 2029 Notes is not accounted for as an embedded derivative because it is considered to be indexed to our common stock, and the 2029 Notes were not issued at a substantial premium; therefore, the 2029 Notes are accounted for in their entirety as a liability. Because we may elect to settle any conversions entirely in shares, and because settlement in shares is the default settlement method, the liability is classified as non-current.

The requirement to repurchase the 2029 Notes, including unpaid interest to the maturity date in the event of a Fundamental Change, is considered a put option for certain periods requiring bifurcation under ASC 815 – *Derivatives and Hedging.* However, given the low probability of such a Fundamental Change occurring during the applicable periods, the value of the embedded derivative is immaterial.

The additional interest feature in the event of our failure to comply with certain reporting obligations is also considered an embedded derivative requiring bifurcation under ASC 815. However, due to the nature and terms of the reporting obligations, the value of the embedded derivative is immaterial.

The exchange qualified as a troubled debt restructuring under ASC 470-60 – *Troubled Debt Restructurings by Debtors*. Since the undiscounted cash flows of the 2029 Notes were less than the carrying amount of the exchanged 2028 Notes, the carrying value of the 2029 Notes was determined based on the total undiscounted cash flows. As a result, no interest expense will be recognized for the 2029 Notes. The Company recorded a gain on debt restructuring of $154.4 million, which resulted in a decrease of basic net loss per share of $0.56, during the year ended December 31, 2024 on our consolidated statements of operations and comprehensive loss. The gain was calculated as the difference between the carrying amount of the old debt and the carrying amount of the new debt, adjusted for debt issuance costs.

We incurred issuance costs related to the 2029 Notes of approximately $3.1 million, including $0.2 million of lender fees, which were recorded as a reduction to the gain on debt restructuring on our consolidated statements of operations and comprehensive loss. We also paid accrued but unpaid interest of $1.8 million on the 2028 Notes in connection with the 2024 Exchange Transaction.

We did not receive any cash proceeds from the 2024 Exchange Transaction. In exchange for issuing the 2029 Notes, Exchange Shares and paying $50.0 million of cash pursuant to the 2024 Exchange Transaction, we received and cancelled the exchanged 2028 Notes. Following the closing of the 2024 Exchange Transaction, no amounts were outstanding on the 2028 Notes.

The carrying amount of the liability for the 2029 Notes as of March 31, 2025 is $213.5 million, of which $210.5 million is included as convertible senior notes, net, non-current, and $3.0 million is included as accrued expenses on our consolidated balance sheets.

Changes to the 2029 Notes during the three months ended March 31, 2025 were as follows:

(In thousands)		
Carrying amount as of December 31, 2024	$	214,200
Contractual interest expense		(700)
Carrying amount as of March 31, 2025	$	213,500

As of March 31, 2025, the estimated fair value (Level 2) of the 2029 Notes was $154.0 million. The fair value of the 2029 Notes is estimated using a binomial lattice model that is primarily affected by the trading price of our common stock, market interest rates and volatility.

2030 Convertible Senior Notes

In June 2023, we entered into a privately negotiated exchange agreement with a holder of our outstanding 2028 Notes, pursuant to which we issued $441.0 million in aggregate principal amount of our 1.375% Convertible Senior Notes due 2030 (the “2030 Notes” and together with the 2029 Notes, the “Notes”) in exchange for $441.0 million principal amount of the 2028 Notes (the “2023 Exchange Transaction”), pursuant to exemptions from registration under the Securities Act of 1933, as amended, and the rules and regulations thereunder. The 2030 Notes were issued on June 30, 2023.

The 2030 Notes are governed by an indenture (the “2030 Indenture”) between the Company and U.S. Bank Trust Company, National Association, as trustee. The 2030 Notes bear interest at a rate of 1.375% per annum. Interest on the 2030 Notes is payable semi-annually in arrears on June 15 and December 15, commencing on December 15, 2023. The 2030 Notes will mature on December 15, 2030, subject to earlier conversion, redemption or repurchase.

The 2030 Notes are convertible at the option of the holder at any time until the second scheduled trading day prior to the maturity date, including in connection with a redemption by the Company. The 2030 Notes are convertible into shares of our common stock based on an initial conversion rate of 46.5116 shares of common stock per $1,000 principal amount of the 2030 Notes (which is equal to an initial conversion price of approximately $21.50 per share of common stock), in each case subject to customary anti-dilution and other adjustments as a result of certain extraordinary transactions. Upon conversion of the 2030 Notes, we may elect to settle such conversion obligation in cash, shares of our common stock, or a combination of cash and shares of our common stock.

On or after June 20, 2028, and prior to the 31st scheduled trading day immediately preceding the maturity date, the 2030 Notes will be redeemable by the Company in the event that the closing sale price of our common stock has been at least 150% of the conversion price then in effect for at least 20 trading days (whether or not

consecutive) during any 30 consecutive trading day period (including the last trading day of such period) ending on, and including, the trading day immediately preceding the date on which we provide the redemption notice at a redemption price of 100% of the principal amount of such 2030 Notes, plus accrued and unpaid interest up to, but excluding, the redemption date.

Upon the occurrence of a Fundamental Change (as defined in the 2030 Indenture), the holders of the 2030 Notes may require that we repurchase all or part of the principal amount of the 2030 Notes at a purchase price equal to 100% of the principal amount of the notes to be repurchased, plus any accrued and unpaid interest up to, but excluding, the fundamental change repurchase date, and all unpaid interest from the fundamental change repurchase date thereon, but excluding, the maturity date.

The 2030 Indenture includes customary “events of default,” which may result in the acceleration of the maturity of the 2030 Notes under the 2030 Indenture. The 2030 Indenture also includes customary covenants for convertible notes of this type.

To the extent we elect, the sole remedy for an event of default relating to our failure to comply with certain of our reporting obligations shall, for the first 360 calendar days after the occurrence of such an event of default, consist exclusively of the right to receive additional interest on the 2030 Notes at a rate equal to (i) 0.25% per annum of the principal amount of the 2030 Notes outstanding for each day during the first 180 calendar days of the 360-day period after the occurrence of such an event of default during which such event of default is continuing (or, if earlier, the date on which such event of default is cured or waived) and (ii) 0.50% per annum of the principal amount of the 2030 Notes outstanding for each day from, and including, the 181st calendar day to, and including, the 360th calendar day after the occurrence of such an event of default during which such event of default is continuing (or, if earlier, the date on which such event of default is cured or waived as provided for in the 2030 Indenture). On the 361st day after such event of default (if the event of default relating to our failure to comply with its obligations is not cured or waived prior to such 361st day), the 2030 Notes shall be subject to acceleration as provided for in the 2030 Indenture.

The 2030 Notes are accounted for in accordance with the authoritative guidance for convertible debt instruments that may be settled in cash upon conversion. Under ASU 2020-06, the guidance requires that debt with an embedded conversion feature is accounted for in its entirety as a liability and no portion of the proceeds from the issuance of the convertible debt instrument is accounted for as attributable to the conversion feature unless the conversion feature is required to be accounted for separately as an embedded derivative or the conversion feature results in a substantial premium. The conversion feature of the 2030 Notes is not accounted for as an embedded derivative because it is considered to be indexed to our common stock, and the 2030 Notes were not issued at a substantial premium; therefore, the 2030 Notes are accounted for in their entirety as a liability. Because we may elect to settle any conversions entirely in shares, and because settlement in shares is the default settlement method, the liability is classified as non-current.

The requirement to repurchase the 2030 Notes, including unpaid interest to the maturity date in the event of a Fundamental Change, is considered a put option for certain periods requiring bifurcation under ASC 815 – *Derivatives and Hedging.* However, given the low probability of such a Fundamental Change occurring during the applicable periods, the value of the embedded derivative is immaterial.

The additional interest feature in the event of our failure to comply with certain reporting obligations is also considered an embedded derivative requiring bifurcation under ASC 815. However, due to the nature and terms of the reporting obligations, the value of the embedded derivative is immaterial.

The 2023 Exchange Transaction was accounted for as an extinguishment driven by the change in fair value of the embedded conversion option. We recorded a loss on extinguishment of debt of approximately $2.0 million in connection with the 2023 Exchange Transaction during the year ended December 31, 2023, which represents the difference between the fair value and the principal amount of the 2030 Notes of the debt at the modification date, plus unamortized debt issuance costs of $1.5 million related to the respective portion of the 2028 Notes.

We incurred issuance costs related to the 2030 Notes of approximately $7.3 million, which were recorded as debt issuance costs and are presented as a reduction to the 2030 Notes on our condensed consolidated balance sheets. The debt issuance costs are amortized to interest expense using the effective interest method over the term of the 2030 Notes, resulting in an effective interest rate of 1.6%. We also paid accrued but unpaid interest of $2.5 million on the 2028 Notes in connection with the 2023 Exchange Transaction on June 30, 2023.

We did not receive any cash proceeds from the 2023 Exchange Transaction. In exchange for issuing the 2030 Notes pursuant to the 2023 Exchange Transaction, we received and cancelled the exchanged 2028 Notes.

Following the closing of the 2023 Exchange Transaction, $459.0 million in aggregate principal amount of 2028 Notes remained outstanding with terms unchanged.

The net carrying amount of the liability for the 2030 Notes is included as convertible senior notes, net, non-current in the condensed consolidated balance sheets as follows:

(In thousands)	March 31, 2025	December 31, 2024
Principal amount	$ 441,000	$ 441,000
Unamortized debt premium	434	453
Unamortized debt issuance costs	(5,720)	(5,959)
Net carrying amount	$ 435,714	$ 435,494

Interest expense for the 2030 Notes was as follows:

	Three Months Ended March 31,	
(In thousands)	2025	2024
Contractual interest expense	$ 1,516	$ 1,533
Amortization of debt issuance costs	239	239
Total interest expense	$ 1,755	$ 1,772

As of March 31, 2025, the estimated fair value (Level 2) of the 2030 Notes was $276.6 million. The fair value of the 2030 Notes is estimated using a binomial lattice model that is primarily affected by the trading price of our common stock, market interest rates and volatility.

2028 Convertible Senior Notes

On February 9, 2021, we entered into an investment agreement with SBN relating to the issuance and sale to SBN of $900.0 million in aggregate principal amount of the 2028 Notes. The 2028 Notes were issued on February 16, 2021 and bore interest at a rate of 1.50% per annum. As discussed above, in June 2023 we completed an exchange of $441.0 million in aggregate principal amount of our 2028 Notes for $441.0 million aggregate principal amount of the 2030 Notes, leaving approximately $459.0 million in aggregate principal amount of 2028 Notes outstanding. Also as discussed above, in November 2024 we completed an exchange of the remaining $459.0 million in aggregate principal amount of the 2028 Notes outstanding for (i) $200.0 million aggregate principal amount of the 2029 Notes, (ii) the Exchange Shares and (iii) $50.0 million of cash. As of December 31, 2024 no amounts were outstanding on the 2028 Notes.

We incurred issuance costs related to the 2028 Notes of approximately $4.5 million, which were recorded as debt issuance costs and are presented as a reduction to the 2028 Notes on our consolidated balance sheets. The debt issuance costs were amortized to interest expense using the effective interest method over the term of the 2028 Notes, resulting in an effective interest rate of 1.6%. In connection with the 2024 Exchange Transaction, the remaining unamortized debt issuance costs related to the 2028 Notes of $1.1 million were extinguished by offsetting the carrying amount of the convertible senior notes.

Interest expense for the 2028 Notes was as follows:

	Three Months Ended March 31,	
(in thousands)	2025	2024
Contractual interest expense	$ —	$ 1,721
Amortization of debt issuance costs	—	81
Total interest expense	$ —	$ 1,802

NOTE 5. RESTRUCTURING

2025 Restructuring

In the first quarter of 2025, we implemented an expense reduction initiative aimed at lowering our annualized run-rate operating expenses. These actions, which included workforce reductions and other cost-saving measures, were part of a broader strategic shift to prioritize the adoption of HiFi sequencing.

A summary of the pre-tax restructuring charges are as follows:

(In thousands)	Three Months Ended March 31, 2025	Cumulative amount incurred to date
Employee separation costs [1]	$ 4,649	$ 4,649
Total restructuring charges	$ 4,649	$ 4,649

[1] $2.5 million was recorded in sales, general and administrative expense and $2.1 million in research and development expense.

Charges included employee separation costs comprised of approximately $2.4 million related to salaries, wages and other employee benefits paid to terminated employees pursuant to the Worker Adjustment and Retraining Notification (WARN) Act and approximately $2.2 million of severance costs.

In connection with the restructuring and strategic shift, we incurred an additional $388.2 million in costs. These include $359.3 million of accelerated amortization of certain intangible assets, $15.0 million of IPR&D impairment charges, $7.7 million related to excess inventory due to decreased external demand and $3.8 million for estimated losses on purchase commitments tied to anticipated future excess inventory included in cost of revenue, and $2.4 million of accelerated depreciation of fixed assets. See *Note 3. Balance Sheet Components* for additional information on the IPR&D impairment assessment and the change in estimated useful life of the intangible asset and accelerated amortization.

A summary of the liabilities related to the restructuring is as follows:

(In thousands, excluding non-cash activities)	Employee Separation Costs	Total
Expense recorded in Q1 2025	$ 4,649	$ 4,649
Cash paid in Q1 2025	—	—
Amount recorded in current liabilities as of March 31, 2025	$ 4,649	$ 4,649
Estimated total restructuring costs to still be incurred	$ —	$ —

2024 Restructuring

In the second quarter of 2024, we implemented an expense reduction initiative that included workforce reductions, the closing of our San Diego office, and other actions to reduce annualized run-rate operating expenses.

A summary of the pre-tax restructuring charges are as follows:

(In thousands)	Three Months Ended March 31, 2025	Cumulative amount incurred to date
Employee separation costs	$ —	$ 10,008
Other costs	975	16,189
Total restructuring charges[1]	$ 975	$ 26,197

[1] For the three months ended March 31, 2025, $1.0 million was recorded in sales, general and administrative expense.

Cumulative charges incurred to date include $15.9 million in sales, general and administrative expense; $5.9 million in research and development expense; and $4.4 million in cost of revenue.

Cumulative charges incurred to date include employee separation costs comprised of approximately $5.5 million related to salaries, wages and other employee benefits paid to terminated employees pursuant to the Worker Adjustment and Retraining Notification (WARN) Act and approximately $4.5 million of severance costs.

Other costs in the three months ended March 31, 2025 are primarily related to a lease termination fee and other costs related to our exit of the San Diego office. Other costs in cumulative charges incurred to date are primarily related to accelerated amortization and depreciation of $8.1 million for the right-of-use asset, leasehold improvements, and furniture and fixtures relating to the abandonment of the San Diego office. We also incurred cumulative charges to date for excess inventory of $3.6 million primarily relating to a decrease in internal demand resulting from the expense reduction initiatives which were recognized in cost of product revenues. The accelerated amortization and depreciation, which was recognized in sales, general and administrative expense, was determined as a result of the Company's change in estimate pertaining to its remaining useful life of the San Diego office utilizing the estimated date on which it planned to abandon the San Diego office. The lease liability pertaining to the San Diego office was also remeasured during the three months ended June 30, 2024 resulting in a reduction in the operating lease liability balance of $4.4 million, which was offset against the right-of-use asset on the condensed consolidated balance sheets. We fully exited our San Diego office in September 2024.

A summary of the liabilities related to the restructuring is as follows:

(In thousands)	Other Costs	Total
Amount recorded in current liabilities as of December 31, 2024	$ 170	$ 170
Additional expense recorded	$ 975	$ 975
Cash payments	(581)	(581)
Amount recorded in current liabilities as of March 31, 2025	$ 564	$ 564
Estimated total restructuring costs to still be incurred	$ —	$ —

The table above excludes noncash activities and amounts incurred relating to the San Diego office lease liability. The ending balance of the San Diego office lease liability as of March 31, 2025 is $1.8 million, and is included in operating lease liabilities, current on the condensed consolidated balance sheets.

NOTE 6. COMMITMENTS AND CONTINGENCIES

Leases

We record operating lease right-of-use assets and liabilities on our consolidated balance sheets for all leases with a term of more than 12 months. The operating lease right-of-use assets and liabilities are calculated as the present value of remaining minimum lease payments over the remaining lease term using our estimated secured incremental borrowing rates at the commencement date. Lease payments included in the measurement of the lease liability comprise the fixed rent per the term of the Lease. All of our leases are operating leases. Lease payments comprise the base rent per the term of the lease. Lease expense for these leases is recognized on a straight-line basis over the lease term, with variable lease payments, such as common area maintenance fees, recognized in the period those payments are incurred.

We often have options to renew lease terms for buildings. In addition, certain lease arrangements may be terminated prior to their original expiration date at our discretion. We evaluate renewal and termination options at the lease commencement date to determine if we are reasonably certain to exercise the option on the basis of economic factors.

On March 7, 2025, we amended our existing lease covering our corporate headquarters, as well as our research and development, manufacturing, and distribution facilities in Menlo Park, California. The lease amendment extends the term to April 30, 2034. We will pay approximately $97.7 million in base rent over the life of the amended lease and receive base rent abatement of approximately $11.6 million for the period beginning on March 1, 2025 and ending on July 31, 2026. We are also entitled to a tenant improvement allowance of $7.2 million. The lease amendment increased our operating lease right-of-use assets and operating lease liabilities by $29.6 million on our condensed consolidated balance sheets.

As of March 31, 2025, the maturities of our operating lease liabilities were as follows:

(in thousands)		
2025	$	2,327
2026		3,941
2027		9,165
2028		12,389
2029		12,761
Thereafter		59,897
Total undiscounted operating lease payments		100,480
Less: imputed interest		(47,583)
Present value of operating lease liabilities	$	52,897

Balance Sheet Classification		
Operating lease liabilities, current	$	2,417
Operating lease liabilities, non-current		50,480
Total operating lease liabilities	$	52,897

We use our incremental borrowing rate to determine the present value of lease payments, as the implicit rates in our leases are not readily determinable. The weighted-average discount rate used to measure our operating lease liabilities was 10.1%. The weighted-average remaining lease term for our operating leases as of March 31, 2025 was 9.0 years.

Cash Flows

Cash paid for amounts included in the present value of operating lease liabilities was $2.4 million and $3.0 million for the three months ended March 31, 2025 and 2024, respectively, and were included in operating cash flows.

Operating Lease Costs

Operating lease costs were $2.0 million and $2.6 million for the three months ended March 31, 2025 and 2024, respectively.

Contingencies

We may become involved in legal proceedings, 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.

We do not believe that the ultimate outcome of any such pending matters is probable or reasonably estimable, or that these matters will have a material adverse effect on our business; however, the results of litigation and claims are inherently unpredictable. Regardless of the outcome, litigation can have an adverse impact on us because of litigation and settlement costs, diversion of management resources, and other factors.

Please see subsection titled Legal Proceedings, in Part II, Item 1 of this Quarterly Report on Form 10-Q.

Indemnification

Pursuant to Delaware law and agreements entered into with each of our directors and officers, we may have obligations, under certain circumstances, to hold harmless and indemnify each of our directors and officers against losses suffered or incurred by the indemnified party in connection with their service to us, and judgements, fines, settlements and expenses related to claims arising against such directors and officers to the fullest extent permitted under Delaware law, our bylaws and our certificate of incorporation. We also enter and have entered into indemnification agreements with our directors and officers that may require us to indemnify them against liabilities that arise by reason of their status or service as directors or officers, except as prohibited by applicable law. In addition, we may have obligations to hold harmless and indemnify third parties involved with our fundraising efforts and their respective affiliates, directors, officers, employees, agents or other representatives against any and all losses, claims, damages and liabilities related to claims arising against such parties pursuant to the terms of agreements entered into between such third parties and us in connection with such fundraising efforts. To the extent that any such indemnification obligations apply to the lawsuits described above, any associated expenses incurred are included within the related accrued litigation expense amounts. No additional liability associated with such indemnification obligations has been recorded as of March 31, 2025 and December 31, 2024.

NOTE 7. EQUITY PLANS AND SHARE-BASED COMPENSATION

Equity Plans

As of March 31, 2025, the Company had share-based compensation awards outstanding under the 2020 Equity Incentive Plan (the “2020 Plan”), the 2020 Inducement Equity Incentive Plan (the “Inducement Plan”), the 2021 adopted Omniome Equity Incentive Plan of Pacific Biosciences of California, Inc. (the “Omniome Plan”) and the 2010 Employee Stock Purchase Plan, from which we issued equity awards and employee stock.

As of March 31, 2025, we had 11.3 million shares remaining and available for future issuance under the 2020 Plan, Inducement Plan, and the Omniome Plan. Shares remaining and available for future issuance reflect shares that may become eligible to vest upon the achievement of maximum targets for certain equity awards.

Refer to *Note 9 – Stockholders' Equity*, in Part II, Item 8 of our 2024 Annual Report for more information on the Company's equity plans.

Stock Options

The following table summarizes stock option activity for time-based awards:

(shares in thousands)	Number of shares	Weighted average exercise price
Outstanding at December 31, 2024	10,509	$ 11.09
Granted	7,562	1.24
Canceled	(1,287)	9.20
Expired	(236)	6.91
Outstanding at March 31, 2025	16,548	$ 6.80

Restricted Stock Units ("RSU") and Performance Stock Units ("PSU")

We issue RSUs for which the respective shares vest when the requisite service period is achieved. We issue PSUs for which the number of shares issuable is based on performance relative to specified revenue targets and continued employment through the vesting period. The PSUs are issuable following the third year of the performance period. Maximum achievement of the revenue goal under the PSUs will result in up to 200% of the target number of shares subject to the PSUs to become eligible to vest, while not meeting the minimum achievement of the revenue goal under the PSUs will result in no shares subject to the PSUs becoming eligible to vest. The following table summarizes the time-based RSUs and PSUs activity:

(shares in thousands)	Restricted Stock Units (RSU)	Performance Stock Units (PSU)	Weighted average grant date fair value	
			RSU	PSU
Outstanding at December 31, 2024	14,211	392	$ 7.41	$ 9.43
Granted	11,618	—	1.25	—
Vested	(3,870)	—	9.51	—
Forfeited	(552)	—	5.79	—
Outstanding at March 31, 2025	21,407	392	$ 3.73	$ 9.43

Employee Stock Purchase Plan ("ESPP")

Shares issued under our ESPP were 1,752,417 and 1,194,436 during the three months ended March 31, 2025 and 2024, respectively. In the first quarter of 2025, an additional 4.0 million shares were reserved under the ESPP. As of March 31, 2025, 16.5 million shares of our common stock remain available for issuance under our ESPP.

Share-based Compensation

The following table summarizes share-based compensation expense:

(In thousands)	Three Months Ended March 31, 2025	2024
Cost of revenue	$ 1,165	$ 2,106
Research and development	2,607	5,788
Sales, general and administrative	5,429	11,631
Total share-based compensation expense	$ 9,201	$ 19,525

Determining Fair Value

We estimate the fair value of stock options granted using the Black-Scholes valuation method and a single option award approach. When determining the current share prices underlying the stock options for calculating the grant-date fair value, we reference the observable market prices of our stock. This fair value is then amortized on a straight-line basis over the requisite service periods of the awards, which is generally the vesting period. The fair market value of RSUs and PSUs granted is the closing price of our shares on the date of grant and is generally recognized as compensation expense on a straight-line basis over the respective vesting period. For shares purchased under our ESPP, we estimate the grant-date fair value, and the resulting share-based compensation expense, using the Black-Scholes option-pricing model. We estimate forfeitures of stock options, RSUs and shares purchased under our ESPP which is utilized to determine the compensation expense to be recorded over the requisite service period.

- Expected Term - The expected term used in the Black-Scholes valuation method represents the period that the stock options are expected to be outstanding and is determined based on historical experience of similar awards, considering the contractual terms of the stock options and vesting schedules.
- Expected Volatility - The expected volatility used in the Black-Scholes valuation method is derived from the implied volatility related to our share price over the expected term.
- Expected Dividend - We have never paid dividends on our shares and, accordingly, the dividend yield percentage is zero for all periods.
- Risk-Free Interest Rate - The risk-free interest rate used in the Black-Scholes valuation method is the implied yield currently available on U.S. Treasury constant maturities issued with a term equivalent to the expected terms.

The fair value of employee stock options was estimated using the following assumptions:

	Three Months Ended March 31,	
	2025	2024
Expected term in years	4.9	4.9
Expected volatility	95% — 96%	81%
Risk-free interest rate	3.92% — 4.29%	4.32%
Dividend yield	—	—
Weighted average grant date fair value per share	$0.91	$2.45

The fair value of shares to be issued under the ESPP was estimated using the following assumptions:

	Three Months Ended March 31,	
	2025	2024
Expected term in years	0.5 — 2.0	0.5 — 2.0
Expected volatility	113%	81%
Risk-free interest rate	3.96% — 4.31%	4.54% — 5.27%
Dividend yield	—	—
Weighted average grant date fair value per share	$0.93	$2.78

NOTE 8. NET LOSS PER SHARE

Basic net loss per share is computed by dividing net loss by the weighted average number of shares of common stock outstanding during the period. Diluted net loss per share is computed using the weighted-average number of shares of common stock outstanding and potential shares assuming the dilutive effect of the Notes, using the if-converted method, and outstanding equity awards using the treasury stock method.

The following table presents the calculation of the basic and diluted net loss per share amounts presented in the condensed consolidated statements of operations and comprehensive loss:

	Three Months Ended March 31,	
(In thousands, except per share amounts)	2025	2024
Numerator:		
Net loss	$ (426,075)	$ (78,178)
Denominator:		
Basic		
Weighted average shares used in computing basic net loss per share	296,858	269,578
Basic net loss per share	$ (1.44)	$ (0.29)
Diluted		
Weighted average shares used in computing diluted net loss per share	296,858	269,578
Diluted net loss per share	$ (1.44)	$ (0.29)

The following shares issuable upon conversion of the Notes and outstanding equity awards were excluded from the computation of diluted net loss per share for the periods presented because the effect of including such shares would have been antidilutive:

	Three Months Ended March 31,	
(In thousands)	2025	2024
Shares issuable upon conversion of convertible senior notes	61,415	31,063
Equity Awards	47,133	36,924

See *Note 7. Equity Plans and Share-Based Compensation* for detailed information on equity awards.

NOTE 9. SEGMENT AND GEOGRAPHIC INFORMATION

We are organized as, and operate in, one reportable segment: the development, manufacturing, and marketing of integrated platforms for genetic analysis. Our chief operating decision-maker (CODM) is our Chief Executive Officer. Our CODM reviews financial information presented on a consolidated basis for the purposes of evaluating financial performance and allocating resources.

On a regular basis, our CODM reviews:

- total revenues by category
- total expenses and expenses by function, including sales and marketing and general and administrative, which include depreciation and share-based compensation
- net loss per share

Our assets are primarily located in the United States of America and not allocated to any specific region, and we do not measure the performance of geographic regions based upon asset-based metrics. Therefore, geographic information is presented only for revenue.

A summary of the segment profit or loss, including significant segment expenses is as follows:

	Three Months Ended March 31,	
(In thousands)	2025	2024
Total revenue	37,153	38,810
Less:		
Cost of revenue	38,524	27,528
Research and development	29,053	43,455
Sales and marketing	20,076	22,537
General and administrative	20,092	21,216
Impairment charges	15,000	—
Change in fair value of contingent consideration	(18,700)	(70)
Amortization of acquired intangible assets	362,042	5,506
Other income, net	2,557	3,184
Income tax provision	(302)	—
Consolidated net loss	(426,075)	(78,178)

A summary of our revenue by geographic location is as follows:

	Three Months Ended March 31,	
(In thousands)	2025	2024
Americas	$ 16,303	$ 17,678
Europe, Middle East and Africa	9,240	8,356
Asia-Pacific	11,610	12,776
Total	$ 37,153	$ 38,810

A summary of our revenue by category is as follows:

	Three Months Ended March 31,	
(In thousands)	2025	2024
Instrument revenue	$ 11,016	$ 19,025
Consumable revenue	20,097	15,984
Product revenue	31,113	35,009
Service and other revenue	6,040	3,801
Total revenue	$ 37,153	$ 38,810

ITEM 2. 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 (i) our unaudited condensed consolidated financial statements and related notes that are included elsewhere in this Quarterly Report on Form 10-Q and (ii) our 2024 Annual Report filed with the U.S. Securities and Exchange Commission, or the SEC, on March 17, 2025. This discussion contains forward-looking statements based upon current plans, expectations and beliefs that involve risks and uncertainties. The words "anticipates," "believes," "could," "estimates," "expects," "intends," "may," "might," "plans," "potential," "predicts," "projects," "seeks," "should," "target," "will," "would" and similar expressions are intended to identify forward-looking statements, although not all forward-looking statements contain these identifying words. Our actual results may differ materially from those anticipated in these forward-looking statements as a result of various factors, including, but not limited to, those discussed in the section entitled "Risk Factors" and elsewhere in this Quarterly Report on Form 10-Q, and you should not place undue reliance on our forward-looking statements. We do not assume any obligation to update any forward-looking statements. In preparing this Management's Discussion and Analysis ("MD&A"), we presume that readers have access to and have read the MD&A in our 2024 Annual Report on Form 10-K, pursuant to Instruction 2 to paragraph (b) of Item 303 of Regulation S-K.

Our MD&A is organized into the following sections:

- Overview and Outlook
- Results of Operations
- Liquidity and Capital Resources
- Critical Accounting Policies and Estimates
- Recent Accounting Pronouncements
- Off Balance Sheet Arrangements

OVERVIEW AND OUTLOOK

About PacBio

We are a premier life science technology company that designs, develops, and manufactures advanced sequencing solutions that enable scientists and clinical researchers to improve their understanding of the genome and ultimately, resolve genetically complex problems.

Our products and technology, which include our HiFi long-read sequencing technology, address solutions across a broad set of applications including human genetics, plant and animal sciences, infectious disease and microbiology, oncology, and other emerging applications. Long-read sequencing was recognized by the journal Nature Methods as its "method of the year" for 2022 for its contributions to biological understanding and future potential. Long-read sequencing has been applied to produce telomere-to-telomere genomes of humans, pangenome references, and has been recognized for its ability to provide more complete views of human variation.

We focus on creating some of the world's most advanced sequencing systems to provide our customers with the most complete and accurate view of genomes, transcriptomes, and epigenomes.

Our customers include academic and governmental research institutions, commercial testing and service laboratories, genome centers, public health labs, hospitals and clinical research institutes, contract research organizations ("CROs"), pharmaceutical companies, and agricultural companies.

Strategic Objectives

Our 2025 strategic objectives are to grow revenue and expand gross margins through the following four activities:

- **Enabling the full-scale release of the Vega benchtop platform to broaden our market reach.** We believe this platform broadens the long-read market opportunity.
- **Accelerating samples onto the Revio platform via SPRQ chemistry and application kits.** The SPRQ chemistry enables the sub-$500 HiFi genome, improves methylation detection capabilities, and achieves a 75% reduction in DNA input requirements for human whole genome sequencing. These features can drive more samples onto HiFi sequencing than ever before.
- **Investing in future product launches to diversify our offerings.** We continue to develop sequencing systems designed to increase throughput and lower the cost to sequence a genome, which we believe will allow us to address an even larger part of the market. Additionally, we continue to develop kitted-solutions, like our Kinnex Full-length RNA kits and PureTarget, and enhance our on-market sequencers with products like SPRQ chemistry to drive more sequencing volume.
- **Progressing our clinical strategy to improve outcomes and create durability.** Revio is increasingly being used in laboratory developed tests ("LDT") and clinical research settings to consolidate multiple tests and address complex genetic challenges.

We continue to believe that with the capabilities of our HiFi chemistry and SMRT® technology, we can be a market leader in whole-genome clinical sequencing. Leading institutions have adopted our products to study rare and inherited disease. We believe the market opportunity for clinical sequencing is significant and could drive substantial revenue growth for the Company. We plan to continue to pursue partner collaborations where the technologies being developed or applications being considered extend beyond whole-genome clinical sequencing. Collaborative arrangements add to the awareness of our products and service offerings and may drive new applications for use of our technology.

Financial Overview

Key highlights of the three months ended March 31, 2025 consolidated financial results include the following:

Revenue of	Gross loss of	Operating loss of	Cash, cash equivalents, and investments of
$37.2 M	**$1.4 M**	**$428.9 M**	**$343.1 M**
compared to $38.8 M during the same period of 2024	compared to gross profit of $11.3 M during the same period of 2024	compared to $81.4 M during the same period of 2024	compared to $389.9 M at December 31, 2024

- Revenue was comprised of $11.0 million in instrument revenue, $20.1 million in consumables revenue and $6.0 million in service and other revenue for the first quarter of 2025. Revenue was comprised of $19.0 million in instrument revenue, $16.0 million in consumables revenue and $3.8 million in service and other revenue for the first quarter of 2024. The decrease was primarily due to lower Revio unit sales, which was partially offset by higher Vega unit sales, consumable sales, and service and other revenue.
- We recorded a gross loss for the first quarter of 2025 primarily due to $12.0 million of restructuring charges, which include $7.7 million in inventory adjustments and $3.8 million of losses on purchase commitments, and an increase of $3.0 million in amortization of acquired intangible assets, partially offset by lower per unit costs to manufacture our products. See *Note 5. Restructuring* in Part I, Item 1 of this Quarterly Report on Form 10-Q for additional information. Gross margins may be affected by product mix, manufacturing efficiencies, warranty cost improvements, average selling price fluctuations, future product launches, changes to inventory reserves, costs of raw materials, and tariffs.

- Loss from operations increased $347.6 million for the first quarter of 2025 compared with the same quarter of 2024. Operating expenses increased $334.9 million primarily due to $381.8 million of costs incurred in connection with the restructuring and strategic shift, which include $359.3 million of accelerated amortization of acquired intangible assets, $15.0 million of impairment charges, and $4.6 million of employee separation costs. The increase was partially offset by an $18.7 million decrease in the change in the fair value of the contingent consideration and a decrease in research and development expenses.
- Cash, cash equivalents, and short-term investments were $343.1 million at March 31, 2025, which represents a 12% decrease compared to the balance at December 31, 2024.

The sales cycle for Revio instrument purchases continues to be elongated. We believe this has been caused by, among other reasons, the uncertainty surrounding the funding for new capital equipment, in particular, uncertainty in the United States related to the National Institutes of Health ("NIH") and academic funding; procurement delays; small-to-mid-size existing customers yet to increase their sample volumes to drive an upgrade to Revio; new customers, which have shown they have longer sales cycles compared to existing PacBio customers; and sample volumes materializing slower than expected for some potential Revio customers.

Macroeconomic dynamics impacting the Company in the future may include rising inflation, geopolitical tensions, volatile capital markets, tariffs, uncertainty in the United States related to NIH and academic funding, and fluctuating exchange rates. These factors could continue to impact our revenues and results of operations in future periods; however, the magnitude and duration of these impacts is highly uncertain and inherently unpredictable.

On an ongoing basis, we evaluate our significant estimates, including those related to the valuation of goodwill and finite-lived assets. However, these estimates could change in future periods based on events or changes in circumstances, which could result in material future impairment charges. We recorded $15.0 million of impairment charges for the first quarter of 2025. See additional discussion below in Results of Operations, as well as *Note 3. Balance Sheet Components* in Part I, Item 1 of this Quarterly Report on Form 10-Q for further information. Additionally, refer to the Critical Accounting Policies and Estimates section of our 2024 Annual Report for further discussion on the Company's asset impairment assessments.

See the *Risk Factors* section for further discussion.

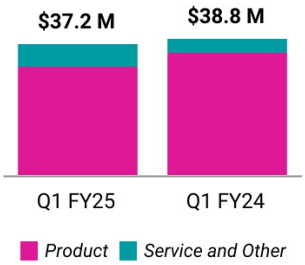
RESULTS OF OPERATIONS

Comparison of the Three Months Ended March 31, 2025 and 2024

	Three Months Ended March 31,			
(In thousands, except percentages)	2025	2024	$ Change	% Change
Revenue:				
Product revenue	$ 31,113	$ 35,009	$ (3,896)	(11 %)
Service and other revenue	6,040	3,801	2,239	59 %
Total revenue	37,153	38,810	(1,657)	(4 %)
Cost of Revenue:				
Cost of product revenue	26,333	22,447	3,886	17 %
Cost of service and other revenue	3,778	3,738	40	1 %
Amortization of acquired intangible assets	4,345	1,343	3,002	224 %
Loss on purchase commitment	4,068	—	4,068	—
Total cost of revenue	38,524	27,528	10,996	40 %
Gross (loss) profit	(1,371)	11,282	(12,653)	—
Operating Expense:				
Research and development	29,053	43,455	(14,402)	(33) %
Sales, general and administrative	40,168	43,753	(3,585)	(8) %
Impairment charges	15,000	—	15,000	—
Amortization of acquired intangible assets	362,042	5,506	356,536	6475 %
Change in fair value of contingent consideration	(18,700)	(70)	(18,630)	26,614 %
Total operating expense	427,563	92,644	334,919	362 %
Operating loss	(428,934)	(81,362)	(347,572)	427 %
Interest expense	(1,737)	(3,575)	1,838	(51) %
Other income, net	4,294	6,759	(2,465)	(36 %)
Loss before benefit from income taxes	(426,377)	(78,178)	(348,199)	445 %
Income tax benefit	(302)	—	(302)	—
Net loss	$ (426,075)	$ (78,178)	$ (347,897)	445 %

Revenue

Total Revenue

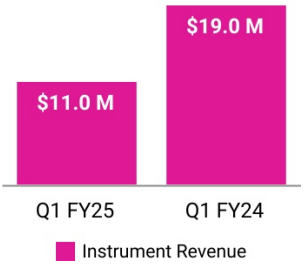


Total revenue decreased $1.7 million, or 4%, for the first quarter of 2025 compared with the same quarter of 2024.

Product revenue decreased $3.9 million, or 11%, primarily due to a decrease of $8.0 million, or 42%, in instrument revenue, partially offset by an increase of $4.1 million, or 26%, in consumable revenue.

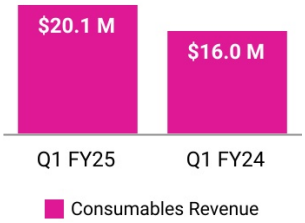
Service and other revenue increased $2.2 million, or 59%, primarily driven by an increase in Revio service contracts.

Instrument Revenue



Instrument revenue decreased primarily due to the sale of 12 Revio systems in the first quarter of 2025 compared to 28 Revio systems in the first quarter of 2024, partially offset by the sale of 28 Vega systems in the first quarter of 2025.

Consumables Revenue



Consumables revenue increased primarily due to higher Revio consumables sales attributable to the growth in the Revio instrument installed base, partially offset by a decline in Sequel® II and IIe consumables as customers transition to Revio. We expect Revio consumable sales to increase as the installed base grows. While we expect to see a decline in Sequel II and IIe consumable sales resulting from the product transition, there is uncertainty as to the rate at which these sales will decline.

Cost of Revenue and Gross (Loss) Profit

Total cost of revenue increased $11.0 million, or 40% due to an increase in cost of product revenue, $3.8 million of restructuring costs relating to loss on purchase commitments which is based on an estimate of future excess inventory related to supply agreements for which we do not expect to have related sales, and an increase of $3.0 million in amortization attributable to acquired intangible assets that are related to sales generating activities. Cost of product revenue increased $3.9 million, or 17%, for the first quarter of 2025 compared with the same quarter of 2024 primarily due to $7.7 million of charges for excess inventory due to our updated strategy to prioritize long-read technology and decrease in demand for short-read related inventory partially offset by lower per unit costs to manufacture our products. Total cost of revenue included share-based compensation expense of $1.2 million and $2.1 million during the first quarter of 2025 and 2024, respectively.

We recorded a gross loss of $1.4 million for the first quarter of 2025, compared to a gross profit of $11.3 million in the same quarter of 2024, primarily driven by the increase in cost of revenue from restructuring activities and the decrease in revenue described above. See *Note 5. Restructuring* in Part I, Item 1 of this Quarterly Report on Form 10-Q for additional information about restructuring activities. Gross margins may be affected by product mix, manufacturing efficiencies, warranty cost improvements, average selling price fluctuations, future product launches, changes to inventory reserves, costs of raw materials and tariffs.

Research and Development Expense

Research and development expense decreased by $14.4 million, or 33%, for the first quarter of 2025, compared to the same quarter of 2024. The decrease was primarily driven by a decrease in personnel and related expenses due to prior year restructuring activities, as well as the transition of launched products from development to commercialization. Research and development expense included share-based compensation expense of $2.6 million and $5.8 million during the first quarter of 2025 and 2024, respectively.

Sales, General, and Administrative Expense

Sales, general and administrative expense decreased by $3.6 million, or 8%, for the first quarter of 2025, compared to the same quarter of 2024. The decrease was primarily due to a net decrease in personnel and related expenses due to restructuring activities. Sales, general, and administrative expense included share-based compensation expense of $5.4 million and $11.6 million during the first quarter of 2025 and 2024, respectively.

Impairment Charges

We identified indicators of impairment during the first quarter of 2025 and performed an interim impairment assessment. Impairment testing demonstrated that the carrying value of our in-process research and development ("IPR&D") exceeded its estimated fair value. As a result, we recorded $15.0 million of impairment charges for the first quarter of 2025. See *Note 3. Balance Sheet Components* in Part I, Item 1 of this Quarterly Report on Form 10-Q for further information.

Amortization of Acquired Intangible Assets

Operating expenses for the first quarter of 2025 included $362.0 million of amortization expense, primarily driven by $359.3 million of accelerated amortization related to developed technology from the 2021 Omniome acquisition, reflecting our revised estimate that the asset will no longer generate economic benefit beyond March 31, 2025. We expect significantly lower amortization expense for the remainder of 2025.

Change in Fair Value of Contingent Consideration

Change in fair value of contingent consideration during the first quarter of 2025 and 2024 represents the remeasurement impact of the contingent consideration due upon the achievement of the milestone. As of March 31, 2025, primarily due to management's decision to cease development of the high-throughput short-read system, and the resulting changes in the expected future revenues, among other factors, and as the milestone event must occur prior to the five-year anniversary of the closing date of the acquisition, the

estimated fair value of the contingent consideration liability was $0, resulting in a change in fair value for the first quarter of 2025 of $18.7 million.

Interest Expense

Interest expense for the first quarter of 2025, was $1.7 million compared to $3.6 million for the first quarter of 2024 and was primarily comprised of interest on the Notes.

Other Income, Net

Other income, net for the first quarter of 2025, was $4.3 million compared to $6.8 million for the first quarter of 2024. The decrease was primarily driven by lower investment income due to lower cash and investment balances.

LIQUIDITY AND CAPITAL RESOURCES

As of March 31, 2025, we had cash, cash equivalents and investments of $343.1 million compared to $389.9 million as of December 31, 2024. We believe that our existing cash, cash equivalents and investments will be sufficient to fund our projected operating requirements beyond the next 12 months from the date of filing of this Quarterly Report on Form 10-Q for the quarter ended March 31, 2025.

Our primary sources of liquidity, other than our holdings of cash, cash equivalents, and investments, have primarily been through the issuance of debt or equity securities, together with cash flow from operating activities. We have historically incurred, and expect to continue to incur, operating losses and generate negative cash flows from operations on an annual basis, and as a result, we may require additional capital resources to execute our strategic initiatives to grow our business.

We began implementing expense reduction initiatives in the second quarter of 2024, including workforce reductions, facility downsizing, and a streamlined development pipeline, with the goal of lowering annualized run-rate operating expenses by year-end. In the first quarter of 2025, we implemented additional actions, including further workforce reductions, to support continued cost savings.

Factors that may affect our capital needs include, but are not limited to, the pace of adoption of our products, which affects the sales of our products and services; our ability to efficiently manage our operations; the effectiveness of our expense reduction initiatives; our ability to obtain new collaboration and customer arrangements and maintain existing collaborations and arrangements; the progress of our research and development programs; initiation, expansion, or funding of research programs and collaborations; the purchase of patent licenses; the impact of product quality; litigation costs, including the costs involved in preparing, filing, prosecuting, defending and enforcing intellectual property rights; costs of developing new and enhanced products; acquisitions of complementary businesses, technologies or assets; achievement of milestones in connection with acquisitions; and other factors. There can be no assurance that funds will be available on favorable terms, or at all.

Contingent Consideration

In connection with the 2023 Apton acquisition, we entered into an arrangement where we are obligated to pay former holders of Apton's outstanding equity interests $25.0 million upon the achievement of $50.0 million in revenue associated with a high throughput sequencer using Apton's technology, provided that the milestone event occurs prior to the five-year anniversary of the closing date of the acquisition, which we may elect to pay in cash, shares of our common stock or a combination of cash and shares of our common stock. As of March 31, 2025, primarily due to management's decision to cease development of the high-throughput short-read system, and the resulting changes in the expected future revenues, among other factors, and as the milestone event must occur prior to the five-year anniversary of the closing date of the acquisition, the estimated fair value of the contingent consideration liability was $0.

Cash Flow Summary

(In thousands)	Three Months Ended March 31, 2025	2024
Net cash used in operating activities	$ (44,056)	$ (75,682)
Net cash provided by (used in) investing activities	45,234	(34,136)
Net cash provided by financing activities	1,959	6,553
Net increase (decrease) in cash, cash equivalents, and restricted cash	$ 3,137	$ (103,265)

Operating Activities

Our primary uses of cash in operating activities include the development of future products and product enhancements, manufacturing, and support functions related to our sales, general and administrative activities.

Cash used in operating activities for the first quarter of 2025 of $44.1 million was due primarily to a $426.1 million net loss that included non-cash items such as amortization of acquired intangible assets of $366.4 million, an impairment charge of $15.0 million, share-based compensation of $9.2 million,$7.7 million of inventory adjustments, depreciation expense of $5.1 million, and $2.4 million in net changes to operating assets and liabilities, partially offset by an $18.7 million decrease in the change in the fair value of the contingent consideration. Cash flow impact from changes in net operating assets and liabilities was primarily driven by an increase in accrued expenses partially offset by an increase in accounts receivable.

Cash used in operating activities for the first quarter of 2024 of $75.7 million was due primarily to a $78.2 million net loss that included non-cash items such as share-based compensation of $19.5 million, amortization of intangible assets of $6.9 million, depreciation expense of $3.2 million, and amortization of right-of-use assets of $1.9 million. This was offset by the accretion of discount and amortization of premium on marketable securities, net of $4.0 million, and $25.3 million in net changes to operating assets and liabilities. Cash flow impact from changes in net operating assets and liabilities was primarily driven by an increase in inventory, as well as decreases in accrued expenses, other liabilities, and operating lease liabilities. These uses of cash were partially offset by decreases in accounts receivable and prepaid expenses and other assets and increases in accounts payable and deferred revenue.

Investing Activities

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

Cash provided by investing activities for the first quarter of 2025, was primarily from $113.4 million of maturities of investments partially offset by $61.8 million of purchases of investments and $5.0 million in purchases of intangible assets.

Cash used in investing activities for the first quarter of 2024, was primarily due to $191.9 million in purchases of investments and $3.9 million in purchases of property and equipment partially offset by $161.7 million of maturities of investments.

Financing Activities

Cash provided by financing activities during the first quarter of 2025 resulted from $2.0 million from the issuance of common stock through our equity compensation plans.

Cash provided by financing activities during the first quarter of 2024 resulted from $6.9 million from the issuance of common stock through our equity compensation plans.

Contractual Obligations

We presented our contractual obligations at December 31, 2024 in our 2024 Annual Report. There were no material changes outside the ordinary course of business to our contractual obligations during the first quarter of 2025.

CRITICAL ACCOUNTING POLICIES AND ESTIMATES

The discussion and analysis of our financial condition and results of operations are based upon our unaudited condensed consolidated financial statements, which have been prepared in accordance with the rules and regulations of the SEC. The preparation of these financial statements requires us to make estimates and judgments that affect the reported amounts of assets, liabilities, revenues and expenses. We evaluate our critical accounting policies and estimates on an ongoing basis. We base our estimates on historical experience and on various other assumptions that we believe to be reasonable under the circumstances, the results of which form the basis for making judgments about the carrying values of assets and liabilities that are not readily apparent from other sources. Actual results may differ from these estimates under different assumptions or conditions.

There have been no changes to our significant accounting policies as disclosed in our 2024 Annual Report.

RECENT ACCOUNTING PRONOUNCEMENTS

Please see *Note 1. Organization and Significant Accounting Policies*, subsection titled “Recent Accounting Pronouncements”, in Part I, Item 1 of this Quarterly Report on Form 10-Q for information regarding applicable recent accounting pronouncements.

OFF-BALANCE SHEET ARRANGEMENTS

As of March 31, 2025, we did not have any off-balance sheet arrangements.

In the ordinary course of business, we enter into standard indemnification arrangements. Pursuant to these arrangements, we indemnify, hold harmless, and agree to reimburse the indemnified parties for losses suffered or incurred by the indemnified party in connection with any trade secret, copyright, patent or other intellectual property infringement claim by any third party with respect to its technology, or from claims relating to our performance or non-performance under a contract, any defective products supplied by us, or any acts or omissions, or willful misconduct, committed by us or any of our employees, agents or representatives. The term of these indemnification agreements is generally perpetual after the execution of the agreement. The maximum potential amount of future payments we could be required to make under these agreements is not determinable because it involves claims that may be made against us in future periods but have not yet been made. To date, we have not incurred costs to defend lawsuits or settle claims related to these indemnification agreements.

We also enter and have entered into indemnification agreements with our directors and officers that may require us to indemnify them against liabilities that arise by reason of their status or service as directors or officers, except as prohibited by applicable law. In addition, we may have obligations to hold harmless and indemnify third parties involved with our fundraising efforts and their respective affiliates, directors, officers, employees, agents or other representatives against any and all losses, claims, damages and liabilities related to claims arising against such parties pursuant to the terms of agreements entered into between us and such third parties in connection with such fundraising efforts. To the extent that such indemnification obligations apply to the lawsuits described in *Note 6. Commitments and Contingencies* in Part I, Item 1 of this Quarterly Report on Form 10-Q, any associated expenses incurred are included within the related accrued litigation expense amounts. No additional liability associated with such indemnification agreements has been recorded as of March 31, 2025.

ITEM 3. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

Interest Rate and Market Risk

The 2030 Notes and 2029 Notes have fixed annual interest rates of 1.375% and 1.50%, respectively, and accordingly we do not have any economic interest rate exposure or financial statement risk associated with changes in interest rates. The fair value of the notes, however, may fluctuate when interest rates and the market price of our stock changes. See *Note 4. Convertible Senior Notes* in Part I, Item 1 of this Quarterly Report on Form 10-Q for additional information.

During the three months ended March 31, 2025, we invested in cash equivalents, U.S. government and agency securities, and corporate debt securities which were designated as cash equivalents and available-for-sale investments. Our cash equivalents and available-for-sale securities as of March 31, 2025 was $343.1 million.

Our exposure to market risk for changes in interest rates relates primarily to our investment portfolio comprised of marketable securities. We invest in a number of securities including U.S. government and agency securities, U.S. Treasury securities, and corporate debt securities and money market funds. We attempt to ensure the safety and preservation of our invested principal funds by limiting default risk, market risk and reinvestment risk. We mitigate default risk by investing in high grade investment securities. The fair market value of our fixed rate securities may be adversely impacted by increases in interest rates while income earned may decline as a result of decreases in interest rates. A hypothetical 100 basis-point (one percentage point) increase or decrease in interest rates compared to rates at March 31, 2025 would have affected the fair value of our investment portfolio by approximately $1.8 million.

There have been no other material changes in market risk from the information provided in our 2024 Annual Report.

ITEM 4. CONTROLS AND PROCEDURES

Disclosure Controls and Procedures

Our management, with the participation of our Chief Executive Officer, our Chief Financial Officer and our Chief Accounting Officer evaluated the effectiveness of our disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) of the Exchange Act) as of the end of the period covered by this Quarterly Report on Form 10-Q. Based on this evaluation, our chief executive officer and our chief financial officer concluded that our disclosure controls and procedures are designed at a reasonable assurance level and are effective to provide reasonable assurance that information required to be disclosed by us in the reports that we file or submit under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the SEC's rules and forms and that such information is accumulated and communicated to our management, including our chief executive officer and our chief financial officer, as appropriate, to allow timely decisions regarding required disclosure.

In designing and evaluating the disclosure controls and procedures, management recognizes that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving the desired control objectives.

Changes in Internal Control Over Financial Reporting

An evaluation was performed under the supervision and with the participation of our management, including our Chief Executive Officer, Chief Financial Officer and Chief Accounting Officer to determine whether any change in our internal control over financial reporting occurred during the quarter ended March 31, 2025 that materially affected, or is reasonably likely to materially affect, our internal control over financial reporting. There were no material changes in our internal control over financial reporting during the quarter ended March 31, 2025, that have materially affected, or were reasonably likely to materially affect, our internal control over financial reporting.

PART II. OTHER INFORMATION

ITEM 1. LEGAL PROCEEDINGS

U.S. District Court Proceedings

On September 26, 2019, Personal Genomics of Taiwan, Inc. (“PGI”) filed a complaint in the U.S. District Court for the District of Delaware against us for patent infringement (C.A. No. 19-cv-1810) (the “PGI District Court matter”). The matter from this complaint is based on PGI’s U.S. Patent No. 7,767,441 (the “‘441 Patent”). The complaint alleges that our Sequel systems and Sequel II systems infringe the ‘441 Patent. The complaint seeks unspecified monetary damages and an order enjoining us from infringing the ’441 Patent. On November 20, 2019, we filed our answer to the complaint, denying infringement and seeking declaratory judgments of non-infringement and invalidity of the ‘441 Patent.

On June 22, 2020, we filed a petition requesting institution of an inter-partes review ("IPR") to the Patent Trial and Appeals Board (the “Board”) at the United States Patent Office (IPR2020-01163) requesting the Board to find a set of claims in the ‘441 Patent invalid. On June 27, 2020, we filed a second petition (IPR2020-01200) requesting institution of an IPR requesting the Board to find another set of claims in the ‘441 Patent invalid. The two petitions (the “PacBio IPR Petitions”) together asserted that all of the claims relevant to the PGI complaint are invalid. On January 19, 2021, the Board ordered that both PacBio IPR Petitions be instituted on all grounds presented. On January 18, 2022, the Board issued decisions on the two IPRs. In one IPR, all challenged claims were found unpatentable, including PGI’s core device claims. In the second IPR, the Board did not find the disputed claims unpatentable. PGI and PacBio each appealed to the U.S. Court of Appeals for the Federal Circuit, which affirmed both IPR decisions on January 9, 2024.

On August 25, 2020, the court ordered a stay of the PGI District Court matter based on a joint stipulation by the parties pending a final written decision on the IPRs. Following the final written decisions on the IPRs described above, on February 2, 2022, the judge ordered that the PGI District Court matter be reopened. However, in a subsequent order dated September 15, 2022, the judge stayed the PGI District Court matter pending a final decision by the U.S. Court of Appeals for the Federal Circuit regarding the appeal described above. On February 26, 2024, we moved to transfer the case from the District of Delaware to the Northern District of California and that motion was granted on June 18, 2024. On March 18, 2024, the parties filed a joint status report in which PGI requested the Court set a revised scheduling order and we requested grant of our motion to transfer and proposed an alternate scheduling order. A case management conference was held on October 10, 2024 and the Court set a trial date of October 5, 2026. We plan to vigorously defend against the remaining claims.

On December 14, 2022, Take2 Technologies, Ltd. ("Take2") and the Chinese University of Hong Kong (“CUHK”) filed a complaint in the U.S. District Court for Delaware against us alleging infringement of U.S. Patent No. 11,091,794 (the “’794 Patent”) (C.A. No. 22- cv-01595) (the "Take2 District Court matter"). The complaint alleges that our Sequel II systems, Sequel IIe systems, and Revio systems that operate version 11.0 or later of the SMRT Link software, infringe the ‘794 Patent. The complaint seeks unspecified monetary damages and an order enjoining us from infringing the ’794 Patent. We filed a motion to dismiss on February 14, 2023, which was denied on March 25, 2024. We also filed a motion to transfer the case from the District of Delaware to the Northern District of California which was granted on August 2, 2023. The case was transferred on August 16, 2023 (C.A. No. 5:23-cv-04166). Take2 filed a motion to disqualify our in-house legal department from representing PacBio in the district court action on September 20, 2023. We opposed Take2’s disqualification motion on October 4, 2023. An oral hearing on the disqualification motion was held on October 26, 2023 and the court issued orders on November 6 and December 4 of 2023 partially granting the motion. While some members of the in-house legal department were disqualified, General Counsel for PacBio was not disqualified and continues to represent PacBio in the Take2 District Court matter. We filed a petition for inter partes review at the Board (IPR2024-00028) challenging the validity of all claims of the ’794 patent on October 17, 2023. The CUHK filed a preliminary response to the petition on January 26, 2024. On April 22, 2024, we filed our answer to the complaint, denying infringement and seeking declaratory judgments of non-infringement and invalidity of the ‘794 Patent. On April 24, 2024, the Board granted institution of IPR2024-00028 on the validity of all claims of the ’794 patent. On May 2, 2024, the parties filed a joint stipulation and proposed order to stay the Take2 District Court matter pending inter partes review. On May 3, 2024, the Court granted the motion to stay. Briefing is complete in IPR2024-00028 and an oral hearing took place on January 23, 2025. On March 7, 2025, we entered into a purchase agreement with CUHK to purchase the ‘794 patent. In connection with our purchase of the ‘794 Patent, each of Take2 and CUHK, on the one hand, and PacBio, on the other hand, agreed to waive and seek the

discharge of all outstanding litigation claims and patent-related challenges, including with respect to the Take2 District Court matter and IPR2024-00028. The agreement to discharge the litigation claims and the patent challenge has been granted by the Northern District of California and the Board, respectively.

Proceedings in China

On May 12, 2020, PGI filed a complaint in the Wuhan Intermediate People's Court in China alleging infringement of one or more claims of China patent No. CN101743321B (the "CN321 Patent"), which is related to the '441 Patent. On November 23, 2020 we filed an Invalidation Petition at the China National Intellectual Property Administration (CNIPA) demonstrating the invalidity of the claims in the CN321 Patent on grounds of insufficient disclosure, and the lack of support, essential technical features, clarity, novelty, and inventiveness. A hearing in the invalidation proceeding at the CNIPA was held on April 29, 2021. On September 2, 2021, the CNIPA issued its decision on the Invalidation Petition and determined that all claims (1-61) of the CN321 patent were invalid. On December 1, 2021, PGI filed an appeal with the Beijing IP Court, contesting the CNIPA decision. We filed a petition with the Wuhan Intermediate People's court requesting dismissal of the infringement action based on the CNIPA invalidation decision, and PGI filed a petition to withdraw its complaint. The Wuhan Intermediate People's court granted PGI's petition and dismissed the infringement action in May 2022.

Other Proceedings

From time to time, we may also be involved in a variety of other claims, lawsuits, investigations, and proceedings relating to securities laws, product liability, patent infringement, contract disputes, employment, and other matters that arise in the normal course of our business. In addition, third parties may, from time to time, assert claims against us in the form of letters and other communications.

We record a provision for contingent losses when it is both probable that a liability has been incurred and the amount of the loss can be reasonably estimated. We currently do not believe that the ultimate outcome of any of the matters described above is probable or reasonably estimable, or that these matters will have a material adverse effect on our business; however, the results of litigation and claims are inherently unpredictable. Regardless of the outcome, litigation can have an adverse impact on us because of litigation and settlement costs, diversion of management resources, and other factors.

ITEM 1A. RISK FACTORS

You should carefully consider the risks and uncertainties described below, together with all of the other information in our public filings with the SEC, which could materially affect our business, financial condition, results of operations and prospects. The risks described below are not the only risks facing us. Risks and uncertainties not currently known to us or that we currently deem to be immaterial also may materially affect our business, financial condition, results of operations and prospects. In addition, any worsening of the economic environment may exacerbate the risks described below, any of which could have a material impact on us. This situation is changing rapidly, and additional impacts may arise that we are not aware of currently.

Summary Risk Factors

The following is a summary of the principal risks that could adversely affect our business, operations, and financial results. Such risks are discussed more fully below and include, but are not limited to, risks related to:

- our ability to successfully market, commercialize, and sell current and future products and related maintenance services;
- our ability to achieve profitability for our business;
- our ability to implement required expense reduction initiatives;
- our ability to repay our debt and fund our long-term operations;
- our ability to successfully leverage and integrate our acquisitions and future acquisitions;
- our ability to successfully research, develop and timely manufacture our current and future products;
- management of new product introductions and transitions, resultant costs, and ability of new products to generate promised performance;
- recent significant changes to our leadership team and resultant disruptions to our business;
- retention, recruitment, and training of senior management, key personnel, scientists and engineers;
- our ability to further penetrate nucleic acid sequencing applications, as well as grow product demand;
- our reliance on outsourcing to other companies for manufacturing certain components and sub-assemblies, some of which are sole-sourced;
- the impact of tariffs recently imposed by the U.S. government and its trading partners in response, other possible tariffs or trade protection measures, import or export licensing requirements, new or different customs duties, trade embargoes and sanctions and other trade barriers;
- our ability to consistently manufacture our instruments and consumables to meet customers' specifications, quantity, cost, or performance requirements;
- the high amount of competition we face in our industry;
- our ability to attract customers and increase sales of current and future products;
- our reliance on a limited number of customers for a significant portion of our revenues, including academic, research and government institutions, which may be impacted by reductions in funding or targeted cancellations of certain grants or contracts by the U.S. federal government;
- the complexity of our products giving rise to defects or errors;
- our unpredictable and lengthy sales cycles;
- the possibility that our goodwill or intangible assets could become impaired;
- adverse effects resulting from political and economic tensions between the United States and other countries, including China and Russia, and other geopolitical uncertainties;
- securing and maintaining patent or other intellectual property protection for our products and related improvements;
- current and future legal proceedings filed against us claiming intellectual property infringement;

- the potential adverse impact of health epidemics;
- potential cybersecurity incidents and security breaches;
- governmental regulations that burden operations or narrow the market for our products;
- adverse effects resulting from enhanced trade tariffs, import restrictions, export restrictions, or other trade barriers;
- evolving ethical, legal, privacy, social, and regulatory concerns regarding genetic testing;
- volatility of the price of our common stock; and
- our stock price falling as a result of future offerings or sales of securities.

Our risk factors are not guarantees that no such conditions exist as of the date hereof and should not be interpreted as an affirmative statement that such risks or conditions have not materialized, in whole or in part.

Risks Related to Our Business

The commercialization and sales of our current or future products may be unsuccessful or less successful than anticipated. While we plan to continue pursuing new products and expanding into adjacent markets, we have limited experience in managing and selling multiple products and, as a result, may face challenges selling in new markets and fail to successfully carry out these initiatives, which may adversely impact our business, financial condition or results of operation.

We have made and expect to continue making substantial investments to develop new products and enhance our existing products through our acquisitions and research and development efforts. For example, we commenced commercial shipments of Revio, our new long-read sequencing system in the first quarter of 2023, and commenced commercial shipments of Onso, our SBB short-read platform, in the third quarter of 2023. We also began taking orders and shipping our new Vega benchtop long-read sequencing system in the fourth quarter of 2024. Our future success is substantially dependent on our ability to successfully develop and commercialize our products, including in particular the Revio and Vega systems, as well as acquired technologies, which are anticipated to be used in demanding scientific research that requires substantial levels of accuracy and precision. In addition, we may not be successful in transitioning the customers of our prior generation products to our Revio and Vega products, or transitioning users of other third-party sequencing platforms to our portfolio of products, and have incurred and could continue to incur related obsolete inventory charges and losses on firm purchase commitments. Customers may also be slower than we anticipate in making new capital equipment acquisitions, especially in the current economic environment. Due to challenges we may experience in developing and marketing our existing products and launching new products, we may not be able to effectively:

- manage the timeliness of our new product introductions and the rate at which sales of our new products may cannibalize sales of our existing products or manage sales and marketing of multiple sequencing platforms;
- drive adoption of our current and future products;
- maintain our competitive position by continuing to attract and retain customers for our products;
- provide appropriate levels of customer training and support for our products;
- implement an effective marketing strategy to promote awareness of our products;
- develop and implement an effective sales and distribution strategy for our current and future products;
- develop, manufacture and commercialize new products or achieve an acceptable return on our manufacturing or research and development efforts and expenses;
- comply with regulatory requirements applicable to our products;
- anticipate and adapt to changes in our market;
- accommodate customer expectations and demands with respect to our products, increase product adoption by our existing customers or develop new customer relationships;
- deliver our early access systems to our external early access testing sites or complete our external early access testing program on our currently expected timelines;

- overcome unexpected challenges discovered during early access testing;
- complete the scientific and technical validation of new products on our currently expected timeline or at all;
- deliver our future products in a timely manner to our customers;
- grow our market share by marketing and selling our products for new and additional applications;
- manage the significant burdens that expanding our existing or future products into current and new markets may impose on marketing, compliance, and other administrative and managerial resources;
- maintain and develop strategic relationships with vendors, manufacturers, and other industry partners to acquire necessary materials for the production of, and to develop, manufacture and commercialize, our existing or future products;
- adapt or scale our manufacturing activities to meet performance specifications and potential demand at a reasonable cost;
- avoid infringement and misappropriation of third-party intellectual property;
- obtain and maintain any necessary licenses to third-party intellectual property on commercially reasonable terms;
- obtain valid and enforceable patents that give us a competitive advantage or enforce existing patents;
- protect our proprietary technology; and
- attract, retain, and motivate qualified personnel.

The risks noted above, especially with respect to the marketing, sales, and commercialization of our products, may be heightened by the impact of current uncertain market and other conditions. 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, we could suffer a material adverse effect on our business, financial conditions, results of operations and prospects.

We evaluate goodwill and other intangible assets with indefinite useful lives for impairment annually and whenever events or changes in circumstances indicate that the fair value of such assets may be less than the carrying value. We also perform regular reviews to determine if any event has occurred that may indicate that the carrying values of our intangible assets with finite lives and other finite-lived assets are impaired. Events that would indicate impairment and trigger an interim impairment test include, but are not limited to, unexpected adverse business conditions, weak demand for a specific product line or business, economic factors, shifting focus to certain lines of business, unanticipated technological changes or competitive activities, loss of key personnel, changes in business strategy, and acts by governments or courts. The occurrence of any of these events, may require us to record future impairment charges. For example, we recorded $184.5 million of impairment charges during the year ended December 31, 2024 as described in additional detail in Note 4. *Balance Sheet Components* in Part II, Item 8 of our 2024 Annual Report, and $15.0 million of impairment charges during the three months ended March 31, 2025, as described in additional detail in *Note 3. Balance Sheet Components* in Part I, Item 1 of this Quarterly Report on Form 10-Q. Additionally, amortization of acquired intangible assets during the three months ended March 31, 2025 included $359.3 million of accelerated amortization pertaining to the Company's change in estimate of its remaining useful life of the developed technology acquired in connection with the 2021 Omniome acquisition as described in additional detail in *Note 5. Restructuring* in Part I, Item 1 of this Quarterly Report on Form 10-Q. Any such charges may adversely affect our results of operations.

We have incurred losses to date, and we expect to continue to incur significant losses as we develop our business and we may never achieve profitability.

We have generally incurred net losses each quarter since inception, and we cannot be certain if or when we will produce sufficient revenue from our operations to support our costs. Even if profitability is achieved in the future, we may not be able to sustain profitability on a consistent basis. We expect to continue to incur substantial losses and negative cash flow from operations for the foreseeable future. Although we initiated expense reduction plans during the second quarter of 2024, and further expense reduction plans during the first quarter of 2025, we do not expect to be profitable in 2025, and there can be no assurance that these expense reduction initiatives will be successful in helping us achieve profitability.

Our net losses since inception and our expectation of incurring substantial losses and negative cash flow for the foreseeable future could:

- make it more difficult for us to satisfy our obligations;
- increase our vulnerability to general adverse economic and industry conditions;
- limit our ability to fund future working capital, capital expenditures, research and development and other business opportunities;
- increase the volatility of the price of our common stock;
- limit our flexibility to react to changes in our business and the industry in which we operate;
- place us at a disadvantage to other companies that offer nucleic acid sequencing equipment or consumables; and
- limit our ability to borrow additional funds.

In addition, inflationary pressure, including as a result of supply shortages, has adversely impacted and could continue to adversely impact our financial results, and our operating costs may increase. We may not fully offset these cost increases by raising prices for our products and services, which could result in downward pressure on our margins. Further, our customers may choose to reduce their business with us if we increase our pricing.

Any or all of the foregoing may have a material adverse effect on our business, operations, financial condition, and prospects. An impairment in value of our tangible or intangible assets could also be recorded as a result of weaker economic conditions. For more information on impairment considerations, see "—*The commercialization and sales of our current or future products may be unsuccessful or less successful than anticipated. While we plan to continue pursuing new products and expanding into adjacent markets, we have limited experience in managing and selling multiple products and, as a result, may face challenges selling in new markets and fail to successfully carry out these initiatives, which may adversely impact our business, financial condition or results of operation.*" above.

Expense reduction initiatives could be disruptive to our operations and adversely affect our results of operations and financial condition, and we may not realize some or all of the anticipated benefits of these initiatives, whether in the time frame anticipated or at all.

Our expense reduction initiatives comprise, among other things, workforce reductions, facilities downsizing and a refined pipeline of development activities. For example, during the second quarter of 2024 we initiated plans to reduce certain of our annualized run-rate operating expenses by the end of the year, with the intent of better aligning our organizational structure and resources with our strategic initiatives, and during the first quarter of 2025 we initiated further plans to reduce certain of our annualized run-rate operating expenses by the end of the year, given persistent uncertainty surrounding academic and NIH funding, along with the introduction of new tariffs. The implementation of these expense reduction initiatives, including the impact of workforce reductions, could impair our ability to invest in developing, marketing and selling new and existing products, be disruptive to our operations, make it difficult to attract or retain employees, result in higher than anticipated charges, divert the attention of management, result in a loss of accumulated knowledge, impact our customer and supplier relationships, and otherwise adversely affect our results of operations and financial condition. In addition, our ability to complete our expense reduction initiatives and achieve the anticipated benefits within the expected time frame is subject to estimates and assumptions and may vary materially from our expectations, including as a result of factors that are beyond our control. Furthermore, our efforts to stabilize our business may not be successful.

We are not cash flow positive and may not have sufficient cash to make required payments under the terms of our debt or fund our long-term planned operations.

Our operations have consumed substantial amounts of cash since inception, and we expect to continue to incur substantial losses and negative cash flow from operations for the foreseeable future. Additional funds may not be available on terms acceptable to us or at all. We have incurred significant debt, and we may incur additional debt in the future. As of December 31, 2024, we had outstanding approximately $200.0 million aggregate principal amount of our 1.50% Convertible Senior Notes due 2029 (the "2029 Notes") and $441.0 million aggregate principal amount of our 1.375% Convertible Senior Notes due 2030 (the "2030 Notes" and together with the 2029 Notes, the "Notes"). As discussed in *Note 4. Convertible Senior Notes* in Part I, Item 1 of this Quarterly Report on Form 10-Q, we exchanged the remaining approximately $459.0 million in aggregate principal amount of our 1.50% Convertible Senior Notes due 2028 (the "2028 Notes") for (i) $200.0 million aggregate principal amount of the 2029 Notes, (ii) 20,451,570 shares of common stock and (iii) $50.0 million of cash (the "2024 Exchange Transaction"). The 2024 Exchange Transaction closed on November 21, 2024. We may not have sufficient cash to make required payments under the terms of this debt, and should this occur, debt holders have rights senior to common stockholders to make claims on our assets. In addition, if we do not have sufficient cash to make the required payments at maturity, we may need to raise additional capital, which could result in dilution of our existing investors, or refinance or restructure our debt, which will depend on, among other things, the condition of the capital markets and our financial condition at such time, and which may be at higher interest rates. We may not be able to issue equity securities due to unacceptable terms and conditions to us in the capital markets. To the extent that we intend to raise additional funds through the sale of our common stock, downward fluctuations in our stock price could adversely affect such fundraising efforts. Furthermore, equity financings normally involve shares sold at a discount to the current market price and fundraising through sales of additional shares of common stock or other equity securities will have a dilutive effect on our existing investors. We may be required to seek equity financing at a time when the market price for our common stock is low, which would further dilute ownership for existing common stockholders.

We believe that our growth will depend, in part, on our ability to fund our commercialization efforts and our efforts to develop new products and improve our existing products. To the extent our existing resources are not sufficient, it may require us to delay, or even not allow us to conduct any or all of these activities that we believe would be beneficial for our future growth. We may need to raise additional funds through public or private debt or equity financing or alternative financing arrangements, which may include collaborations or licensing arrangements. If we are unable to raise funds on favorable terms, or at all, we may have to reduce our cash burn rate and may not be able to support our commercialization efforts, launching of new products, or operations, or to increase or maintain the level of our research and development activities.

If we are unable to generate sufficient cash flows or to raise adequate funds to finance our forecasted expenditures, we may have to make significant changes to our operations, including delaying or reducing the scope of, or eliminating some or all of, our development programs. We also may have to reduce sales, marketing, engineering, customer support or other resources devoted to our existing or new products, or we may need to cease operations. Any of these actions could materially impede our ability to achieve our business objectives and could materially harm our operating results, and there can be no assurance that any of these actions would be successful. If our cash, cash equivalents and investments are insufficient to fund our projected operating requirements and we are unable to raise capital, it could have a material adverse effect on our business, financial condition and results of operations and prospects.

We have made acquisitions and, in the future, may continue to acquire businesses, technologies or assets, form joint ventures or make other strategic investments with companies that could adversely affect our operating results, dilute our stockholders' ownership, or cause us to incur debt or significant expense.

As part of our business strategy, we have acquired and expect to continue to pursue acquisitions of complementary businesses, technologies, or assets. We may also pursue technology license arrangements, strategic alliances or investments that complement our business.

Acquisitions and strategic transactions involve numerous risks, any of which could harm our business and negatively affect our financial condition and results of operations, including:

- intense competition for suitable acquisition targets, which could increase prices and adversely affect our ability to consummate deals on favorable or acceptable terms;
- failure or material delay in closing a transaction;

- transaction-related lawsuits or claims;
- difficulties in integrating the technologies, operations, existing contracts, and personnel of an acquired company;
- difficulties in retaining key employees or business partners of an acquired company;
- difficulties in retaining suppliers, partners, or customers of an acquired company;
- challenges with integrating the brand identity of an acquired company with our own;
- diversion of financial and management resources from existing operations or alternative acquisition opportunities;
- failure to realize the anticipated benefits or synergies of a transaction;
- difficulties in developing technology post-acquisition;
- failure to identify the problems, liabilities, or other shortcomings or challenges of an acquired company or technology, including issues related to intellectual property, regulatory compliance practices, litigation, revenue recognition or other accounting practices, or employee or user issues;
- risks that regulatory bodies may enact new laws or promulgate new regulations that are adverse to an acquired company or business;
- risks that regulatory bodies do not approve our acquisitions or business combinations or delay such approvals;
- theft of our trade secrets or confidential information that we share with potential acquisition candidates or other potential strategic partners;
- risk that an acquired company or investment in new services cannibalizes a portion of our existing business; and
- adverse market reaction to an acquisition or other strategic transaction.

To finance any acquisitions or other strategic investments, we may raise additional funds, which could adversely affect our existing stockholders and our business. If the price of our common stock is low or volatile, we may not be able to acquire other companies for stock. In addition, our stockholders may experience substantial dilution as a result of additional securities we may issue for acquisitions. Open market sales of substantial amounts of our common stock issued to stockholders of companies we acquire could also depress our stock price. Additional funds may not be available on terms that are favorable to us, or at all.

If we fail to address the foregoing risks or other problems encountered in connection with past or future acquisitions of businesses, new technologies, services, and other assets and strategic investments, or if we fail to successfully integrate such acquisitions or investments, our business, financial condition, and results of operations could be adversely affected, including potential impairments of goodwill and intangible assets.

If we are unable to successfully develop and timely manufacture our current and future products our business may be adversely affected.

Considering the highly complex technologies involved in our products, there can be no assurance that we will be able to manufacture and commercialize our current and future products on a timely basis or continue providing adequate support for our existing products. The commercial success of our products, including the Sequel, Sequel II/IIe, Revio, Onso and Vega systems, and the products under development, including acquired technologies, depends on a number of factors, including performance and reliability of the systems, our anticipating and effectively addressing customer preferences and demands, the success of our sales and marketing efforts, effective forecasting and management of product demand, purchase commitments and inventory levels, effective management of manufacturing and supply costs, and the quality of our products, including consumables such as SMRT Cells and reagents. Should we face delays in or discover unexpected defects during the further development or manufacturing process of instruments or consumables related to our products, including any delays or defects in software development or product functionality, the timing and success of the continued rollout and scaling of our products may be significantly impacted, which may materially and negatively impact our revenue and gross margin. The ability of our customers to successfully utilize our products will also depend on our ability to deliver high quality SMRT Cells and reagents. We have designed SMRT Cells and other consumables specifically for the Sequel, Sequel II/IIe, Revio and Vega systems, and may need to develop in the future, other customized SMRT Cells and consumables for our future products. Our production of the SMRT Cells for the Sequel and Sequel II/IIe systems has been and may in the future, including with respect to the Revio system, be below desired levels and yields, and we have experienced and may experience in the future manufacturing delays, product or quality defects, SMRT Cell variability, and other issues. The performance of our consumables is critical to our customers' successful utilization of our products, and any defects or performance issues with our consumables would adversely affect our business. All of the foregoing could have a material adverse effect on our ability to sell our products or result in other material adverse effects on our business, operations, financial condition, operations and prospects.

The development of our products is complex and costly. Problems in the design or quality of our products may have a material and adverse effect on our brand, business, financial condition, and operating results, and could result in us losing our certifications from the International Organization for Standardization ("ISO"). If we were to lose ISO certification, then our customers might choose not to purchase products from us and this could adversely impact our ability to develop products approved for clinical uses. Unanticipated problems with our products could divert substantial resources, which may impair our ability to support our new and existing products and could substantially increase our costs. If we encounter development challenges or discover errors in our products late in our development cycle, including during external beta testing, we may be forced to undertake design and/or production changes, delay product shipments or the scaling of manufacturing or supply. The completion of the production and external testing of our beta systems may also take longer than currently planned, cost more than currently expected and the scientific and technical validation may not be completed on our currently expected timelines or at all. Such testing may also expose fundamental flaws in our products that may cause us to abandon the further development of such products.

If the continued rollout of our current and future products, including with respect to the SMRT Cell, the Sequel, Sequel II/IIe, Revio, Onso and Vega systems, is delayed or is not successful or less successful than anticipated, then we may not be able to achieve an acceptable return, if any, on our substantial research and development efforts, and our business may be materially and adversely affected. The expenses or losses associated with delayed or unsuccessful product development or lack of market acceptance of our existing and new products, including the SMRT Cell and the Sequel, Sequel II/IIe, Revio, Onso and Vega systems could materially and adversely affect our business, operations, financial condition, and prospects.

Our research and development efforts may not result in the benefits that we anticipate, and our failure to successfully market, sell, and commercialize our current and future products could have a material adverse effect on our business, financial condition and results of operations.

We have dedicated significant resources to developing our current products. We are also engaged in substantial and complex research and development efforts, which, if successful, may result in the introduction of new products in the future, including in connection with the SMRT Cell and the Sequel II/IIe, Revio, Onso and Vega systems, in addition to other products currently under development, including acquired technologies. Our research and development efforts are complex and require us to incur substantial expenses and we may not be able to develop, manufacture and commercialize new products or obtain regulatory approval if necessary. We may divert significant resources to research and development initiatives that do not result in commercialized products, and even if these efforts do result in commercialized products, there can be no assurance that such products will compete successfully in the market or achieve an acceptable return, if any, on our research and development efforts and expenses. Moreover, our joint research and development efforts with partners require significant management attention and operational resources. If we are unable to successfully manage such joint research and development efforts, our future results may be adversely impacted. Furthermore, we will need to continue to expand our internal capabilities or seek new partnerships or collaborations, or both, in order to successfully develop, market, sell and commercialize our products for and in the markets we seek to reach. If we are unable to do so or are delayed, then this could materially and adversely affect our business, operations, financial condition, and prospects.

We must successfully manage new product introductions and transitions and the development of acquired technologies, for which we may incur significant costs during these transitions and development, and these efforts may not result in the benefits we anticipate.

If our products and services fail to deliver the performance, scalability or results expected by our current and future customers, or are not delivered on a timely basis, our reputation and credibility may suffer, our current and future sales and revenue may be materially harmed and our business may not succeed. For instance, if we are not able to successfully execute on the commercialization plan for our Revio HiFi long-read sequencing system and the Vega benchtop long-read sequencing system, and each of their related consumables, and any future products that may be developed for research, medical and clinical uses, including acquired technologies, it could have a material adverse effect on our business, financial condition and results of operations. In addition, the introduction of future products, including with respect to future long-read products, and related consumables, has and may in the future lead to our limiting or ceasing development of further enhancements to our existing products as we focus our resources on new products, and has resulted and could in the future result in reduced marketplace acceptance and loss of sales of our existing products, materially adversely affecting our revenue and operating results. The introduction of new products, including the recent commercialization of our Revio and Vega systems, has had and may in the future also have a negative impact on our revenue in the near-term as our current and future customers have delayed or cancelled and may in the future delay or cancel orders of existing products in anticipation of new products and we may also be pressured to decrease prices for our existing products. Our experience in managing product transitions is limited, and we have experienced, and may in the future experience, difficulty in managing or forecasting customer reactions, purchasing decisions or transition requirements with respect to newly launched products. We have incurred and may continue to incur significant costs in completing these transitions, including costs of write-downs of our products, as current or future customers transition to new products. If we do not successfully manage these product transitions, including with respect to the Revio, Onso and Vega systems and each of their related consumables, and any future long-read products, our business, operations, financial condition, and prospects may be materially and adversely affected.

Our business may be adversely affected by epidemics or other public health emergencies.

Our business could be adversely impacted by the effects of epidemics or other public health emergencies. These impacts could include, but are not necessarily limited to:

- shutdowns or business disruptions experienced by manufacturers, suppliers and other third parties with whom we conduct business;
- disruptions or interruptions to our supply chains;
- changes in applicable public health regulations that require us to modify our business practices and operations; and

- disruption to customer demand for our products.

The extent to which any epidemic or other public health emergency impacts our business and financial results inherently depends on future developments, which are highly uncertain and cannot be predicted, including new information which may emerge concerning the severity of a particular public health matter and the actions to contain it or treat its impact, among others. Even after an epidemic or public health emergency has subsided, we may continue to experience an adverse impact to our business as a result of economic aftershocks, including recessionary effects and inflationary pressures.

Significant changes to our leadership team and the resulting management transitions might harm our future operating results.

We have in recent years experienced significant changes to our leadership team, and although we believe these leadership transitions are in the best interest of our stakeholders, these transitions may result in the loss of personnel with deep institutional or technical knowledge. Further, the transition could potentially disrupt our operations and relationships with employees, suppliers, partners, and customers due to added costs, operational inefficiencies, decreased employee morale and productivity and increased turnover. We must successfully recruit and integrate our new leadership team members within our organization to achieve our operating objectives; as such, the leadership transition may temporarily affect our business performance and results of operations while the new members of our leadership team become familiar with our business. In addition, our competitors may seek to use this transition and the related potential disruptions to gain a competitive advantage over us. Furthermore, these changes may increase our dependency on the other members of our leadership team that remain with us, who are not contractually obligated to remain employed with us and may leave at any time. Any such departure could be particularly disruptive given that we are already experiencing leadership transitions and, to the extent we experience additional management turnover, competition for top management is high such that it may take some time to find a candidate that meets our requirements. Our future operating results depend substantially upon the continued service of our key personnel and in significant part upon our ability to attract and retain qualified management personnel. If we are unable to mitigate these or other similar risks, our business, results of operations and financial condition may be materially and adversely affected.

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, engineers, sales personnel and other employees, our ability to maintain, develop and commercialize our products could be harmed and we may be unable to achieve our goals.

Our 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 technological and product innovations, and we will need to hire additional qualified personnel from time to time. Our industry, is characterized by high demand and intense competition for talent, and the turnover rate has been and may continue to be high. Our employees can leave our company with little to no prior notice and would be free to work for a competitor. We compete for qualified management and scientific personnel with other life science companies, academic institutions and research institutions, particularly those focusing on genomics. We also compete for qualified sales personnel to support the commercialization of our existing and new products. Workforce reductions, such as the workforce reduction we implemented in 2024 and 2025, and other expense reduction efforts may be negatively received by potential or current employees, and accordingly result in attrition or difficulty in recruiting desirable candidates. Additionally, we may face challenges in retaining and recruiting key personnel due to sustained declines in our stock price that could reduce the retentive value of stock options, restricted stock units and other equity awards we issue as compensation. We may not be able to provide adequate cash or other incentives to adequately counterbalance any negative perceptions about the value of our equity awards. Moreover, the value of any equity awards that we do grant to our personnel may be significantly affected by movements in our stock price that are beyond our control. The loss of qualified employees, or an inability to attract, retain, and motivate employees, could prevent us from pursuing collaborations and materially and adversely affect our support of existing products, product development and launches, business growth prospects, results of operations and financial condition.

Further, changes to U.S. immigration policies, such as the implementation of more restrictive interpretations by the U.S. Citizenship and Immigration Services of regulatory requirements for H-1B and other visa programs, could restrain the flow of technical and professional talent into the U.S. and may inhibit our ability to hire qualified personnel. If some of our employees' temporary work permits expire and are not renewed, we may face increased turnover rates and labor shortages, which could result in higher labor costs.

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 any inability to attract or retain qualified personnel, including scientists, engineers, sales personnel and others, could prevent us from pursuing collaborations and materially and adversely affect our support of existing products, product development and introductions, business growth prospects, results of operations and financial condition.

Our success is highly dependent on our ability to further penetrate nucleic acid sequencing applications as well as on the growth and expansion of the demand for our products. If our products fail to achieve and sustain sufficient market acceptance, we will not generate expected revenue and our business may not succeed.

Although nucleic acid sequencing technology is well-established, our SMRT Sequencing technology is relatively new and evolving. We cannot be sure that our current or future products will gain acceptance in the marketplace at levels sufficient to support our costs. Our success depends, in part, on our ability to expand overall demand for nucleic acid sequencing to include new applications that are not practicable with other current technologies and to introduce new products that capture a larger share of growing overall demand for sequencing. To accomplish this, we must successfully commercialize, and continue development of, our proprietary SMRT Sequencing technology for use in a variety of life science and other research applications, including uses by academic, government and clinical laboratories, as well as pharmaceutical, diagnostic, biotechnology, and agriculture companies, among others. However, we may be unsuccessful in these efforts and the sale and commercialization of our products may not grow sufficiently to cover our costs.

There can be no assurance that we will be successful in adding new products or securing additional customers for our current and future products. If we are unable to successfully develop acquired technologies and sell acquired technology products, we may fail to achieve our strategic commercial initiatives in connection with the planned release of new products and anticipated entry into new markets. Our ability to further penetrate existing applications and any new applications depends on a number of factors, including the cost, performance and perceived value associated with our products, as well as customers’ willingness to adopt a different approach to nucleic acid sequencing. Potential customers may have already made significant investments in other sequencing technologies and may be unwilling to invest in new technologies. We are experiencing pricing pressures caused by industry competition and increased demand for lower-priced instruments and lower operational costs. We have limited experience commercializing and selling products outside of the academic and research settings, and we cannot guarantee success in acquiring additional customers. Furthermore, we cannot guarantee that our products will be satisfactory to potential customers or that our products will perform in accordance with customer expectations.

Nucleic acid sequencing applications are new and dynamic, and there can be no assurance that they will develop as quickly as we anticipate, that they will reach their full potential or that our products will be appropriate or competitive for these applications. 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 applications more quickly. We may also need to delay full-scale commercial deployment of new products as we develop them in order to perform quality control and early access user testing. We also need to maintain reliable supply chains for the various components in our new products and consumables to support large-scale commercial production. Even if we are able to implement our technology successfully, we and/or our sales and distribution partners may fail to achieve or sustain market acceptance of our current or future products across the full range of our intended life science and other applications. We need to continue to expand and update our internal capabilities or to collaborate with other partners, or both, in order to successfully expand sales of our products in the applications that we seek to reach, which we may be unable to do at the scale required to support our business.

If the demand for our products grows more slowly than anticipated, if we are unable to successfully scale or otherwise ensure sufficient manufacturing capacity for new products to meet demand, if we are not able to successfully market and sell our products, if competitors develop better or more cost-effective products, if our product launches and commercialization are not successful, or if we are unable to further grow our customer base or do not realize the growth with existing customers that we are expecting, our current and future sales and revenue may be materially and adversely harmed, or we may recognize an impairment loss, and our business may not succeed.

We rely on other companies for the manufacture of certain components and sub-assemblies and intend to outsource additional sub-assemblies in the future, some of which are sole sources. We may not be able to successfully scale the manufacturing process necessary to build and test multiple products on a full commercial basis, which could materially harm our business.

Our products are complex and involve a large number of unique components, many of which require precise manufacturing. The nature of our products requires customized components that are currently available only from a limited number of sources, and in some cases, single sources. We have chosen to source certain critical components from a single source, including suppliers for our SMRT Cells, reagents, and instruments. We cannot assure you that product supplies will not be limited or interrupted, especially with respect to our sole source third-party manufacturing and supply collaborators, or that product supplies will be of satisfactory quality or continue to be available at acceptable prices. In particular, any replacement of our manufacturers could require significant effort and expertise because there may be a limited number of qualified replacements. We may be unable to negotiate binding agreements with our current and future sole source third-party manufacturing and supply collaborators or, in the event that such collaborators' services become interrupted for any reason, find replacement manufacturers to support our development and commercial activities at commercially reasonable terms. We do not always have arrangements in place for a redundant or second-source supply for our sole source vendors in the event they cease to provide their products or services to us or fail to provide sufficient quantities in a timely manner. If we are required to purchase these components from alternative sources, it could take several months or longer to qualify the alternative sources. If we are unable to source these product components from sole-source third-party manufacturing and supply collaborators for any reason, including in connection with acts of terrorism, hostilities, military conflict and acts of war, including between China and Taiwan, or secure a sufficient supply of these product components on a timely basis and at an acceptable cost, or if these components do not meet our expectations or specifications for quality and functionality, our operations and manufacturing would be materially and adversely affected, we could be unable to meet customer demand and our business and results of operations may be materially and adversely affected.

The operations of our third-party manufacturing partners and suppliers have had and may in the future be disrupted by conditions unrelated to our business or operations or that are beyond our control, including but not limited to changing international trade policies, inflation, supply chain disruptions, and conditions related to epidemics or pandemics. If our manufacturing partners or suppliers are unable or fail to fulfill their obligations to us for any reason, we may not be able to manufacture our products and satisfy customer demand or our obligations under sales agreements in a timely manner, and our business could be harmed as a result. We have and may continue to face challenges in our supply chain, which has and may continue to adversely impact margins. During periods of shortage or delay, the price of components may increase or the components may not be available at all. Our suppliers have raised prices and may continue to raise prices that we may not be able to pass on to our customers, which could adversely affect our business, including our competitive position, market share, revenues, and profit margins in material ways. We may not be able to secure enough components at reasonable prices or of acceptable quality to build new products in a timely manner in the quantities or configurations needed. Various government policies have had, and may continue to have in the future, a negative impact on manufacturing and/or supply chains, in addition to customer demand for our products and demand through certain distributors. As a result of global economic or political instability, such as the uncertainty in the Middle East, an escalation of the war in Ukraine, potential uncertainty related to Taiwan and its relationship with China, changing international trade policies, other disease outbreaks, or supply issues, we or our contractors could experience shortages, business disruptions or delays for materials sourced or manufactured in the affected countries, and their ability to supply us with instruments or product components may be affected. Occasionally, system components and reagents reach the end of their life cycles or become obsolete, requiring us to source alternatives. If we encounter delays or difficulties in securing the quality and quantity of materials we require for our products, our supply chain would be interrupted, which would adversely affect sales. If any of these events occur, our business and operating results could be harmed. Accordingly, if any of the foregoing occurs, our ability to commercialize our products, revenue and gross margins could suffer until lockdowns related to epidemics or pandemics are lifted, supply issues or business disruptions are resolved and/or other sources can be developed.

Our current manufacturing process is also characterized by long lead times between the placement of orders for and delivery of our products. If we do not accurately anticipate our needs or if we receive insufficient components to manufacture our products on a timely basis to meet customer demand, our sales and our gross margin may be adversely affected, and our business could be materially harmed. If we are unable to reduce our manufacturing costs and establish and maintain reliable, high-volume manufacturing suppliers as we scale our operations and expand our product offerings, our business, operations, financial condition, and prospects could be materially and adversely harmed.

We may be unable to consistently manufacture our instruments and consumables, including SMRT Cells and reagents, to the necessary specifications or in quantities necessary to meet demand at an acceptable cost or at an acceptable performance level.

In order to successfully generate revenue from our products, we need to supply our customers with products that meet their expectations for quality and functionality in accordance with established specifications. Our customers have experienced variability in the performance of our products. We have experienced and may continue to experience delays, quality issues or other difficulties leading to customer dissatisfaction with our products. Our production of SMRT Cells, flow cells and of reagents for both our long- and short-read technologies, involve a long and complex manufacturing process and has been and may in the future be below desired yields and resulting output levels. We have experienced and may experience in the future manufacturing delays, product defects, variability in the performance of SMRT Cells, flow cells and other products, inadequate reserves for inventory, or other issues.

There is no assurance that we will be able to manufacture our products so that they consistently achieve the product specifications and quality that our customers expect, including any products developed for clinical uses. Problems in the design or quality of our products, including low manufacturing yields of SMRT Cells, flow cells, or sub-performing reagent lots may have a material adverse effect on our brand, business, financial condition, and operating results, and could result in us losing our ISO certifications. If we were to lose our ISO certifications, then our customers might choose not to purchase products from us. There is also no assurance that we will be able to increase manufacturing yields and decrease costs, particularly if high rates of inflation continue, or that we will be successful in forecasting customer demand or manufacturing and supply costs, or that product supplies, including reagents or integrated chips, will not be limited or interrupted, or will be of satisfactory quality or continue to be available at acceptable prices. Furthermore, while we are undertaking efforts to increase our manufacturing scale and capability, we may not be able to increase manufacturing to meet anticipated demand or may experience downtime in our manufacturing facilities, including, for example, if our suppliers are unable to meet our increased demand at a time when the supply chain is under duress due to potential dislocations and disruptions in product and employee availability (whether due to pandemics, government policy or otherwise). An inability to manufacture products and components that consistently meet specifications, in necessary quantities and at commercially acceptable costs, will have a negative impact, and may have a material adverse effect on our business, product development timelines, financial condition and results of operations.

Rapidly changing technology in life sciences and research diagnostics could make our products obsolete unless we continue to develop, manufacture and commercialize new and improved products and pursue new opportunities.

Our industry is characterized by rapid and significant technological changes, frequent new product introductions and enhancements and evolving industry standards. These new and evolving technologies may be superior to, impair, or render obsolete the products we currently offer or the technologies currently underlying our products. Our future success depends on our ability to continually improve our products, to develop and introduce new products that address the evolving needs of our customers on a timely and cost-effective basis and to pursue new opportunities. These new opportunities may be outside the scope of our proven expertise or in areas where demand is unproven, and new products and services developed by us may not gain market acceptance or may not adequately perform to capture market share. Our inability to develop and introduce new products and to gain market acceptance of our existing and new products could harm our future operating results. Unanticipated difficulties or delays in replacing existing products with new products or in commercializing our existing or new products in sufficient quantities and of acceptable quality to meet customer demand, including with respect to the SMRT Cell and the Sequel, Sequel II/IIe, Revio, Onso and Vega systems, could diminish future demand for our products and may materially and adversely harm our future operating results.

The size of the markets for our products, including our Revio, Onso and Vega instruments, may be smaller than estimated, and new market opportunities may not develop as quickly as we expect, or at all, limiting our ability to successfully sell our products.

The market for sequencing systems and consumables products is evolving, making it difficult to accurately predict the size of the markets for our current and future products, including our Revio, Onso and Vega instruments. Our estimates of the total addressable market for our current and future products are based on a number of internal and third-party estimates and assumptions that may be incorrect, including the assumptions that academic, governmental, corporate, or other sources of funding will continue to be available to life sciences researchers at times and in amounts necessary to allow them to purchase our products. In addition, sales of new products may take time to develop and mature and we cannot be certain that these market opportunities will develop as we expect. While we believe our assumptions and the data underlying our estimates of the total addressable market for our products are reasonable, these assumptions and estimates may not be correct and the conditions supporting our assumptions or estimates, or those underlying the third-party data we have used, may change at any time, thereby reducing the accuracy of our estimates. As a result, our estimates of the total addressable market and growth opportunities for our products may be incorrect.

The future growth of the market for our current and future products depends on many factors beyond our control, including recognition and acceptance of our products by the research and scientific communities, the growth, prevalence and costs of competing products and solutions and the development of robust ecosystems supporting our products and their methodologies. For example, the market acceptance and growth of long-read sequencing technologies, like our Revio and Vega systems, depends on a variety of factors, including the availability and cost-effectiveness of related tools for high quality sample collection and preparation and advanced bioinformatic tools to process results; as well as the perceived advantages and disadvantages of long-read sequencing compared to short-read or other sequencing technologies: consequently, if potential customers conclude the costs of adopting long-read sequencing technologies outweigh the benefits, the market for our Revio and Vega systems may be negatively impaired. There can be no assurance that our current or future products will gain traction in the market. If the markets for our current and future products are smaller than estimated or do not develop as we expect, our growth may be limited, and it could materially and adversely affect our business, operations, financial condition and prospects.

Increased market adoption of our products by customers may depend on the availability of sample preparation and informatics tools, some of which may be developed by third parties.

Our commercial success may depend in part upon the development of sample preparation and software and informatics tools by third parties for use with our products. We cannot guarantee that product supplies, including reagents, will not be limited or interrupted, or will be of satisfactory quality or continue to be available at acceptable prices, or that third parties will develop tools that our current and future customers will find useful with our products, or that customers will adopt such third-party tools on a timely basis or at all. A lack of complementary sample preparation and informatics tools, or delayed updates of such tools, may impede the adoption of our products and may materially and adversely impact our business.

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.

There are a significant number of companies offering nucleic acid sequencing products and/or services, including Illumina, BGI Genomics (also known as MGI or Complete Genomics), Thermo, ONT Ltd., Roche, Bionano, and Qiagen. Other companies recently entering the market include Ultima, Element and Singular. Many of these companies currently have greater name recognition, more substantial intellectual property portfolios, longer operating histories, significantly greater financial, technical, research and/or other resources, more experience in new product development, larger and more established manufacturing capabilities and marketing, sales, and support functions, and/or more established distribution channels to deliver products to customers than we do. These companies may be able to respond more quickly and effectively than we can to new or changing opportunities, technologies, standards, or customer requirements.

There are also several companies that are in the process of developing or have already developed and commercialized new, competing or potentially competing technologies, products and/or services, including ONT Ltd. and its subsidiaries, against whom we have filed complaints for patent infringement in the U.S. District Court for the District of Delaware and, previously, with the U.S. International Trade Commission, in the High Court of England and Wales and in the District Court of Mannheim, Germany. ONT Ltd. previously filed claims against us in the High Court of England and Wales and the District Court of Mannheim, Germany, also for patent infringement. Roche is developing potentially competing sequencing products. Increased competition may result in pricing pressures, which could harm our sales, profitability or market share. Our failure to further enhance our existing products and to introduce new products to compete effectively could materially and adversely affect our business, operations, financial condition, and prospects.

We may be unable to successfully increase sales of our current products or market and sell our future products.

Our ability to achieve profitability depends, in part, on our ability to attract customers for our current and future products including Revio and Onso, and we may be unable to effectively market or sell our products or find appropriate partners to do so. To perform sales, marketing, distribution, and customer support functions successfully, we face a number of risks, including:

- our ability to attract, retain and manage qualified sales, marketing, and service personnel necessary to expand market acceptance for our technologies;
- the performance and commercial availability expectations of our existing and potential customers with respect to new and existing products;
- availability of potential sales and distribution partners to sell our technologies, and our ability to attract and retain such sales and distribution partners;
- the time and cost of maintaining and growing a specialized sales, marketing and service force for a particular application, which may be difficult to justify in light of the revenue generated; and
- our sales, marketing and service force may be unable to execute successful commercial activities.

We have, and may in the future, use promotional pricing and similar measures to attract purchases of our products. These measures may not be successful in attracting purchases and, even if successful, may negatively impact our gross margins.

We have enlisted and may continue to enlist third parties to assist with sales, equipment leasing, distribution and customer support. There is no guarantee that we will be successful in attracting desirable sales and distribution partners, that we will be able to enter into arrangements with such partners on terms favorable to us or that we will be able to retain such partners on a going-forward basis. If our sales and marketing efforts, or those of any of our third-party sales and distribution partners, are not successful, or our products do not perform in accordance with customer expectations, our technologies and products may not gain market acceptance, which could materially and adversely impact our business, operations, financial condition, and prospects.

Large purchases by a limited number of customers represent a significant portion of our revenue, and any loss or delay of expected purchases has resulted, and in the future could result, in material quarter-to-quarter fluctuations of our revenue or otherwise adversely affect our results of operations.

We receive a significant portion of our revenue from a limited number of customers. While for the three months ended March 31, 2025, and 2024, no customer accounted for 10% or more of our total revenue, many of our customers make large purchases on a purchase-order basis rather than pursuant to long-term contracts. As a consequence of the concentrated nature of our customer base and their purchasing behavior, our quarterly revenue and results of operations have fluctuated, and may fluctuate in the future, from quarter to quarter and are difficult to forecast. For example, the cancellation of orders or acceleration or delay in anticipated product purchases or the acceptance of shipped products by our larger customers has materially affected, and in the future could materially affect, our revenue and results of operations in any quarterly period. We have been, and may in the future be, unable to sustain or increase our revenue from our larger customers, or offset any discontinuation or decrease of purchases by our larger customers with purchases by new or other existing customers. To the extent one or more of our larger customers experience significant financial difficulty, bankruptcy or insolvency, this could have a material adverse effect on our sales and our ability to collect on receivables, which could materially and adversely harm our financial condition and results of operations.

In addition, many of our customers, including some of our larger customers, have negotiated, or may in the future negotiate, volume-based discounts or other more favorable terms from us or our sales and distribution partners, which can and have had a negative effect on our gross margins or revenue.

We expect that such concentrated purchases will continue to contribute materially to our revenue for the foreseeable future and that our results of operations may fluctuate materially as a result of such larger customers' buying patterns. In addition, we may see consolidation of our customer base. The loss of one of our larger customers, a significant delay or reduction in its purchases, or any volume-based discount or other more favorable terms that we or our sales and distribution partner(s) may agree to provide, in light of the aggregated purchase volume or buying power resulting from such consolidation, has harmed, and in the future could harm, our business, financial condition, results of operations and prospects.

Our products are highly complex, have recurring support requirements and could have unknown defects or errors, which may give rise to claims against us or divert application of our resources from other purposes.

Our products are highly complex and may develop or contain undetected defects or errors. Our customers have previously experienced reliability issues with our existing products, including the Sequel and Sequel II/IIe systems. In addition, it is possible our customers could experience reliability issues with current or future products, including the Sequel II/IIe, Revio, Onso and Vega systems. Despite internal and external testing, defects, or errors may arise in our products, which could result in a failure to obtain, maintain, or increase market acceptance of our products, diversion of development resources, injury to our reputation and increased warranty, service, and maintenance costs. New products, including the Revio, Onso and Vega systems, or enhancements to our existing products, including the SMRT Cell and the Sequel II/IIe systems, in particular may contain undetected errors or performance problems that are discovered only after delivery to customers. If our products have reliability or other quality issues or require unexpected levels of support in the future, the market acceptance and utilization of our products may not grow to levels sufficient to support our costs and our reputation and business could be harmed. Low utilization rates of our products has and could in the future cause our revenue and gross margins to be adversely affected. We provide a warranty for our sequencing instruments and consumables, which is generally limited to replacing, repairing, or at our option, giving credit for any sequencing instrument or consumable with defects in material or workmanship. Service contracts for our sequencing instruments may be separately purchased. Defects or errors in our products may also discourage customers from purchasing our products. The costs incurred in correcting any defects or errors may be substantial and could materially and adversely affect our operating margins. If our service and support costs increase, our business and operations may be materially and adversely affected.

In addition, such defects or errors could lead to the filing of product liability claims against us or against third parties whom we may have an obligation to indemnify against such claims, which could be costly and time-consuming to defend and result in substantial damages. Although we have product liability insurance, any product liability insurance that we have or procure in the future may not protect our business from the financial impact of a product liability claim. Moreover, we may not be able to obtain adequate insurance coverage on acceptable terms. Any insurance that we have or obtain will be subject to deductibles and coverage limits. A product liability claim could have a material adverse effect on our business, financial condition, and results of operations.

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

Our instruments represent significant capital expenditures for our customers in research applications. Current and potential customers for our current or future products include academic and government institutions, genome centers, medical research institutions, clinical laboratories, pharmaceutical, agricultural, biotechnology, diagnostic and chemical companies. Their spending budgets can have a significant effect on the demand for our products. Spending budgets are based on a wide variety of factors, including the allocation of available resources to make purchases, funding from government sources which is highly uncertain and subject to change, including the persistent uncertainty surrounding NIH and academic funding, the spending priorities among various types of research equipment, policies regarding capital expenditures during economically uncertain periods and the potential impacts from health epidemics or pandemics. Any decrease in capital spending or change in spending priorities of our current and potential customers could significantly reduce the demand for our products. Any delay or reduction in purchases by current or potential customers or our inability to forecast fluctuations in demand could materially and adversely harm our future operating results.

We may not be able to convert our orders in backlog into revenue.

Our backlog represents product orders from our customers that we have confirmed but have not been able to fulfill, and, accordingly, for which we have not yet recognized revenue. We may not receive revenue from these orders, and any order backlog we report may not be indicative of our future revenue.

Many events can cause an order to be delayed or not completed at all, some of which may be out of our control, including the potential impacts from health epidemics or pandemics and our suppliers, especially our sole source suppliers, not being able to provide us with products or components. If we delay fulfilling customer orders or if customers reconsider their orders, those customers may seek to cancel or modify their orders with us. Customers may otherwise seek to cancel or delay their orders even if we are prepared to fulfill them. If our orders in backlog do not result in sales, our operating results may suffer.

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

The sales cycles for our sequencing instruments are lengthy because they represent a major capital expenditure and generally require the approval of our customers' senior management. This may contribute to substantial fluctuations in our quarterly or annual operating results, particularly during periods in which our sales volume is low. Because of these fluctuations, it is likely that in some future quarters our operating results will fall below the expectations of securities analysts or investors. If that happens, the market price of our stock would likely decrease. Past fluctuations in our quarterly and annual operating results have resulted in decreases in our stock price. Such fluctuations also mean that investors may not be able to rely on our operating results in any particular period as an indication of future performance. Sales to existing customers and the establishment of a business relationship with other potential customers is a lengthy process, generally taking several months and sometimes longer. Following the establishment of the relationship, the negotiation of purchase terms can be time-consuming, including as a result of seasonal factors, as discussed below, and a potential customer may require an extended evaluation and testing period. Our sales cycles may also lengthen, and those sales cycles may result in lower units sold per cycle, as we continue to introduce our Revio and Vega instruments and their associated consumables to the market, as our customers may have additional administrative, technical or other requirements associated with transitioning to new products and technologies. In anticipation of product orders, we may incur substantial costs before the sales cycle is complete and before we receive any customer payments. As a result, if a sale is not completed or is canceled or delayed, we may have incurred substantial expenses, making it more difficult for us to become profitable or otherwise negatively impacting our financial results. Even if our selling efforts are successful, the realization of revenue may be substantially delayed, our ability to forecast our future revenue may be more limited and our revenue may fluctuate significantly from quarter to quarter and year over year. For more information on the impact of these fluctuations on our results and stock price, see "*—Our operating results fluctuate from quarter to quarter and year over year, which makes our future results difficult to predict and could negatively impact the market price of our common stock*," below.

Because some of our customers and suppliers are based in China, our business, financial condition and results of operations could be adversely affected by the political and economic tensions between the United States and China.

We are subject to risks associated with political conflicts between the U.S. and China. While for the three months ended March 31, 2025 and 2024, no customer accounted for 10% or more of our total revenue, a portion of our revenue is generated from China. In addition, certain components, some of which are critical components, of our products are manufactured in China. These components are either sourced directly from companies in China or indirectly from third parties that source from companies in China.

Consequently, we are subject to significant risks associated with the trading relationship between the U.S. and China, which is currently characterized by significant uncertainty. Tariffs imposed by the U.S. and China have increased, and may continue to increase, our costs. Additionally, export restrictions imposed by the U.S. may impact our ability to export certain products to customers or distributors in China and restrict our ability to use certain integrated circuits in our products, and it is possible that additional restrictions will be put in place that could impact our ability to provide our products to customers or distributors in China or source components from China. Moreover, the Chinese government may continue to retaliate against U.S. trade restrictions in ways that could impact our business, including through the imposition of additional tariffs on imports from the U.S. and/or the imposition of additional export controls affecting the export of certain items from China. Given the relatively fluid regulatory environment in China and the United States and uncertainty how the U.S. or foreign governments will act with respect to export controls, tariffs, international trade agreements and policies, there could be additional import, export, tax, or other regulatory changes in the future. Any such changes could directly and adversely impact our financial results and results of operations. For more information, see "*—Enhanced trade tariffs, import restrictions, export restrictions or other trade barriers may materially harm our business.*"

Other risks could include:

- interruptions to operations in China as a result of potential disease outbreaks or natural catastrophic events, which have in the past and can result in the future in business closures, transportation restrictions, import and export complications and cause shortages in the supply of raw materials or disruptions in manufacturing;
- product supply disruptions and increased costs as a result of heightened exposure to changes in the policies of the Chinese government, political unrest or unstable economic conditions in China; and
- the nationalization or other expropriation of private enterprises or intellectual property by the Chinese government.

Difficulties in this relationship may require us to take actions adverse to our business to comply with governmental restrictions on business and trade with China.

We face significant risks associated with doing business with Taiwanese suppliers and manufacturers due to the tense relationship between Taiwan and mainland China.

Substantially all of our consumable chips are partly manufactured by a company based in Taiwan. Our supply of consumables chips and other critical components may be materially and adversely affected by diplomatic, geopolitical, military and other developments affecting the relationship between China and Taiwan. Recent military exercises in the Taiwan Strait have contributed to geopolitical uncertainty regarding the future of the relationship between China and Taiwan. Current or future diplomatic, geopolitical, military or other tensions between China and Taiwan, including trade disputes, may lead to circumstances that negatively affect the availability of such consumable chips and other critical components to us, which could limit or prohibit our ability to manufacture consumable chips and other critical components or lead to an increase in our supply costs if we cannot find a similar cost alternative supplier, which could materially and adversely impact our business, operations, prospects, financial condition and results, and results of operations.

Our operating results fluctuate from quarter to quarter and year over year, which makes our future results difficult to predict and could negatively impact the market price of our common stock.

Sales of our products, particularly our sequencing instruments, are subject to significant seasonality due to several factors, including the procurement and budgeting cycles of many of our customers, especially government-funded customers, which often coincide with government fiscal year ends and significant holidays disrupting business and sales activities in key markets. These factors have contributed, and in the future may contribute, to substantial fluctuations in our quarterly operating results.

Our operating results during any given period can also be impacted by numerous other factors, including the following:

- market acceptance for our products;
- our ability to attract new customers;
- the length of our sales cycles, as discussed above;
- our ability to achieve economies of scale and other manufacturing efficiencies at the rate we anticipate;

- publications of studies by us, our competitors or third parties;
- the timing and success of new product introductions by us or our competitors or other changes in the competitive dynamics of our industry, such as consolidation;
- the amount and timing of our costs and expenses;
- changes in our pricing policies or those of our competitors;
- general economic, industry and market conditions;
- the impact of catastrophic events, including health epidemics or pandemics and military or other armed conflicts;
- the regulatory environment in which we operate;
- expenses associated with warranty obligations or unforeseen product quality issues;
- the hiring, training, and retention of key employees, including our ability to grow our sales organization;
- litigation or other claims against us for intellectual property infringement or otherwise;
- our ability to obtain additional financing as necessary; and
- changes or trends in new technologies and industry standards.

Consequently, it is possible that in some quarters our operating results will fall below the expectations of securities analysts or investors. If that happens, the market price of our common stock would likely decrease. These fluctuations, among other factors, also mean that our operating results in any particular period may not be relied upon as an indication of future performance. Additionally, any bankruptcy of a customer or other party with whom we do business, or the failure of any such party to make payments when due, or any breach or default by any such party, or the loss of any significant partnerships, could impact our revenue recognition or result in material losses to us, which may have a material adverse impact on our business. Seasonal or cyclical variations in our sales have in the past, and may in the future, become more or less pronounced over time, and have in the past materially affected, and may in the future materially affect, our business, financial condition, results of operations, and prospects.

Our ability to use net operating losses and certain other tax attributes to offset future taxable income may be subject to substantial limitations.

Under Sections 382 and 383 of the Internal Revenue Code of 1986, as amended, a corporation that undergoes an “ownership change” is subject to limitations on its ability to utilize its pre-change net operating losses (“NOLs”) and other pre-change tax attributes, such as research and development credits, to offset its post-change taxable income or tax liability. An “ownership change” is generally defined as a greater than 50% change (by value) in a corporation’s equity ownership by “5 percent shareholders” over a rolling three-year period. We believe that we have had one or more ownership changes, and as a result our existing NOLs are currently subject to limitation. Future changes in our stock ownership could result in additional ownership changes, including potentially material changes, under Sections 382 and 383. Further, California has enacted legislation that limits the use of state NOLs for tax years beginning on or after January 1, 2024 and before January 1, 2027. Other limitations may also apply under state tax law. As a result of this legislation or other unforeseen reasons, we may not be able to utilize some or all of our NOLs even if we attain profitability.

Changes in tax law and differences in interpretation of tax laws and regulations could adversely impact our business and financial condition.

We operate in multiple jurisdictions and are subject to tax laws and regulations of the U.S. federal, state and local and non-U.S. governments. Tax laws, regulations and administrative practices in these jurisdictions may be subject to significant changes, with or without advance notice. Changes in tax laws, regulations or rulings, changes in interpretations of existing laws and regulations or changes in accounting principles could negatively and materially affect our financial position, cash flows, and results of operations.

Our facilities in California are located near 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 California are located near earthquake fault zones and are vulnerable to damage from earthquakes. We are also vulnerable to damage from other types of disasters, including fire, floods, power loss, communications failures and similar events. If any disaster were to occur, our ability to operate our business at our facilities would be seriously, or potentially completely, impaired. In addition, the nature of our activities could cause significant delays in our research programs and commercial activities and make it difficult for us to recover from a disaster. The insurance we maintain may not be adequate to cover our losses resulting from disasters or other business interruptions. Accordingly, an earthquake or other disaster could materially and adversely harm our ability to conduct business.

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 current 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;
- the scope of the patent protection we or our licensors obtain may not be sufficiently broad 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, are 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;
- our enforcement of patents and proprietary rights in other countries may be problematic or unpredictable;
- we may not be able to prevent third parties from practicing our inventions in all countries outside the United States, or from selling or importing products made using our inventions in and into the United States or other jurisdictions;
- we or our partners 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 by country. 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 the patents that may be granted to us with certainty, 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. 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 would eliminate barriers against our competition. 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 or contract breach in litigation or other administrative proceedings that could result in damage awards against us and injunctions that could prohibit us from selling our products. In addition, some of our licenses from third parties limit the field in which we can use the licensed technology. Therefore, for us to use such licensed technology in potential future applications that are outside the licensed field of use, we may be required to negotiate new licenses with our licensors or expand our rights under our existing licenses. We cannot be certain that we will be able to obtain such licenses or expanded rights on reasonable terms or at all. In the event a dispute with our licensors were to occur, our licensors may seek to renegotiate the terms of our licenses, increase the royalty rates that we pay to obtain and maintain those licenses, limit the field or scope of the licenses, or terminate the license agreements. In addition, we have limited rights to participate in the prosecution and enforcement of the patents and patent applications that we have licensed. If we fail to meet our obligations under these licenses, or if we have a dispute regarding the terms of the licenses, these third parties could terminate the licenses, which could subject us to claims of intellectual property infringement. 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 and enforce 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 and consultants to enter into confidentiality and assignment of inventions agreements, and by entering into confidentiality agreements with our third-party development, manufacturing, sales, and distribution partners, who may also acquire, develop and/or commercialize alternative or competing products or provide services to our competitors. For example, Roche had certain access to our trade secrets and other proprietary information pursuant to an agreement we had entered into with Roche, subject to the confidentiality provisions thereof (certain of which provisions survive the termination of the agreement); however, Roche is developing potentially competing sequencing products. There can be no assurance that our measures have provided or 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, are and may in the future be, subject to challenges by ONT Ltd., Oxford Nanopore Technologies, Inc. ("ONT Inc.") and Metrichor, Ltd. (“Metrichor” and, together with ONT Ltd. and ONT Inc., “ONT”) in addition to other parties asserting prior invention by others or invalidity on various grounds, through proceedings, such as interferences, reexaminations, or opposition proceedings. Addressing these challenges to our intellectual property has been, and any future challenges can be, costly and distract management’s attention and resources. For example, we previously incurred significant legal expenses to litigate and settle a complaint seeking review of a patent interference decision of the U.S. Patent and Trademark Office. Additionally, ONT previously requested that the U.S. Patent and Trademark Office institute *inter partes* reviews of certain patents that we have asserted against ONT Inc. and ONT Ltd. in litigation proceedings for patent infringement. While none of the *inter partes* reviews requested by ONT were instituted by the U.S. Patent and Trademark Office, challenges of this nature before the Patent Trial and Appeal Board (“PTAB”) in the future could result in determinations that our patents or pending patent applications are unpatentable to us, or are invalidated or unenforceable in whole or in part and could require us to expend significant time, funds, and other resources in litigating such challenges. Accordingly, adverse rulings in such proceedings could negatively impact the scope of our intellectual property protection for our products and technology and could materially and adversely affect our business. Similar mechanisms for challenging the validity and enforceability of a patent exist in foreign patent offices and courts and may result in the revocation, cancellation, or amendment of any foreign patents we hold now or in the future. The outcome following legal assertions of invalidity and unenforceability is unpredictable, and prior art could render our patents invalid. If a defendant were to prevail on a legal assertion of invalidity and/or unenforceability, we would lose at least part, and perhaps all, of the patent protection on such products. Such a loss of patent protection would have a material adverse impact on 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 such action is necessary to (i) achieve practical application of the U.S. government-funded technology, (ii) alleviate health or safety needs, (iii) meet requirements of federal regulations, or (iv) give preference to U.S. industry. In addition, U.S. government-funded inventions must be reported to the government and such government funding must be disclosed in any resulting patent applications. Furthermore, our rights in such inventions are subject to government license rights and foreign manufacturing restrictions. The U.S. government has generally denied requests to exercise its march-in rights, even to provide access to potentially life-saving medications; however, if the U.S. government were to exercise its march-in rights to our patent technologies funded by the U.S. government, particularly for the benefit of one of more of our competitors, that may have a material adverse effect on our business.

We are 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 have from time to time taken, and may in the future take, actions that we believe violate our patent rights. For example, we were previously involved in legal proceedings with ONT and Harvard University in several United States and European jurisdictions. We have in the past received adverse rulings against us with respect to our complaint with the United States International Trade Commission for one of these proceedings. Legal actions to enforce our patent rights have been, and will continue to be, expensive, and may divert significant management time and resources. Adverse parties from previous legal actions have brought, and they and others may in the future bring, claims against us and/or our intellectual property. Litigation is a significant ongoing expense, recognized in sales, general and administrative expense, with an uncertain outcome, and has been, and may in the future be, a material expense for us. Our enforcement actions may not be successful, have given rise to legal claims against us and could result in some of our intellectual property rights being determined to be invalid or not enforceable. Furthermore, an adverse determination or judgement could lead to an award of damages against us, or the issuance of an injunction against us or our products that could prevent us from selling any products found to be infringing the intellectual property rights of another party.

We have been, are currently, 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 that belong 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 have claimed, and may in the future claim, that we infringe their patent rights and have filed, and may in the future file lawsuits or engage in other proceedings against us to enforce their patent rights. For example, we are involved in legal proceedings for alleged patent infringement and related matters in the United States with Personal Genomics of Taiwan, Inc. ("PGI"), Take2 Technologies, Ltd., and the Chinese University of Hong Kong. In addition, ONT Ltd. and Harvard University have, in the past, filed claims against us in the High Court of England and Wales and the District Court of Mannheim, Germany for patent infringement, and PGI has filed claims against us in the U.S. District Court for the District of Delaware and in the Wuhan People's Court in China. We are aware of other issued patents and patent applications owned by third parties that could be construed to read on our products, and related maintenance and support services. Although we do not believe that our products or services infringe any valid issued patents, the third-party owners of these patents and applications may in the future claim that we infringe their patent rights and file lawsuits against us. 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. Furthermore, parties making claims against us may be able to obtain injunctive or other relief, which effectively could block our ability to further develop or commercialize products or services and could result in the award of substantial damages against us. Patent litigation between competitors in our industry is common. Additionally, we have certain obligations to many of our customers and suppliers 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 have in the past incurred, and could in the future incur, to defend ourselves or our customers, substantial costs, and the attention of our management and technical personnel could be diverted. For example, we previously incurred significant legal expenses to litigate and settle a complaint alleging patent infringement. Even if we have an agreement that indemnifies 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 us to 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 that we 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 us paying substantial damage awards or being prevented from further developing or selling some or all of our products, which could materially and 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 the 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 or otherwise materially and adversely affect our business.

Risks Related to Regulation

We are, and may become, subject to governmental regulations 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 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, and we could experience disruption in our supply chain as a result of certain geopolitical events and conflicts and any related political or economic responses and counter-responses or otherwise by various global actors. On January 15, 2025, the United States Department of Commerce's Bureau of Industry and Security ("BIS") issued an Interim Final Rule ("IFR") implementing targeted export controls on certain analytical instruments that are highly suitable for generating large, detailed biological datasets based upon the potential to exploit these techniques for asymmetric military advantage. While the Company's products would not be included under the current IFR, future BIS or other government regulations could potentially apply to our products and/or negatively impact our ability to export those products to certain countries and markets. Additionally, restrictions on the ability to send certain products and technology related to semiconductors, semiconductor manufacturing, and supercomputing to China continue to increase in both product and country scope and may impact our ability to provide products to customers or distributors worldwide. We have expanded and are continuing to expand the international jurisdictions into which we supply products, which increases the risks surrounding governmental regulations relating to our business. The need to or failure to satisfy export control criteria or to obtain necessary clearances could delay or prevent shipment of products, which could materially and adversely affect our revenue and profitability. Moreover, the life sciences industry, which is expected to continue 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 regulations that may adversely affect 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.

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. Failure to comply with government 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 the cost of operating our business. In addition, changes to laws and government regulations could cause a material adverse effect on our business as we will need to adapt our business to comply with such changes. For example, a governmental prohibition on the use of human *in vitro* diagnostics or other regulations that negatively impact the research and development activities of our customers would adversely impact our commercialization of products on which we have expended significant research and development resources, which would in turn have a material adverse impact on our business and prospects.

Our products could become subject to government regulation as medical devices by the U.S. Food and Drug Administration or other domestic and international regulatory agencies even if we do not elect to seek regulatory clearance or approval to market our products for diagnostic purposes, which could increase our costs and impede or delay our commercialization efforts, thereby materially and adversely affecting our business and results of operations.

Our products are currently labeled and promoted as research use only ("RUO") products and are not currently designed, or intended to be used, for clinical diagnostic tests or as medical devices. However, in the future, certain of our products or related applications, such as those that may be developed for clinical uses, could be subject to regulation by the FDA, or the FDA's regulatory jurisdiction could be expanded to include our products. Also, even if our products are labeled, promoted, and intended as RUO, the FDA or comparable agencies of other countries could disagree with our conclusion that our products are intended for research use only or deem our sales, marketing and promotional efforts as being inconsistent with the FDA's guidance on RUO products. For example, our customers may independently elect to use our RUO labeled products in their own LDTs for clinical diagnostic use, which could subject our products to government regulation, and the regulatory clearance or approval and maintenance process for such products may be uncertain, expensive, and time-consuming.

In particular, in 2013, the FDA issued Final Guidance "Distribution of In Vitro Diagnostic Products Labeled for Research Use Only." The guidance emphasizes that the FDA will review the totality of the circumstances when it comes to evaluating whether equipment and testing components are properly labeled as RUO. The final guidance states that merely including a labeling statement that the product is for research purposes only will not necessarily render the device exempt from the FDA's clearance, approval, and other regulatory requirements if the circumstances surrounding the distribution, marketing and promotional practices indicate that the manufacturer knows its products are, or intends for its products to be, used for clinical diagnostic purposes. These circumstances may include written or verbal sales and marketing claims or links to articles regarding a product's performance in clinical applications and a manufacturer's provision of technical support for clinical applications.

The FDA has historically exercised enforcement discretion in not enforcing the medical device regulations against laboratories developing and offering LDTs. In May 2024, the FDA issued a final rule that phases out its enforcement discretion for LDTs, unless exempt, and amends the FDA's regulations to make explicit that in vitro diagnostics are medical devices under the Federal Food, Drug, and Cosmetic Act ("FDCA"), including when the manufacturer of the diagnostic product is a laboratory. On March 31, 2025, U.S. District Court in Texas ruled that FDA exceeded its authority and vacated and set aside this LDT final rule in its entirety. We will continue to monitor this case, as well as any future lawsuits brought against the FDA, and future legislative and administration actions on our business. Additionally, in June 2024, the U.S. Supreme Court overruled the Chevron doctrine, which gave deference to regulatory agencies' statutory interpretations in litigation against federal government agencies, such as the FDA, where the law is ambiguous. This landmark Supreme Court decision may invite various stakeholders to bring lawsuits against the FDA to challenge longstanding decisions of the FDA, which could undermine the FDA's authority and lead to uncertainties in the industry. We cannot predict the full impact of this decision on our business or that of our customers.

Further, under the new leadership at the Department of Health and Human Services under the Trump administration, agency reorganization, departure of high-profile regulators at the FDA, layoffs due to the reduction in force initiative may impact the normal operations of federal agencies, including FDA. NIH funding cuts can impact the business operations of our customers and decrease the demand for our products. It is unclear how our industry and the businesses of our customers will be impacted by executive orders, policies and regulations implemented under the Trump administration. There is significant uncertainty in the industry.

Future legislative or administrative actions can impact the sales of our products and how customers use our products, and may require us to change our business model in order to maintain compliance with applicable laws. Changes to the current regulatory framework could arise at any time during the development or marketing of our products, which may negatively affect our ability to obtain or maintain FDA or comparable regulatory approval of our products, if required. Further, sales of devices for diagnostic purposes may subject us to additional healthcare regulation and enforcement by the applicable government agencies. Such laws include, without limitation, state and federal anti-kickback or anti-referral laws, healthcare fraud and abuse laws, false claims laws, privacy and security laws, Physician Payments Sunshine Act and related transparency and manufacturer reporting laws, and other laws and regulations applicable to medical device manufacturers.

If the FDA determines our products or related applications should be subject to additional regulation as in vitro diagnostic devices based upon customers' use of our products for clinical diagnostic or therapeutic decision-

making purposes, our ability to market and sell our products could be impeded and our business, prospects, results of operations and financial condition may be adversely affected. In addition, the FDA could consider our products to be misbranded or adulterated under the FDCA and subject to recall and/or other enforcement action.

To the extent we elect to label and promote any of our products as medical devices, we would be required to obtain prior approval or clearance by the FDA or comparable foreign regulatory authority, which could take significant time and expense and could fail to result in a marketing authorization for the intended uses we believe are commercially attractive. Obtaining marketing authorization in one jurisdiction does not mean that we will be successful in obtaining marketing authorization in other jurisdictions where we conduct business.

If we elect to label and market our products for use as, or in the performance of, clinical diagnostics in the United States, thereby subjecting them to FDA regulation as medical devices, we would be required to obtain pre-market 510(k) clearance or pre-market approval from the FDA, unless an exception applies. It is possible, in the event we elect to submit 510(k) applications for certain of our products, that the FDA would take the position that a more burdensome pre-market application, such as a PMA or a *de novo* application is required for some of our products. If such applications were required, greater time and investment would be required to obtain FDA approval. Even if the FDA agreed that a 510(k) was appropriate, FDA clearance can be expensive and time consuming. It generally takes a significant amount of time to prepare a 510(k), including conducting appropriate testing on our products, and several months to years for the FDA to review a submission. Notwithstanding the effort and expense, FDA clearance or approval could be denied for some or all of our products for which we choose to market as a medical device or a clinical diagnostic device. Even if we were to seek and obtain regulatory approval or clearance, it may not be for the intended uses we request or that we believe are important or commercially attractive. There can be no assurance that future products for which we may seek pre-market clearance or approval will be approved or cleared by FDA or a comparable foreign regulatory authority on a timely basis, if at all, nor can there be assurance that labeling claims will be consistent with our anticipated claims or adequate to support continued adoption of such products. Compliance with FDA or comparable foreign regulatory authority regulations will require substantial costs, and subject us to heightened scrutiny by regulators and substantial penalties for failure to comply with such requirements or the inability to market our products. The lengthy and unpredictable pre-market clearance or approval process, as well as the unpredictability of the results of any required clinical studies, may result in our failing to obtain regulatory clearance or approval to market such products, which would significantly harm our business, results of operations, reputation, and prospects.

If we sought and received regulatory clearance or approval for certain of our products, we would be subject to ongoing FDA obligations and continued regulatory oversight and review, including the general controls listed above and the FDA's Quality System Regulations for our development and manufacturing operations. In addition, we would be required to obtain a new 510(k) clearance before we could introduce subsequent material modifications or improvements to such products. We could also be subject to additional FDA post-marketing obligations for such products, any or all of which would increase our costs and divert resources away from other projects. If we sought and received regulatory clearance or approval and are not able to maintain regulatory compliance with applicable laws, we could be prohibited from marketing our products for use as, or in the performance of, clinical diagnostics and/or could be subject to enforcement actions, including warning letters and adverse publicity, fines, injunctions, and civil penalties; recall or seizure of products; operating restrictions; and criminal prosecution.

Further, if we decide to seek regulatory clearance or approval for certain of our products in countries outside of the United States or if a foreign regulatory authority determines that our products are regulated as medical devices, we would be subject to extensive medical device laws and regulations outside of the United States. Sales of such products outside the United States will likely be subject to foreign regulatory requirements, which can vary greatly from country to country. As a result, the time required to obtain clearances or approvals outside the United States may differ from that required to obtain FDA clearance or approval and we may not be able to obtain foreign regulatory approvals on a timely basis or at all. In Europe, we would need to comply with the Medical Device Regulation 2017/745 and In Vitro Diagnostic Regulation 2017/746, which could make obtaining regulatory approvals in Europe more challenging. In addition, the FDA regulates exports of medical devices. The number and scope of these requirements are increasing. Unlike many of the other companies offering nucleic acid sequencing equipment or consumables, this is an area where we do not have expertise. We, or our other third-party sales and distribution partners, 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. Failure to comply with these regulatory requirements or obtain and maintain required approvals, clearances and certifications could impair our ability to commercialize our products for diagnostic use outside of the United States. Any action brought against us for violations of these laws or regulations, even if successfully defended, could cause us to incur significant legal expenses and divert our management's attention from the operation of our business.

Enhanced trade tariffs, import restrictions, export restrictions, or other trade barriers may materially harm our business.

We are continuing to expand our international operations as part of our growth strategy and have experienced an increasing concentration of sales in certain regions outside the United States, especially the Asia-Pacific region, as discussed above. There is currently significant uncertainty about the future relationship between the United States and various other countries, most significantly China, with respect to trade policies, treaties, government regulations and tariffs. Starting in September 2018, the U.S. Trade Representative (the "USTR") enacted various tariffs ranging from 7.5% to 25% on the import of Chinese products, including non-U.S. components and materials that may be used in our products. Since that time, USTR has enacted further tariff increases on certain Chinese products, in some instances raising this additional tariff on these products to up to 100%. In February 2025, the U.S. government also enacted an additional 10% ad valorem tariff on almost all imports of Chinese-origin goods, and in March 2025, this tariff was further escalated to 20% ad valorem. An additional reciprocal 125% ad valorem tariff has been imposed by the U.S. on many Chinese-origin goods since April 2025—alongside an 10% ad valorem tariff on almost all imports from trading partners other than China, Canada, Mexico, and countries with which the U.S. does not have normal trade relations—with limited exceptions for pharmaceuticals, semiconductors, computers, and certain other imports. Additionally, China also has imposed tariffs on imports into China from the United States. These tariffs have and could continue to raise our costs. Furthermore, tariffs, trade restrictions, or trade barriers that have been, and may in the future be, placed on products such as ours by foreign governments, especially China, have raised, and could further raise, amounts paid for some or all of our products, which may result in the loss of customers and our business, and our financial condition and results of operations may be harmed. In February 2025, the Trump Administration also announced new 25% tariffs on imports from Canada and Mexico, which were temporarily suspended subject to further negotiations, and partially implemented with respect to goods not eligible for duty-free import under the U.S.-Mexico-Canada Agreement as of March 2025. U.S. tariffs of 25% have also been implemented on a wider array of imported steel and aluminum items as of March 2025, on automobiles as of April 2025 and on automobile components as of May 2025. Additional reciprocal tariffs on a wide range of U.S. trading partners were briefly implemented in April 2025 and have been temporarily suspended through July 2025. Additional tariffs may be forthcoming, including tariffs on items that have been the subject of recent U.S. executive orders and U.S. government tariff investigations, including (i) critical minerals and derivative products thereof (e.g., semiconductor wafers, semiconductors, and semiconductor manufacturing equipment) and (ii) pharmaceuticals and pharmaceutical products. Further tariffs may be imposed that could cover imports of additional components and materials used in our products and our business may be adversely impacted by these measures or by retaliatory trade measures taken by China, Canada, the EU, or other countries, including restricted access to components or materials used in our products or increased amounts that must be paid for our products, which could materially harm our business, financial condition, and results of operations. We may be unable to make changes in our supply chain quickly enough to avoid the impact of new or potential tariffs, or to do so on commercially reasonable terms. Uncertainty regarding the scope and amount of potential additional tariffs may also result in disruptions in our supply chain, particularly if such changes in applicable or potential tariffs makes current or planned production unprofitable. In addition, these tariff actions may also indirectly affect our business through impacts on our customers, who may be directly affected by some or all of these tariff actions, or indirectly affected by macroeconomic effects resulting from these or other tariff related actions, including potential risks associated with inflation or economic recession.

Our products are subject to U.S. export control laws and regulations, including the Export Administration Regulations administered by the U.S. Department of Commerce's Bureau of Industry and Security. Under these laws and regulations, exports of our products as well as the underlying technology may require export authorization, including by license, a license exception, or other appropriate government authorizations. Furthermore, our products and services are subject to U.S. economic and trade sanctions laws and regulations administered by the U.S. Department of Treasury's Office of Foreign Assets Control that prohibit the provision of services and the export of hardware, software, and technology to embargoed jurisdictions or sanctioned parties without the required export authorizations. The U.S. government has continued to increase controls imposed in 2022 restricting the ability to send certain products and technology related to semiconductors, semiconductor manufacturing, and supercomputing. In 2023 and 2024, the U.S. government expanded the list of advanced integrated circuits subject to heightened export controls, including certain hardware containing these specified integrated circuits, expanded the list of destinations requiring export authorization for such items, and added new restrictions based on the headquarters location of the parties involved. Regulations further expanding the controls to impose a worldwide licensing requirement on certain integrated circuits and computing resources that are used for training of AI models are currently in effect and have a scheduled compliance date of May 15, 2025, after which time companies may be subject to further enforcement. In many cases, these licenses are subject to a policy of denial and will not be issued. The U.S. government also continues to add additional entities in China and other countries to restricted party lists impacting the ability of U.S. companies to provide items to these entities. These existing and future laws and regulations may impact our ability to export certain products to customers or distributors in China or other locations and restrict our ability to use certain integrated circuits in our products. Should we violate such existing or similar laws or regulations, we may be subject to substantial monetary fines or suffer reputational damage and other penalties that could negatively impact our business. If we need to obtain any necessary export licenses or other authorizations for a particular sale, the process may be time-consuming and may result in the delay or loss of opportunities to sell our products.

Moreover, in November 2018, the U.S. Commerce Department's Bureau of Industry and Security ("BIS") released an advance notice of proposed rulemaking to control the export of emerging technologies. This notice included "[b]iotechnology, including nanobiology; synthetic biology; genomic and genetic engineering; or neurotech" as possible areas of increased export controls. Since 2018, the U.S. government has continued to provide updated lists of emerging technologies subject to national security consents. These lists continue to include biotechnologies including "[g]enome and protein engineering including design tools" and "[b]iomanufacturing and bioprocessing technologies." Therefore, it is possible that our ability to export our products to customers or distributors may be further restricted in the future. For example, on January 15, 2025, BIS issued an IFR implementing targeted export controls on certain analytical instruments that are highly suitable for generating large, detailed biological datasets based upon the potential to exploit these techniques for asymmetric military advantage. While the Company's products would not be included under the current IFR, future BIS or other government regulations could potentially apply to our products and/or negatively impact our ability to export those products to certain countries and markets.

The Chinese government has introduced retaliatory measures in response to existing or future U.S. export controls, tariffs and other trade restrictions and it is possible that the Chinese or U.S. governments will implement additional retaliatory measures which could impact our business. For example, in December 2024, China announced a new export control regime that includes stringent export controls on exports of germanium and gallium, and in February 2025 implemented additional export controls regulating the export of resources including tungsten, tellurium, bismuth, indium, and molybdenum. Export controls on these and other rare earth materials further increased in retaliation to the increase in U.S. tariffs on products of Chinese origin in April 2025, which has resulted in a pause of the export of these materials from China. It also is possible that additional restrictions will be put in place that could impact our ability to provide our products to customers or distributors in China or source components from China. The continued threats of tariffs, trade restrictions and trade barriers could have a generally disruptive impact on the global economy and, therefore, negatively impact our sales. Given the relatively fluid regulatory environment in China and the United States and uncertainty how the U.S. or foreign governments will act with respect to export controls, tariffs, international trade agreements and policies, there could be additional tax or other regulatory changes in the future. Any such changes could, directly or indirectly, adversely impact our financial results and results of operations.

Our international business could expose us to business, regulatory, political, operational, financial, and economic risks associated with doing business outside of the United States.

Engaging in international business inherently involves a number of difficulties and risks, including:

- required compliance with existing and changing foreign regulatory requirements and laws that are or may be applicable to our business in the future, such as the European Union's General Data Protection Regulation ("GDPR"), the UK General Data Protection Regulation and other data privacy requirements, labor and employment regulations, anti-competition regulations, the U.K. Bribery Act of 2010 and other anti-corruption laws, regulations relating to the use of certain hazardous substances or chemicals in commercial products, and require the collection, reuse, and recycling of waste from products we manufacture;
- required compliance with U.S. laws such as the Foreign Corrupt Practices Act, and other U.S. federal laws and trade and economic sanctions and other regulations established by the Office of Foreign Asset Control;
- export requirements and import or trade restrictions;
- laws and business practices favoring local companies;
- restrictions on both inbound and outbound cross-border investment;
- foreign currency exchange, longer payment cycles and difficulties in enforcing agreements and collecting receivables through certain foreign legal systems;
- changes in social, economic, and political conditions or in laws, regulations and policies governing foreign trade, manufacturing, research and development, and investment both domestically as well as in the other countries and jurisdictions in which we operate and into which we may sell our products including as a result of ongoing geopolitical tensions related to the political uncertainty and military actions associated with the war in Ukraine, resulting sanctions imposed by the U.S. and other countries, and retaliatory actions taken by Russia in response to such sanctions;
- potentially adverse tax consequences, tariffs, customs charges, bureaucratic requirements, and other trade barriers;
- difficulties and costs of staffing and managing foreign operations; and
- difficulties protecting, maintaining, enforcing, or procuring intellectual property rights and defending against intellectual property claims under the law and judicial systems of other countries.

If one or more of these risks occurs, it could require us to dedicate significant resources to remedy such occurrence, and if we are unsuccessful in finding a solution, our financial results will suffer.

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. New laws or changes to existing

laws may 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.

Ethical, legal, privacy, data protection and social concerns or governmental restrictions 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, privacy, data protection 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, and may consider or adopt such regulations or other restrictions. Such concerns or governmental restrictions could limit the use of our products or be costly and burdensome to comply with, and actual or perceived violations of any such restrictions may lead to the imposition of substantial fines and penalties, remediation costs, claims and litigation, regulatory investigations and proceedings, and other liability, any of which could have a material adverse effect on our business, financial condition, and results of operations.

Regulations related to conflict minerals has caused us to incur, and will continue to cause us to incur, additional expenses and could limit the supply and increase the costs of certain materials used in the manufacture of our products.

We are subject to requirements under the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010 that require us to conduct diligence and report on whether or not our products contain conflict minerals. These requirements could adversely affect the sourcing, availability and pricing of the materials used in the manufacture of components used in our products. Furthermore, the complex nature of our products requires components and materials that may be available only from a limited number of sources and, in some cases, from only a single source. We have incurred, and will continue to incur, additional costs to comply with the disclosure requirements, including costs related to conducting diligence procedures to determine the sources of conflict minerals that may be used or necessary to the production of our products and, if applicable, potential changes to components, processes, or sources of supply as a consequence of such verification activities. We may face reputational harm if we determine that certain of our products contain minerals that are not determined to be conflict free or if we are unable to alter our processes or sources of supply to avoid using such materials. In such circumstances, the reputational harm could materially and adversely affect our business, financial condition, or results of operations.

Risks Related to Owning Our Common Stock

The price of our common stock has been, is, and may continue to be, highly volatile, and you may be unable to sell your shares at or above the price you paid to acquire them.

The market price of our common stock is highly volatile, and we expect it to continue to be volatile for the foreseeable future 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 new products, technological innovations or strategic partnerships by us or our competitors;
- announcements by us, our customers, partners, or suppliers relating directly or indirectly to our products, services or technologies;
- 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, capital commitments or achievement of significant milestones;

- 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 or 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;
- stock price and volume fluctuations attributable to inconsistent trading volume levels of our shares;
- reports, guidance and ratings issued by securities or industry analysts;
- operating results below the expectations of securities analysts or investors; and
- general economic and market conditions, which could be impacted by various events including health epidemics or pandemics, interest rate fluctuations, increases in fuel prices, foreign currency fluctuations, changing international trade policies, acts of terrorism, hostilities or the perception that hostilities may be imminent, military conflict and acts of war, including further political uncertainty and military actions associated with the war in Ukraine and the related response, including sanctions or other restrictive actions, by the United States and/or other countries.

If any of the forgoing occurs, it would cause our stock price or trading volume to decline. Stock markets in general and the market for companies in our industry in particular have experienced price and volume fluctuations; these fluctuations have been, and may continue to be, exacerbated by current macroeconomic trends and geopolitical events. These fluctuations often have been unrelated or disproportionate to the operating performance of those companies. These broad market and industry fluctuations, as well as general economic, political and market conditions such as recessions, interest rate changes or international currency fluctuations, may negatively impact the market price of our common stock. You may not realize any return on your investment in us and may lose some or all of your investment. In the past, companies that have experienced volatility in the market price of their stock have been subject to securities class action litigation. We have been a party to this type of litigation in the past and may be the target of this type of litigation again 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.

Sales of substantial amounts of our common stock in the public markets, or the perception that such sales might occur, could reduce the market price that our common stock might otherwise attain and may dilute your voting power and your ownership interest in us.

Sales of a substantial number of shares of our common stock in the public market, or the perception that such sales could occur, could adversely affect the market price of our common stock and may make it more difficult for existing stockholders to sell their common stock at a time and price that they deem appropriate and may dilute their voting power and ownership interest in us.

In addition, if our stockholders sell, or indicate an intent to sell, a large number of shares of our common stock in the public market, it could cause our stock price to fall, particularly if such sales occur over a short period of time (for example, following delivery of shares upon achievement of milestones in our acquisition agreements). We may also issue shares of common stock or securities convertible into our common stock in connection with a financing, acquisition, our equity incentive plans, or otherwise. Any such issuances would result in dilution to our existing stockholders and the market price of our common stock may be adversely affected.

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

Our existing principal stockholders, holders of Notes, executive officers, directors, and their affiliates beneficially own, or following conversion of the Notes could own, a significant number of our outstanding shares of common stock. In addition, such parties may acquire additional control by purchasing stock that we issue in connection with our future fundraising efforts. These parties may now and in the future 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 amended and restated certificate of incorporation and amended and restated bylaws 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 amended and restated bylaws include provisions that:

- authorize our board of directors to issue, without further action by the stockholders, up to 50,000,000 shares of undesignated preferred stock and up to approximately 1,000,000,000 shares of authorized but unissued shares of common stock;
- require that any action to be taken by our stockholders be effected at a duly called annual or special meeting and not by written consent;
- specify that special meetings of our stockholders can be called only by our board of directors, the Chair of the Board, the Chief Executive Officer or the President;
- establish advance notice procedures 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 (until our board of directors is fully declassified beginning with the 2027 annual meeting of stockholders);
- 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 amended and restated bylaws designate a state or federal court located within the State of Delaware as the exclusive forum for certain stockholder litigation matters, and also provide that the federal district courts will be the exclusive forum for resolving any complaint asserting a cause of action arising under the Securities Act, each of which could limit our stockholders' ability to choose the judicial forum for disputes with us or our directors, officers, stockholders, or employees.

Our amended and restated bylaws provide that unless we consent in writing to the selection of an alternative forum, the Court of Chancery of the State of Delaware (or, if the Court of Chancery does not have jurisdiction, another State court in Delaware or the federal district court for the District of Delaware) will, to the fullest extent permitted by law, be the sole and exclusive forum for: (i) any derivative action or proceeding brought on our behalf; (ii) any action asserting a claim of breach of a fiduciary duty owed by any of our current or former directors, stockholders, officers, or other employees to us or our stockholders; (iii) any action arising pursuant to any provision of the Delaware General Corporation Law; (iv) any action to interpret, apply, enforce or determine the validity of our amended and restated certificate of incorporation or our amended and restated bylaws; or (v) any action asserting a claim governed by the internal affairs doctrine, except as to each of (i) through (v) above, for any claim as to which such court determines that there is an indispensable party not subject to the jurisdiction of such court.

Section 22 of the Securities Act creates concurrent jurisdiction for federal and state courts over all such Securities Act actions. Accordingly, both state and federal courts have jurisdiction to entertain such claims. To prevent having to litigate claims in multiple jurisdictions and the threat of inconsistent or contrary rulings by different courts, among other considerations, our amended and restated bylaws also provide that, unless we consent in writing to the selection of an alternative forum, the federal district courts of the United States of America will be the exclusive forum for resolving any complaint asserting a cause of action arising under the

Securities Act including, without limitation and for the avoidance of doubt, any auditor, underwriter, expert, control person or other defendant.

Any person or entity purchasing, holding or otherwise acquiring any interest in any of our securities shall be deemed to have notice of and consented to the foregoing bylaw provisions. Although we believe these exclusive forum provisions benefit us by providing increased consistency in the application of Delaware law and federal securities laws in the types of lawsuits to which each applies, the exclusive forum provisions may limit a stockholder's ability to bring a claim in a judicial forum of its choosing for disputes with us or any of our directors, stockholders, officers or other employees, which may discourage lawsuits with respect to such claims against us and our current and former directors, stockholders, officers or other employees. In addition, a stockholder that is unable to bring a claim in the judicial forum of its choosing may be required to incur additional costs in the pursuit of actions which are subject to the exclusive forum provisions described above. Our stockholders will not be deemed to have waived our compliance with the federal securities laws and the rules and regulations thereunder as a result of our exclusive forum provisions. Further, in the event a court finds either exclusive forum provision contained in our bylaws to be unenforceable or inapplicable in an action, we may incur additional costs associated with resolving such action in other jurisdictions, which could harm our results of operations.

Our large number of authorized but unissued shares of common stock may potentially dilute existing stockholders' stockholdings.

We have a significant number of authorized but unissued shares of common stock. Our board of directors may issue shares of common stock from this authorized but unissued pool from time to time without stockholder approval, resulting in the dilution of our existing stockholders.

We do not intend to pay dividends for the foreseeable future.

We have never declared or paid any dividends on our common stock and do not intend to pay any 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.

Risks Related to Our Notes

We may not have the ability to raise the funds necessary to settle conversions of the Notes in cash or to repurchase the Notes upon a fundamental change, and our future debt may contain limitations on our ability to pay cash upon conversion or repurchase of the Notes.

As of March 31, 2025, we had outstanding approximately $200.0 million aggregate principal amount of our 2029 Notes and $441.0 million aggregate principal amount of our 2030 Notes. The 2029 Notes will mature on August 15, 2029, subject to earlier conversion, redemption or repurchase, including upon a fundamental change. The 2030 Notes will mature on December 15, 2030, subject to earlier conversion, redemption or repurchase, including upon a fundamental change. The 2029 Notes and the 2030 Notes are collectively referred to as the Notes.

Holders of each series of Notes will have the right to require us to repurchase all or a portion of their Notes upon the occurrence of a fundamental change before the maturity date at a repurchase price equal to 100% of the principal amount of the Notes of the applicable series to be repurchased, plus unpaid interest to, but excluding, the applicable maturity date. In addition, upon conversion of the Notes of a series, unless we elect to deliver solely shares of our common stock to settle such conversion (other than paying cash in lieu of delivering any fractional share), we will be required to settle a portion or all of our conversion obligation in cash in respect of the Notes being converted. Moreover, we will be required to repay the Notes of the applicable series in cash at the applicable maturity unless earlier converted, redeemed, or repurchased. However, we may not have enough available cash or be able to obtain financing at the time we are required to make repurchases of Notes surrendered therefor or pay cash with respect to Notes being converted or at their maturity.

In addition, our ability to repurchase the Notes or to pay cash upon conversions of Notes or at the applicable maturity may be limited by law, regulatory authority or agreements governing our future indebtedness. Our failure to repurchase Notes of a series at a time when the repurchase is required by the applicable indenture or to pay cash upon conversions such Notes or at the applicable maturity as required by the applicable indenture would constitute a default under such indenture. A default under either indenture or the occurrence of a fundamental change under either indenture itself could also lead to a default under agreements governing our future indebtedness. Moreover, the occurrence of a fundamental change under either indenture could constitute an event of default under any such agreement. If the payment of the related indebtedness were to be accelerated after any applicable notice or grace periods, we may not have sufficient funds to repay the indebtedness or to pay cash amounts due upon conversion, upon required repurchase or at maturity of the applicable series of Notes.

The Side Letter to our 2029 Notes imposes operating restrictions on us.

On November 21, 2024, in connection with the issuance of the 2029 Notes, the Company and SB Northstar LP ("SBN") entered into a letter agreement (the "Letter Agreement") pursuant to which the Company and SBN agreed that, for so long as SBN and its affiliates hold at least $180 million aggregate principal amount of the 2029 Notes, the Company and its subsidiaries are subject to certain negative covenants that restrict the Company's and its subsidiaries' ability to incur additional indebtedness and create liens, in each case, subject to the exceptions set forth in the Letter Agreement, including exceptions which permit the Company to incur up to $75 million in aggregate principal amount of secured indebtedness pursuant to Credit Facilities (as defined in the Letter Agreement).

Additionally, the Letter Agreement restricts the ability of the Company and its subsidiaries from guaranteeing any indebtedness or incurring certain indebtedness outside of the ordinary course of business unless, in each case, the Company and its subsidiaries concurrently provide a guarantee of the Company's obligations under the 2029 Notes.

These covenants may adversely affect our ability to finance our operations, meet or otherwise address our capital needs, pursue business opportunities or react to market conditions, or otherwise restrict our activities or business plans.

A breach of any of the covenants under the Letter Agreement could result in an event of default under the 2029 Notes. As of March 31, 2025, we were in compliance with all covenants under the Letter Agreement. However, if an event of default occurs, SBN could accelerate our obligations under the 2029 Notes. Any such acceleration could result in an event of default under our other indebtedness, including the 2030 Notes.

If the Notes are converted, it may adversely affect our financial condition and operating results.

Holders of either series of Notes are entitled to convert their respective series of Notes at any time at their option. If one or more holders elect to convert the Notes of the applicable series, unless we elect to satisfy our conversion obligation by delivering solely shares of our common stock (other than paying cash in lieu of delivering any fractional share), we would be required to settle a portion or all of our conversion obligation in cash, which could adversely affect our liquidity. In addition, issuances of shares of common stock upon conversion of our Notes could depress the market price of our common stock and impair our ability to raise capital through the sale of additional equity securities. The existence of the Notes may encourage short selling by market participants because the conversion of the Notes could depress the price of our common stock.

General Risk Factors

Unfavorable global economic or political conditions could adversely affect our business, financial condition or results of operations.

General conditions in the global economy and in the global financial markets could adversely affect our results of operations, and the overall demand for nucleic acid sequencing products may be particularly vulnerable to unfavorable economic conditions. A global financial crisis, inflation or a global or regional political disruption, as well as acts of terrorism, hostilities, military conflict and acts of war, including any further escalation of the conflict in the Middle East and the war in Ukraine, as well as the related responses, could cause extreme volatility in the capital and credit markets. A severe or prolonged economic downturn or political disruption could result in a variety of risks to our business, including weakened demand for our products and our ability to raise additional capital when needed on acceptable terms, if at all. A weak or declining economy or political disruption could also strain our manufacturers or suppliers, possibly resulting in supply disruption, or cause our customers to delay making payments for our product and services. An impairment in value of our tangible or intangible assets could also be recorded as a result of weaker economic conditions. Any of the foregoing could harm our business and we cannot anticipate all of the ways in which the political or economic climate and financial market conditions could adversely impact our business. For more information on impairment considerations, see "*—The commercialization and sales of our current or future products may be unsuccessful or less successful than anticipated. While we plan to continue pursuing new products and expanding into adjacent markets, we have limited experience in managing and selling multiple products and, as a result, may face challenges selling in new markets and fail to successfully carry out these initiatives, which may adversely impact our business, financial condition or results of operation.*" above.

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. Any failure to deliver products to our customers in a safe and timely 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 carriers are unable to deliver our products, the delivery of our products by our customers may be delayed, which could harm our business and financial results. The failure to deliver our products in a safe and timely manner may harm our relationship with our customers, increase our costs and otherwise disrupt our operations.

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

We currently conduct operations in various countries and jurisdictions, and continue to expand to new international jurisdictions as part of our growth strategy and have experienced an increasing concentration of sales in certain regions outside the U.S. We sell directly and through distribution partners throughout Europe, the Asia-Pacific region, Mexico, Brazil, and South Africa and have a significant portion of our sales and customer support personnel in Europe and the Asia-Pacific region. As a result, we or our distribution partners may be subject to additional regulations and increased diversion of management time and efforts. 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 materially and adversely affected and failure to comply with laws and regulations applicable to business operations in foreign jurisdictions may also subject us to significant liabilities and other penalties. International operations entail a variety of other risks, including, without limitation:

- challenges in staffing and managing foreign operations;
- potentially longer sales cycles and more time required to engage and educate customers on the benefits of our platform outside of the United States;
- the potential need for localized software and documentation;
- reduced protection for intellectual property rights in some countries and practical difficulties of enforcing intellectual property and contract rights abroad;
- defending against intellectual property claims in other countries;

- restrictions on both inbound and outbound cross-border investment, including enhanced oversight by the Committee on Foreign Investment in the United States (“CFIUS”) and substantial restrictions on investment from China;
- U.S. and foreign government trade restrictions, including those which may impose restrictions on the importation, exportation, re-exportation, sale, shipment or other transfer of programming, technology, components, and/or services to foreign persons;
- changes in diplomatic and trade relationships, including new tariffs, trade protection measures, import or export licensing requirements, trade embargoes, sanctions, and other trade barriers;
- tariffs imposed by the U.S. on goods from other countries and tariffs imposed by other countries on U.S. goods, which may be imposed on products such as ours, the scope and duration of which, if implemented, remains uncertain;
- deterioration of political relations among, between, and within the U.S., Russia, China, Japan, Korea, Mexico, Canada, the United Kingdom (“U.K.”), and the European Union ("E.U."), which could have a material adverse effect on our sales and operations in these countries;
- changes in social, political, and economic conditions or in laws, regulations and policies governing foreign trade, manufacturing, development, and investment both domestically as well as in the other countries and jurisdictions into which we sell our products;
- difficulties in obtaining export licenses or in overcoming other trade barriers and restrictions resulting in delivery delays;
- fluctuations in currency exchange rates and the related effect on our results of operations;
- increased financial accounting and reporting burdens and complexities;
- potential limits to travel as a result of epidemics or pandemics;
- disruptions to global trade due to disease outbreaks or conflicts;
- potential increases on tariffs or restrictions on trade generally; and
- significant taxes or other burdens of complying with a variety of foreign laws and regulations, including laws and regulations relating to privacy and data protection such as the E.U. General Data Protection Regulation.

In conducting our international operations, we are subject to U.S. laws relating to our international activities, such as the Foreign Corrupt Practices Act of 1977, as well as foreign laws relating to our activities in other countries, such as the United Kingdom Bribery Act of 2010. Additionally, the inclusion of one of our foreign customers on any applicable U.S. Government sanctioned persons list, including but not limited to the U.S. Department of Commerce’s List of Denied Persons and the U.S. Department of Treasury’s List of Specially Designated Nationals and Blocked Persons List, could be material to our earnings. Failure to comply with these laws may subject us to claims or financial and/or other penalties in the United States and/or foreign countries that could materially and adversely impact our operations or financial condition. These risks have become increasingly prevalent as we have expanded our sales into countries that are generally recognized as having a higher risk of corruption.

We face risks related to the current global economic environment, which could delay or prevent our customers from purchasing our products, which could in turn harm our business, financial condition, and results of operations. The state of the global economy continues to be uncertain. The current global economic conditions and uncertain credit markets and concerns regarding the availability of credit pose a risk that could impact customer demand for our products, as well as our ability to manage normal commercial relationships with our customers, suppliers, and creditors, including financial institutions. If the current global economic environment deteriorates, our business could be negatively affected.

Moreover, 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 to 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 currencies could make our products more expensive, impacting our ability to compete or as a result of financial or other instability in such locations which could result in decreased sales of our products. Our costs of materials from international suppliers may also increase 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. Such actions may materially and adversely impact our financial condition and results of operations.

Violations of complex foreign and U.S. laws and regulations could result in fines and penalties, criminal sanctions against us, our officers, or our employees, prohibitions on the conduct of our business and on our ability to offer our products and services in one or more countries, and could also materially affect our brand, our international growth efforts, our ability to attract and retain employees, our business, and our operating results. Even if we implement policies or procedures designed to ensure compliance with these laws and regulations, there can be no assurance that our distribution partners, our employees, contractors, or agents will not violate our policies and subject us to potential claims or penalties.

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 evaluated frequently. We may in the future discover areas of our internal financial and accounting controls and procedures that need improvement. Operating as a public company requires sufficient resources within the accounting and finance functions in order to produce timely financial information, ensure the level of segregation of duties, and maintain adequate internal control over financial reporting customary for a U.S. public company.

Our management is responsible for establishing and maintaining adequate internal control over financial reporting to provide reasonable assurance regarding the reliability of our financial reporting and the preparation of financial statements for external purposes in accordance with U.S. GAAP. Our management does not expect that our internal control over financial reporting will prevent or detect all errors and all fraud. A control system, no matter how well designed and operated, can provide only reasonable, not absolute, assurance that the control system's objectives will be met. Because of the inherent limitations in all control systems, no evaluation of controls can provide absolute assurance that misstatements due to error or fraud will not occur or that all control issues and instances of fraud, if any, within our company will have been detected.

Pursuant to Section 404 of the Sarbanes-Oxley Act, we perform periodic evaluations of our internal control over financial reporting. While we have in the past performed this evaluation and concluded that our internal control over financial reporting was operating effectively, there can be no assurance that in the future material weaknesses or significant deficiencies will not exist or otherwise be discovered. In addition, if we are unable to produce accurate financial statements on a timely basis, investors could lose confidence in the reliability of our financial statements, which could cause the market price of our common stock to decline and make it more difficult for us to finance our operations and growth.

Our business could be negatively impacted by changes in the United States political environment.

Our products depend on the availability of genetic data and its utilization in clinical research by academic and governmental research institutions, commercial testing and service laboratories, genome centers, public health labs, hospitals and clinical research institutes, CROs, pharmaceutical companies, and agricultural companies. As a result, changes in the regulatory environment affecting such institutions could adversely affect our business or results of operations. For example, reduced allocations to government agencies that fund research and development activities, such as the recent announcements regarding NIH funding involving a cap on the institute's indirect funding rates, or targeted cancellations by the U.S. federal government of certain grants or contracts may significantly impact the markets in which we compete.

There is significant ongoing uncertainty with respect to potential legislation, regulation and government policy at the federal level, as well as the state and local levels. Specific legislative and regulatory proposals discussed or implemented that might materially impact us include, but are not limited to, changes to spending priorities and potential reductions in research funding. Uncertainty about U.S. government funding has posed, and may continue to pose, a risk as customers may choose to postpone or reduce spending in response to actual or anticipated restraints on funding. To the extent changes in the political environment have a negative impact on us or on our markets, our business, results of operation and financial condition could be materially and adversely impacted in the future.

Disruption of critical information technology systems or material breaches in the security of our systems could harm our business, customer relations and financial condition.

Information technology ("IT") helps us to operate efficiently, interface with customers, maintain financial accuracy and efficiently and accurately produce our financial statements. IT systems are used extensively in virtually all aspects of our business, including in our products, sales forecast, order fulfillment and billing, customer service, logistics, and management of data from running samples on our products. Our success depends, in part, on the continued and uninterrupted performance of our IT systems. Our IT systems, including those used in our products, may be vulnerable to damage from a variety of sources, including telecommunications or network failures, power loss, natural disasters, human acts, computer viruses, ransomware, computer denial-of-service attacks, unauthorized access to customer or employee data or company trade secrets, and other attempts to harm our systems. Furthermore, there may be a heightened risk of potential cybersecurity incidents and security breaches to which we could be vulnerable by state-sponsored or affiliated actors or others in connection with political uncertainty and conflict in the Middle East and the war in Ukraine. Certain of our systems are not redundant, and our disaster recovery planning is not sufficient for every eventuality. Despite any precautions we may take, such problems could result in, among other consequences, disruption of our operations, which could harm our reputation and financial results. Some of our IT infrastructure still utilizes outdated legacy systems, software and hardware, some of which may be approaching end-of-life or end of support, and that may be particularly susceptible to cybersecurity breaches, errors and operational failures. Upgrading, replacing and enhancing such infrastructure may be expensive and put the continuity of our operations at risk while a failure to do so may make us more susceptible to the risks discussed above.

If we do not allocate and effectively manage the resources necessary to build and sustain the proper IT infrastructure, including those used in our products, we could be subject to transaction errors, processing inefficiencies, loss of customers, business disruptions or loss of or damage to intellectual property. If our data management systems do not effectively collect, store, process and report relevant data for the operation of our business, whether due to equipment malfunction or constraints, software deficiencies or human error, our ability to effectively plan, forecast and execute our business plan and comply with applicable laws and regulations will be impaired, perhaps materially. Any such impairment could materially and adversely affect our reputation, financial condition, results of operations, cash flows and the timeliness with which we report our internal and external operating results.

Security breaches and other disruptions could compromise our information and expose us to liability, which would cause our business and reputation to suffer.

In the ordinary course of our business, we collect and store sensitive data, including intellectual property, our proprietary business information and that of our customers, suppliers and business partners, and personal information of our customers and employees, in our data centers and on our networks. The secure processing, maintenance and transmission of this information is critical to our operations. Despite our security measures, our IT infrastructure may be vulnerable to attacks by hackers, computer viruses, malicious codes, ransomware, unauthorized access attempts, and cyber- or phishing-attacks, or breached or otherwise disrupted due to employee error, malfeasance, faulty password management or other disruptions. Third parties may attempt to fraudulently induce employees or other persons into disclosing usernames, passwords or other sensitive information, which may in turn be used to access our IT systems, commit identity theft or carry out other unauthorized or illegal activities. Any such breach or incident could compromise our systems and networks and the information stored or otherwise processed there could be accessed, publicly disclosed, lost, stolen or otherwise processed in an unauthorized manner. We engage third-party vendors and service providers to store and otherwise process some of our data, including sensitive and personal information. Our vendors and service providers may also be the targets of the risks described above, including cyber-attacks, malicious software, ransomware, phishing schemes, and fraud. Our ability to monitor our vendors and service providers' data security is limited, and, in any event, third parties may be able to circumvent those security measures, resulting in the unauthorized access to, misuse, disclosure, loss or destruction of our data, including sensitive and personal information, and disruption of our or our third-party service providers' systems. We and our third-party service providers may face difficulties in identifying, or promptly responding to, potential security breaches and other instances of unauthorized access to, or disclosure, other processing, or loss or unavailability of, information. Any hacking or other attack on our or our third-party service providers' or vendors' systems, and any unauthorized access to, or disclosure, other processing, or loss or unavailability of, information suffered by us or our third-party service providers or vendors, or the perception that any of these have occurred, could result in legal claims or proceedings, loss of intellectual property, liability under laws that protect the privacy of personal information, negative publicity, disruption of our operations and damage to our reputation, and data integrity issues, which could divert our management's attention from the operation of our business and materially and adversely affect our business, revenues and competitive position. Moreover, we may need to increase our efforts to train our personnel to detect and defend against cyber- or phishing-attacks, which are becoming more sophisticated and frequent, and we may need to implement additional protective measures to reduce the risk of potential security breaches and security incidents, which could cause us to incur significant additional expenses. Retaliatory acts by Russia in response to Western sanctions or otherwise in connection with the war in Ukraine could include cyber-attacks that could disrupt the economy generally or that may either directly or indirectly impact our operations specifically.

In addition, our insurance may be insufficient to cover our losses resulting from cyber-attacks, breaches, or other interruptions, and any incidents may result in loss of, or increased costs of, such insurance. The successful assertion of one or more large claims against us that exceed available insurance coverage, the occurrence of changes in our insurance policies, including premium increases or the imposition of large deductible or co-insurance requirements, or denials of coverage, could have a material adverse effect on our business, including our financial condition, results of operations and reputation.

Our use of artificial intelligence and machine learning technologies may result in reputational harm or liability.

We have incorporated and may continue to incorporate additional artificial intelligence and machine learning, or AIML, technologies into our sequencing platforms, marketing programs, and analysis software, and these solutions and features are advantageous to describing, enhancing, and maximizing the capabilities of our differentiated technologies and to our future growth over time. We rely and expect to rely on AIML technologies such as basecalling, variant calling, epigenetic analysis and tertiary analysis, but there can be no assurance that we will realize the desired or anticipated benefits from AIML or any at all. We may also fail to properly implement or utilize AIML technologies. Our competitors or other third parties may incorporate AIML into their products, platforms, software and services or otherwise within their business more quickly or more successfully than us, which could impair our ability to compete effectively and adversely affect our results of operations. Additionally, our use of AIML technologies may expose us to additional claims, demands and proceedings by private parties and regulatory authorities and subject us to legal liability as well as brand and reputational harm. For example, if output from AIML technologies or that they assist in producing are or are alleged to be deficient, inaccurate, or biased, or for such output, or such technologies or their development or deployment, including the collection, use, or other processing of data used to train or create such AIML technologies, to alleged to infringe upon or to have misappropriated third-party intellectual property rights or to violate applicable laws, regulations, or other actual or asserted legal obligations to which we are or may become subject, then our business, financial condition, and results of operations may be adversely affected. The legal, regulatory, and policy environments around AIML are evolving rapidly, and we may become subject to new and evolving legal and other obligations. These and other developments may require us to make significant changes to our use of AIML, including by limiting or restricting our use of AIML, and may require us to make significant changes to our policies and practices, which may necessitate expenditure of significant time, expense, and other resources. AIML also presents emerging ethical issues, and if our use of AIML becomes controversial, we may experience brand or reputational harm.

We are currently subject to, and may in the future become subject to additional, U.S. federal and state laws and regulations imposing obligations on how we collect, store and process personal information. Our actual or perceived failure to comply with such obligations could harm our business. Ensuring compliance with such laws could also impair our efforts to maintain and expand our future customer base, and thereby decrease our revenue.

In the ordinary course of our business, we currently, and in the future will, collect, store, transfer, use or process sensitive data, including personal information of employees, and intellectual property and proprietary business information owned or controlled by ourselves and other parties. The secure processing, storage, maintenance, and transmission of this critical information are vital to our operations and business strategy. We are, and may increasingly become, subject to various laws and regulations, as well as contractual obligations, relating to data privacy and security in the jurisdictions in which we operate. The regulatory environment related to data privacy and security is increasingly rigorous, with new and constantly changing requirements applicable to our business, and enforcement practices are likely to remain uncertain for the foreseeable future. These laws and regulations may be interpreted and applied differently over time and from jurisdiction to jurisdiction, and it is possible that they will be interpreted and applied in ways that may have a material adverse effect on our business, financial condition, results of operations and prospects.

In the United States, various federal and state regulators, including governmental agencies like the Consumer Financial Protection Bureau and the Federal Trade Commission, have adopted, or are considering adopting, laws and regulations concerning personal information and data security. Certain state laws may be more stringent or broader in scope, or offer greater individual rights, with respect to personal information than federal, international or other state laws, and such laws may differ from each other, all of which may complicate compliance efforts. For example, the California Consumer Privacy Act ("CCPA"), which increases privacy rights for California residents and imposes obligations on companies that process their personal information, came into effect on January 1, 2020. Among other things, the CCPA requires covered companies to provide new disclosures to California consumers and provide such consumers new data protection and privacy rights, including the ability to opt-out of certain sales of personal information. The CCPA provides for civil penalties for violations, as well as a private right of action for certain data breaches that result in the loss of personal information. This private right of action may increase the likelihood of, and risks associated with, data breach litigation. In November 2020, California also passed the California Privacy Rights Act, or ("CPRA"), which significantly expanded the CCPA as of January 1, 2023, including by introducing additional obligations such as data minimization and storage limitations and granting additional rights to consumers, among others. The enactment of the CCPA has prompted similar legislative developments in other states, and numerous other states have proposed, and in certain cases enacted, legislation relating to privacy and data security, many of which are similar to the CCPA and CPRA. Similar laws are being considered by other state legislatures. In addition, laws in all 50 U.S. states require businesses to provide notice to consumers whose personal information has been disclosed as a result of a data breach. State laws are changing rapidly and there has been discussion in the U.S. Congress of a new comprehensive federal data privacy law. These and future laws and regulations may increase our compliance costs and potential liability.

Furthermore, regulations promulgated pursuant to the Health Insurance Portability and Accountability Act of 1996 ("HIPAA"), establish privacy and security standards that limit the use and disclosure of individually identifiable health information (known as "protected health information") and require the implementation of administrative, physical and technological safeguards to protect the privacy of protected health information and ensure the confidentiality, integrity and availability of electronic protected health information. Determining whether protected health information has been handled in compliance with applicable privacy standards and our contractual obligations can require complex factual and statistical analyses and may be subject to changing interpretation. Although we take measures to protect sensitive data from unauthorized access, use or disclosure, our information technology and infrastructure may be vulnerable to attacks by hackers or viruses or disrupted, breached or otherwise compromised due to employee error, malfeasance or other malicious or inadvertent disruptions. Any such breach or disruption could compromise our networks and the information stored there could be accessed, manipulated, publicly disclosed, lost, stolen, made unavailable, or otherwise processed without authorization. Any such disruption, access, breach, unavailability, theft, loss or other unauthorized processing of information, or the perception that any of these has occurred could result in legal claims or proceedings, and liability under federal or state laws that protect the privacy of personal information, such as the HIPAA, the Health Information Technology for Economic and Clinical Health Act, and regulatory penalties. Notice of breaches must be made to affected individuals, the Secretary of the Department of Health and Human Services, and for extensive breaches, notice may need to be made to the media or state attorneys general. Such a notice could harm our reputation and our ability to compete.

While we have in place formal policies and procedures related to the storage, collection, and processing of information, and have conducted data privacy audits, we continue to evaluate our compliance needs, including the need to conduct additional internal and external data privacy audits or adopt additional policies and procedures, to ensure our compliance with all applicable data protection laws and regulations. Additionally, we do not currently have policies and procedures in place for assessing our third-party vendors' compliance with applicable data protection laws and regulations. All of these evolving compliance and operational requirements impose significant costs, such as costs related to organizational changes, implementing additional protection technologies, training employees and engaging consultants, which are likely to increase over time. In addition, such requirements may require us to modify our data processing practices and policies, distract management or divert resources from other initiatives and projects, all of which could have a material adverse effect on our business, financial condition, results of operations and prospects. Any failure or perceived failure by us or our third-party vendors, collaborators, contractors and consultants to comply with any applicable federal, state or similar foreign laws and regulations relating to data privacy and security, could result in damage to our reputation, as well as proceedings or litigation by governmental agencies or other third parties, including class action privacy litigation in certain jurisdictions, which would subject us to significant fines, sanctions, awards, penalties or judgments, all of which could have a material adverse effect on our business, financial condition, results of operations and prospects.

Increased scrutiny of our environmental, social or governance responsibilities may result in additional costs and risks, and may adversely impact our reputation, employee retention, and willingness of customers and suppliers to do business with us.

Investor advocacy groups, institutional investors, investment funds, proxy advisory services, stockholders, and customers are increasingly focused on environmental, social, and governance ("ESG") practices of companies. Additionally, public interest and legislative pressure related to public companies' ESG practices continues to grow.

If our ESG practices fail to meet regulatory requirements or investor or other industry stakeholders' evolving expectations and standards for responsible corporate citizenship in areas including environmental stewardship, support for local communities, board and employee diversity, human capital management, employee health and safety practices, product quality, supply chain management, corporate governance and transparency, and employing ESG strategies in our operations, our brand, reputation and employee retention may be negatively impacted and customers and suppliers may be unwilling to do business with us and potential or current investors may elect to invest in other companies with ESG practices that are perceived to be better than ours. In addition, ESG reporting and disclosure may result in additional costs and require additional resources to monitor, report, and comply with our various ESG practices as well as additional attention from our board of directors and management. If we fail to adopt ESG standards or practices as quickly as stakeholders desire, report on our ESG efforts or practices accurately, or satisfy the expectations of stakeholders, or comply with applicable regulatory requirements, our reputation, business, financial performance, and growth may be adversely impacted.

ITEM 2. UNREGISTERED SALES OF EQUITY SECURITIES AND USE OF PROCEEDS

None.

ITEM 3. DEFAULTS UPON SENIOR SECURITIES

None.

ITEM 4. MINE SAFETY DISCLOSURES

Not applicable.

ITEM 5. OTHER INFORMATION

Securities Trading Plans of Directors and Executive Officers

During our last fiscal quarter, none of our directors or officers, as defined in Rule 16a-1(f), adopted and/or terminated a “Rule 10b5-1 trading arrangement” or a “non-Rule 10b5-1 trading arrangement,” as defined in Regulation S-K Item 408.

ITEM 6. EXHIBITS

Exhibit No.	Description	Incorporated by reference herein		
		Form	Exhibit No.	Filing Date
3.1	Amended and Restated Certificate of Incorporation of Pacific Biosciences of California, Inc.	10-K	3.1	March 23, 2011
3.2	Certificate of Amendment to the Amended and Restated Certificate of Incorporation of Pacific Biosciences of California, Inc. to declassify the Board	8-K	3.1	June 20, 2024
3.3	Certificate of Amendment to the Amended and Restated Certificate of Incorporation of Pacific Biosciences of California, Inc. to limit the liability of officers	8-K	3.2	June 20, 2024
3.4	Third Amended and Restated Bylaws of Pacific Biosciences of California, Inc.	8-K	3.1	November 7, 2022
10.1	Third Amendment to Lease Agreement by and between the Registrant and Menlo Park Portfolio II, LLC, dated March 7, 2025	10-K	10.21	March 17, 2025
10.2+	Letter Relating to Employment Terms by and between the Registrant and James R. Gibson effective March 24, 2025			Filed herewith
10.3+	Outside Director Compensation Policy			Filed herewith
31.1	Certification of Chief Executive Officer pursuant to Exchange Act Rules 13a-14(a) and 15d-14(a), as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002			Filed herewith
31.2	Certification of Chief Financial Officer pursuant to Exchange Act Rules 13a-14(a) and 15d-14(a), as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002			Filed herewith
32.1*	Certification of Chief Executive Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002			Furnished herewith
32.2*	Certification of Chief Financial Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002			Furnished herewith
101.INS	XBRL Instance Document (the instance document does not appear in the Interactive Data File because its XBRL tags are embedded within the Inline XBRL document)			Filed herewith
101.SCH	Inline XBRL Taxonomy Extension Schema Document			Filed herewith
101.CAL	Inline XBRL Taxonomy Extension Calculation Linkbase Document			Filed herewith
101.DEF	Inline XBRL Taxonomy Extension Definition Linkbase Document			Filed herewith
101.LAB	Inline XBRL Taxonomy Extension Labels Linkbase Document			Filed herewith
101.PRE	Inline XBRL Taxonomy Extension Presentation Linkbase Document			Filed herewith
104	Cover Page Interactive File (formatted as inline XBRL and contained in Exhibit 101)			Filed herewith

+ Indicates management contract or compensatory plan.

* The certifications attached as Exhibit 32.1 and 32.2 that accompany this Quarterly Report on Form 10-Q are deemed furnished and not filed with the Securities and Exchange Commission and are not to be incorporated by reference into any filing of Pacific Biosciences of California, Inc. under the Securities Act of 1933, as amended, or the Securities Exchange Act of 1934, as amended, whether made before or after the date of this Quarterly Report on Form 10-Q, irrespective of any general incorporation language contained in such filing.

Signatures

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned thereunto duly authorized.

Pacific Biosciences of California, Inc.

Date: May 12, 2025 By: /s/ Christian O. Henry

Christian O. Henry
President and Chief Executive Officer
(Principal Executive Officer)

Date: May 12, 2025 By: /s/ Jim R. Gibson

Jim R. Gibson
Chief Financial Officer
(Principal Financial Officer)

Date: May 12, 2025 By: /s/ Michele Farmer

Michele Farmer
Vice President and Chief Accounting Officer
(Principal Accounting Officer)

Exhibit 10.2

James R. Gibson
[***]

Dear James,

On behalf of Pacific Biosciences of California, Inc. (the "**Company**"), I am pleased to offer you a position at the Company as Chief Financial Officer ("**CFO**"). You will be reporting to the Chief Executive Officer.

You will receive a salary of $500,000 annually, paid twice monthly according to the Company's payroll schedule, subject to applicable withholdings.

You will be eligible to receive an annual cash bonus with a target gross amount of 55% of your base salary (subject to the achievement of certain performance goals and objectives that may be established by our Board of Directors or a committee thereof (the "**Board**"), as applicable, from time to time). Further details regarding this bonus opportunity will be made available to you. Any such bonus will be paid in accordance with the Company's standard practices, less applicable withholdings, and subject to your continuous service on the date of payment.

Subject to approval of our Board or its delegates, as applicable, as a material inducement to you accepting employment with the Company, the Company will grant you equity awards under the Company's current equity incentive plans (collectively, the "**Plans**") as follows: (i) a nonstatutory stock option (the "**Option**") to purchase a total of 2,000,000 shares of the Company's common stock (each a "**Share**" and, collectively, the "**Shares**"), having an exercise price per Share equal to the fair market value of a Share on the date of grant, and (ii) an award of restricted stock units covering 1,000,000 Shares (the "**RSUs**"), subject to adjustment for any stock splits, reverse splits, combinations, dividends, and the like after the date hereof.

The RSU award will be scheduled to vest as to one fourth (1/4th) of the underlying Shares on each of the one (1), two (2), three (3) and four (4) year anniversaries of the vesting commencement date, provided that you remain in continuous service with the Company through the applicable vesting dates. Any portion of the RSUs that have not vested as of the date of cessation of your continuous service with the Company will terminate as of the date of such cessation.

The Option will be scheduled to vest as to one-fourth (1/4th) of the Shares subject at grant to the Option on the one-year anniversary of the vesting commencement date and as to one forty-eighth (1/48th) of the Shares subject at grant to the Option each month thereafter on the same day of the month as the vesting commencement date, provided that you remain in continuous service with the Company through the applicable vesting date. Any portion of the Option that has not vested as of the date of cessation of your continuous service with the Company will terminate as of the date of such cessation.

The Option and the RSU award will each be effective as of and subject to your commencing employment with the Company. The specific terms of the Option the RSU awards each will be determined when granted by the Board or its delegates, as applicable, and will be subject to the terms and conditions of

the Plan and the applicable RSU and Option award agreements thereunder, which will be provided to you after the grant is made.

You will be eligible to receive 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 will determine in its discretion whether you 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.

You will also be offered certain benefits pursuant to our standard executive Change in Control Severance Agreement, subject to approval by the Compensation Committee of the Board, and our standard director/officer Indemnification Agreement, copies of which are attached.

We will be offering you our standard benefits package and a phone allowance under our Mobile Device Policy of $100 per month. You will receive designated Company holidays, and the terms of our time off with pay policies are outlined in our employee handbook. The Company reserves the right to modify or terminate the benefit plans, policies, allowances, and programs it offers to its employees at any time.

All forms of compensation referred to in this letter agreement are subject to reduction to reflect applicable withholding and payroll taxes and other deductions required by law.

Your employment with the Company is for no specified period of time. Your employment with the Company will be “at will,” meaning that either you or the Company may terminate your employment at any time and for any reason, with or without cause. Any contrary representations that may have been made to you are superseded by this letter agreement. This is the full and complete agreement between you and the Company on this term. Although your job duties, title, compensation, benefits and allowances, as well as the Company’s personnel policies and procedures, may change from time to time in the Company’s sole discretion, the “at will” nature of your employment may only be changed in an express written agreement signed by you and a duly authorized officer of the Company (other than you).

You represent that the performance of your duties in the position described above will not violate the terms of any agreements you may have with others, including your former employer. You also understand that you are not to bring to or use at the Company any confidential information of your prior employers.

Your employment is also conditioned upon your agreement and execution of the attached Pacific Biosciences At Will Employment, Confidential Information, Invention Assignment, and Arbitration Agreement.

Upon your acceptance of this offer (as evidenced by your return of a signed copy of this letter and the attached agreements to the Company), this letter agreement, the Pacific Biosciences At Will Employment, Confidential Information, Invention Assignment, and Arbitration Agreement, the Change in Control Severance Agreement (if signed by you) and the Indemnification Agreement (if signed by you) together constitute the complete agreement between you and the Company, contain all of the terms of

your employment with the Company and supersede any prior agreements, representations or understandings (whether written, oral or implied) between you and the Company.

As required by law, your employment with the Company is contingent upon your providing legal proof of identity and authorization to work within the United States on your first day of employment. In addition, to the extent permitted by applicable law, this offer and your employment with the Company is contingent upon completing a Director and Officer Questionnaire that will be subject to review and approval by the Company, and your submitting to, and passing, a background check. Additionally, any employee authorized to drive a Company vehicle, or who is receiving a vehicle allowance, must provide a valid and current driver's license and consent to a DMV check.

To accept our offer, please sign and date this letter in the space provided below. If you accept our offer, your first day of employment will be March 31, 2025, subject to your satisfaction of the above conditions.

This offer of employment will terminate if it is not accepted, signed, and returned by midnight Pacific Time, March 26, 2025.

The Company is committed to hiring employees like you that have the courage, creativity, and experience to develop new ideas for new markets.

We look forward to having you on our team!

/s/ Christian O. Henry

_____

Pacific Biosciences of California, Inc. By: Christian O. Henry, President, Chief Executive Officer and Interim Chief Financial Officer

I have read and accept this employment offer:

/s/ James R. Gibson 3/24/2025

_____

James R. Gibson

PACIFIC BIOSCIENCES OF CALIFORNIA, INC. OUTSIDE DIRECTOR COMPENSATION POLICY

Effective as of April 22, 2025

Pacific Biosciences of California, Inc. (the "**Company**") believes that providing cash and equity compensation to its members of the Board of Directors (the "**Board**," and members of the Board, the "**Directors**") represents an effective tool to attract, retain and reward Directors who are not Employees of the Company (the "**Outside Directors**"). This Outside Director Compensation Policy (the "**Policy**") is intended to formalize the Company's policy regarding cash compensation and grants of equity awards to its Outside Directors. Unless otherwise defined herein, capitalized terms used in this Policy will have the meaning given such term in the Company's 2020 Equity Incentive Plan (the "**Plan**"). Each Outside Director will be solely responsible for any tax obligations incurred by such Outside Director as a result of the equity and cash payments such Outside Director receives under this Policy.

This Policy will be effective as of April 22, 2025 (such date, the "**Effective Date**").

1. Cash Compensation

Annual Cash Retainer

Each Outside Director will be paid an annual cash retainer of $40,000. There are no per- meeting attendance fees for attending Board meetings. This cash compensation will be paid quarterly in equal installments in advance.

Committee Annual Cash Retainer

As of the Effective Date, each Outside Director who serves as the lead Outside Director or Board chair, or the chair or a member of a committee of the Board, will be eligible to earn additional annual fees (paid quarterly in equal installments in advance) as follows:

Lead Independent Director/Board Chair:	$40,000
Chair of Audit Committee:	$20,000
Member of Audit Committee:	$10,000
Chair of Compensation Committee:	$14,000
Member of Compensation Committee:	$7,000
Chair of Corporate Governance and Nominating Committee:	$10,000
Member of Corporate Governance and Nominating Committee:	$5,000
Chair of Science and Technology Committee:	$10,000

Member of Science and Technology Committee: $5,000

For clarity, each Outside Director who serves as the chair of a committee will not receive both the additional annual fee as the chair of the committee and the additional annual fee as a member of the committee.

2. Equity Compensation

Outside Directors will be eligible to receive all types of Awards (except Incentive Stock Options) under the Plan (or the applicable equity plan in place at the time of grant), including discretionary Awards not covered under this Policy. All grants of Awards to Outside Directors pursuant to Section 2 of this Policy will be automatic and nondiscretionary, except as otherwise provided herein, and will be made in accordance with the following provisions:

(a) No Discretion. No person will have any discretion to select which Outside Directors will be granted any Awards under this Policy or to determine the number of Shares to be covered by such Awards.

(b) Initial Awards. Subject to adjustment pursuant to the applicable terms of the Plan, each individual who first becomes an Outside Director following the Effective Date automatically will be granted an Award of Nonstatutory Stock Options (an "**Initial Option Award**") and an Award of Restricted Stock Units (an "**Initial RSU Award**," and together with the Initial Option Award, the "**Initial Awards**") that have an aggregate Value (as defined below) as of such Initial Awards' grant date equal to $450,000, with the Initial Option Award having a Value equal to fifty percent (50%) of such dollar amount and the Initial RSU Award having a Value equal to fifty percent (50%) of such dollar amount; provided that in no event will the aggregate number of Shares subject to the Initial Awards granted to an Outside Director exceed 127,000 Shares. The Initial Awards will be made on the first date on which such individual first becomes an Outside Director (the first date as an Outside Director, the "**Initial Start Date**"), whether through election by the stockholders of the Company or appointment by the Board to fill a vacancy. If an individual was a member of the Board and also an Employee, becoming an Outside Director due to termination of employment will not entitle the Outside Director to any Initial Awards. Each Initial Option Award will be scheduled to vest as to one-third ($1/3^{rd}$) of the Shares subject to the Initial Option Award on the one (1) year anniversary of the Outside Director's Initial Start Date, and thereafter, in equal installments on a monthly basis for the next twenty-four (24) months on the same day of the month as the Outside Director's Initial Start Date (or if a particular month does not have a corresponding day within that month, then the last day of that month), in each case subject to the Outside Director continuing to be a Director through the applicable vesting date. Each Initial RSU Award will be scheduled to vest as to one-third ($1/3^{rd}$) of the Shares subject to the Initial RSU Award on the one (1), two (2), and three (3) year anniversaries of the Outside Director's Initial Start Date, in each case subject to the Outside Director continuing to be a Director through the applicable vesting date.

(c) Annual Awards. Subject to adjustment pursuant to the applicable terms of the Plan, effective as of the date of each Annual Meeting (as defined below) occurring after the Effective Date (an "**Annual Meeting Date**"), each individual who is an Outside Director as of such date

will be automatically granted an Award of Nonstatutory Stock Options (the "**Annual Award**") with an aggregate Value as of such Annual Award's grant date equal to $200,000; provided that in no event will the aggregate number of Shares subject to the Annual Award granted to an Outside Director as of an Annual Meeting Date exceed 65,000 Shares. Further, the Value of the first Annual Award to be granted to an Outside Director will be prorated based on the number of months of continuous service such Outside Director provided as a member of the Board during the twelve (12) month period immediately preceding such Annual Meeting Date (with any partial month of service provided rounded up to a whole month) to the extent such individual's service as a member of the Board commenced after the date of the immediately preceding Annual Meeting. For purposes of clarity, an individual who is an Outside Director as of an Annual Meeting Date who resigns from such Outside Director role or otherwise ceases to be an Outside Director as of such date, will not be granted an Annual Award on such date, and an individual who first becomes an Outside Director as of an Annual Meeting Date will be eligible to receive Initial Awards pursuant to subsection (b) above but not an Annual Award with respect to such Annual Meeting Date. The Annual Award will be scheduled to vest monthly over one (1) year, on the same day of the month as the Annual Award's date of grant (or if a particular month does not have a corresponding day within that month, then the last day of that month) or if earlier, on the date of the next annual meeting of the Company's stockholders occurring after the Annual Award's date of grant, provided such Outside Director continues to serve as a Director through the applicable vesting dates.

(d) Value. For purposes of this Policy, "**Value**" means, with respect to an Award of Options or Restricted Stock Units, its grant date fair value (determined in accordance with U.S. generally accepted accounting principles), or such other methodology the Board or Compensation Committee may determine prior to the grant of the Award becoming effective, as applicable; provided, however, that any Award of Options or Restricted Stock Units will cover only a whole number of Shares, such that any fractional Share that otherwise would result from a given Value will be rounded down and will not become subject to such Award. For purposes of clarity, in the event that the Share limit set forth in subsection (b) or (c) above is exceeded, then the aggregate Value of the Initial Awards or Annual Awards, as applicable, will be reduced (while the 50/50 mix of Options and Restricted Stock Units for the Initial Award based on Value is maintained) until the aggregate number of Shares subject to such Awards ceases to exceed such Share limit.

(e) Other Terms of Awards. For purposes of this Policy, "**Annual Meeting**" means an annual meeting of the Company's stockholders (after giving effect to any postponements and adjournments with respect thereto). Each Award granted under this Policy will be evidenced by the applicable form of Award agreement as approved by the Board or the Compensation Committee of the Board, as applicable, for use thereunder. The per Share exercise price of an Option granted under this Policy will be one hundred percent (100%) of the Fair Market Value on the Option's date of grant. The maximum term to expiration of an Option granted under this Policy will be ten (10) years, subject to earlier termination as provided in the Plan and the Award agreement governing the terms of the Option. Awards granted pursuant to this Policy are subject to the terms and conditions of the Plan, including for clarity, and without limitation, that the number of Shares to be covered by an Award is subject to the number of Shares available for issuance under the Plan as of the grant date of such Award (and accordingly, will be subject to reduction on a prorated basis to the extent Awards to be granted pursuant to the Policy as of a given date would cover a number of Shares that exceeds the number of Shares available for issuance under the Plan).

3. Additional Provisions

All provisions of the Plan not inconsistent with this Policy will apply to Awards granted to Outside Directors.

4. Adjustments

In the event that any dividend or other distribution (whether in the form of cash, Shares, other securities or other property), recapitalization, stock split, reverse stock split, reorganization, merger, consolidation, split-up, spin-off, combination, reclassification, repurchase, or exchange of Shares or other securities of the Company, or other change in the corporate structure of the Company affecting the Shares occurs (other than any ordinary dividends or other ordinary distributions), the Administrator, in order to prevent diminution or enlargement of the benefits or potential benefits intended to be made available under this Policy, will adjust the number of Shares issuable pursuant to Awards granted under this Policy.

5. Limitations

No Outside Director may be granted, in any Fiscal Year, Awards (the value of which will be based on their grant date fair value determined in accordance with U.S. generally accepted accounting principles) and any other compensation (including without limitation any cash retainers or fees) that, in the aggregate, exceed $500,000, provided that such amount is increased to $1,000,000 in the Fiscal Year of his or her initial service as an Outside Director. Any Awards or other compensation provided to an individual for his or her services as an Employee, or for his or her services as a Consultant other than as an Outside Director, will be excluded for purposes of this Section.

6. SECTION 409A

In no event will cash payments under this Policy be paid after the later of (i) the 15th day of the 3rd month following the end of the Company's fiscal year in which the compensation is earned or expenses are incurred, as applicable, or (ii) the 15th day of the 3rd month following the end of the calendar year in which the compensation is earned or expenses are incurred, as applicable, in compliance with the "short-term deferral" exception under Section 409A of the Internal Revenue Code of 1986, as amended, and the final regulations and guidance thereunder, as may be amended from time to time (together, "**Section 409A**"). It is the intent of this Policy that this Policy and all payments hereunder be exempt from or otherwise comply with the requirements of Section 409A so that none of the compensation to be provided hereunder will be subject to the additional tax imposed under Section 409A, and any ambiguities or ambiguous terms herein will be interpreted to be so exempt or comply. In no event will the Company or any of its Parent or Subsidiaries have any responsibility, obligation, or liability to reimburse, indemnify, or hold harmless an Outside Director for any taxes imposed, or other costs incurred, as a result of Section 409A.

7. Revisions

The Board may amend, alter, suspend or terminate this Policy at any time and for any reason. Further, the Board may provide for cash, equity-based or other compensation to Outside Directors in addition to the compensation provided under this Policy. No amendment, alteration, suspension or termination of this Policy will materially impair the rights of an Outside Director

with respect to compensation that already has been paid or awarded, unless otherwise mutually agreed between the Outside Director and the Company. Termination of this Policy will not affect the Board's or the Compensation Committee's ability to exercise the powers granted to it under the Plan with respect to Awards granted under the Plan pursuant to this Policy prior to the date of such termination.

* * *

Exhibit 31.1

CERTIFICATION OF CHIEF EXECUTIVE OFFICER PURSUANT TO SECURITIES EXCHANGE ACT RULES 13a-14(a) AND 15d-14(a), AS ADOPTED PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

I, Christian Henry, certify that:

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

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

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

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

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

b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

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

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

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

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

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

Date: May 12, 2025

By: /s/ Christian O. Henry

Christian O. Henry
President and Chief Executive Officer
(Principal Executive Officer)

Exhibit 31.2

CERTIFICATION OF CHIEF FINANCIAL OFFICER PURSUANT TO SECURITIES EXCHANGE ACT RULES 13a-14(a) AND 15d-14(a), AS ADOPTED PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

I, Jim Gibson, certify that:

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

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

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

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

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

b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

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

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

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

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

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

Date: May 12, 2025

By: /s/ Jim R. Gibson

Jim R. Gibson
Chief Financial Officer
(Principal Financial Officer)

Exhibit 32.1

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

In connection with the Quarterly Report of Pacific Biosciences of California, Inc. (the "Company") on Form 10-Q for the period ended March 31, 2025, as filed with the Securities and Exchange Commission on the date hereof, I, Christian Henry, Chief Executive Officer of the Company, certify for the purposes of section 1350 of chapter 63 of title 18 of the United States Code, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that, to the best of my knowledge,

(i) the Quarterly Report of the Company on Form 10-Q for the period ended March 31, 2025 (the "Report"), fully complies with the requirements of section 13(a) or 15(d) of the Securities Exchange Act of 1934, and

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

Date: May 12, 2025

By: /s/ Christian O. Henry

Christian O. Henry
President and Chief Executive Officer
(Principal Executive Officer)

Exhibit 32.2

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

In connection with the Quarterly Report of Pacific Biosciences of California, Inc. (the "Company") on Form 10-Q for the period ended March 31, 2025, as filed with the Securities and Exchange Commission on the date hereof, I, Jim Gibson, Chief Financial Officer of the Company, certify for the purposes of section 1350 of chapter 63 of title 18 of the United States Code, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that, to the best of my knowledge,

(i) the Quarterly Report of the Company on Form 10-Q for the period ended March 31, 2025 (the "Report"), fully complies with the requirements of section 13(a) or 15(d) of the Securities Exchange Act of 1934, and

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

Date: May 12, 2025

By: /s/ Jim R. Gibson

Jim R. Gibson
Chief Financial Officer
(Principal Financial Officer)