UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, DC 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 June 30, 2020

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: 001-38957

ADAPTIVE BIOTECHNOLOGIES CORPORATION
(Exact Name of Registrant as Specified in its Charter)

Washington (State or other jurisdiction of incorporation or organization)	**27-0907024** (I.R.S. Employer Identification No.)
1551 Eastlake Avenue East, Suite 200 **Seattle, Washington** (Address of principal executive offices)	**98102** (Zip Code)

Registrant's telephone number, including area code: (206) 659-0067

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 $0.0001 per share	ADPT	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 ☒

As of July 31, 2020, the registrant had 135,793,728 shares of common stock, $0.0001 par value per share, outstanding.

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FORWARD-LOOKING STATEMENTS

This report contains forward-looking statements that are based on management’s beliefs and assumptions and on information currently available to management. All statements contained in this report other than statements of historical fact are forward-looking statements, which include but are not limited to, statements about:

- our ability to leverage and extend our immune medicine platform to discover, develop and commercialize our products and services, including those related to COVID-19, particularly in light of the novelty of immune medicine and our methods;
- our ability to obtain regulatory clearance, authorization and approval for such products and services;
- our collaboration with Genentech, Inc. (“Genentech”) and ability to develop and commercialize cellular therapeutics, including our ability to achieve milestones and realize the intended benefits of the collaboration;
- our ability to develop a map of the interaction between the immune system and disease (“TCR-Antigen Map”) and yield insights from it that are commercially viable;
- our expected reliance on collaborators for development and clinical testing of potential diagnostic and therapeutic product candidates, which may fail at any time due to a number of possible unforeseen events; and
- the potential adverse effect on our business, operations and plans or timelines (including those plans and timelines related to expansion initiatives and clinical development) resulting from the recent COVID-19 pandemic, including potential impacts to our supply chain.

The forward-looking statements in this report also include statements regarding our ability to develop, commercialize and achieve market acceptance of our current and planned products and services, our research and development efforts, and other matters regarding our business strategies, use of capital, results of operations and financial position, and plans and objectives for future operations. In some cases, you can identify forward-looking statements by the words “may,” “will,” “could,” “would,” “should,” “expect,” “intend,” “plan,” “anticipate,” “believe,” “estimate,” “predict,” “project,” “potential,” “continue,” “ongoing” or the negative of these terms or other comparable terminology, although not all forward-looking statements contain these words. These statements involve risks, uncertainties and other factors that may cause actual results, levels of activity, performance or achievements to be materially different from the information expressed or implied by these forward-looking statements. These risks, uncertainties and other factors are described under “Risk Factors,” “Management's Discussion and Analysis of Financial Condition and Results of Operations,” and elsewhere in this report and in other documents we file with the Securities and Exchange Commission (“SEC”) from time to time. We caution you that forward-looking statements are based on a combination of facts and factors currently known by us and our projections of the future, about which we cannot be certain. As a result, the forward-looking statements may not prove to be accurate. The forward-looking statements in this report represent our views as of the date of this report.

We undertake no obligation to update any forward-looking statements for any reason, except as required by law.

Unless otherwise stated or the context otherwise indicates, references to “we,” “us,” “our” and similar references refer to Adaptive Biotechnologies Corporation.

PART I—FINANCIAL INFORMATION

Item 1. Financial Statements (Unaudited)

Condensed Balance Sheets
(in thousands, except share and per share amounts)

	June 30, 2020 (unaudited)	December 31, 2019
Assets		
Current assets		
Cash and cash equivalents	$ 365,440	$ 96,576
Short-term marketable securities (amortized cost of $203,765 and $479,791, respectively)	204,940	480,290
Accounts receivable, net	7,914	12,676
Inventory	10,536	9,069
Prepaid expenses and other current assets	10,691	14,079
Total current assets	599,521	612,690
Long-term assets		
Property and equipment, net	26,833	60,355
Operating lease right-of-use assets	37,619	—
Long-term marketable securities (amortized cost of $56,405 and $105,263, respectively)	57,383	105,435
Restricted cash	2,138	2,138
Intangible assets, net	11,081	11,928
Goodwill	118,972	118,972
Other assets	1,275	784
Total assets	$ 854,822	$ 912,302
Liabilities and shareholders' equity		
Current liabilities		
Accounts payable	$ 3,686	$ 4,453
Accrued liabilities	4,832	4,371
Accrued compensation and benefits	5,976	8,124
Current portion of deferred rent	—	371
Current operating lease liabilities	3,229	—
Current deferred revenue	75,699	60,994
Total current liabilities	93,422	78,313
Long-term liabilities		
Deferred rent liability, less current portion	—	6,918
Operating lease liabilities, less current portion	42,503	—
Financing obligation	—	36,607
Deferred revenue, less current portion	187,462	219,332
Other long-term liabilities	1,496	93
Total liabilities	324,883	341,263
Commitments and contingencies (Note 9)		
Shareholders' equity		
Preferred stock: $0.0001 par value, 10,000,000 shares authorized at June 30, 2020 and December 31, 2019; no shares issued and outstanding at June 30, 2020 and December 31, 2019	—	—
Common stock: $0.0001 par value, 340,000,000 shares authorized at June 30, 2020 and December 31, 2019; 128,233,842 and 125,238,142 shares issued and outstanding at June 30, 2020 and December 31, 2019, respectively	12	12
Additional paid-in capital	958,097	935,834
Accumulated other comprehensive gain	2,153	671
Accumulated deficit	(430,323)	(365,478)
Total shareholders' equity	529,939	571,039
Total liabilities and shareholders' equity	$ 854,822	$ 912,302

The accompanying notes are an integral part of these condensed financial statements.

Adaptive Biotechnologies Corporation

Condensed Statements of Operations
(in thousands, except share and per share amounts)
(unaudited)

	Three Months Ended June 30, 2020	Three Months Ended June 30, 2019	Six Months Ended June 30, 2020	Six Months Ended June 30, 2019
Revenue				
Sequencing revenue	$ 7,985	$ 11,865	$ 17,454	$ 17,948
Development revenue	13,003	10,273	24,444	16,856
Total revenue	20,988	22,138	41,898	34,804
Operating expenses				
Cost of revenue	4,912	5,734	10,255	10,722
Research and development	25,992	16,527	49,927	29,010
Sales and marketing	14,332	8,897	28,339	16,714
General and administrative	12,238	6,662	24,059	13,666
Amortization of intangible assets	423	423	847	842
Total operating expenses	57,897	38,243	113,427	70,954
Loss from operations	(36,909)	(16,105)	(71,529)	(36,150)
Interest and other income, net	1,893	446	4,787	2,105
Income tax benefit	1,481	—	1,804	—
Net loss	(33,535)	(15,659)	(64,938)	(34,045)
Fair value adjustment to Series E-1 convertible preferred stock options	—	(710)	—	(964)
Net loss attributable to common shareholders	$ (33,535)	$ (16,369)	$ (64,938)	$ (35,009)
Net loss per share attributable to common shareholders, basic and diluted	$ (0.26)	$ (1.23)	$ (0.51)	$ (2.68)
Weighted-average shares used in computing net loss per share attributable to common shareholders, basic and diluted	127,383,582	13,279,324	126,720,986	13,074,692

The accompanying notes are an integral part of these condensed financial statements.

Adaptive Biotechnologies Corporation

Condensed Statements of Comprehensive Loss
(in thousands)
(unaudited)

	Three Months Ended June 30,		Six Months Ended June 30,	
	2020	2019	2020	2019
Net loss	$ (33,535)	$ (15,659)	$ (64,938)	$ (34,045)
Change in unrealized (loss) gain on investments	(1,160)	290	1,482	489
Comprehensive loss	$ (34,695)	$ (15,369)	$ (63,456)	$ (33,556)

The accompanying notes are an integral part of these condensed financial statements.

Adaptive Biotechnologies Corporation

Condensed Statements of Convertible Preferred Stock and Shareholders' (Deficit) Equity
(in thousands, except share amounts)
(unaudited)

	Convertible Preferred Stock		Common Stock		Additional Paid-In	Accumulated Other Comprehensive	Accumulated	Total Shareholders' (Deficit)
	Shares	Amount	Shares	Amount	Capital	Gain	Deficit	Equity
Balance at March 31, 2019	93,023,694	$ 561,210	12,930,536	$ 1	$ 40,981	$ 92	$ (314,548)	$ (273,474)
Issuance of common stock for cash upon exercise of stock options	—	—	794,845	—	1,847	—	—	1,847
Issuance of Series E-1 convertible preferred stock for cash upon exercise of Series E-1 convertible preferred stock options at fair value	16,043	11	—	—	—	—	—	—
Change in redemption value for vested Series E-1 convertible preferred stock options	—	710	—	—	—	—	(710)	(710)
Common stock option share-based compensation	—	—	—	—	3,332	—	—	3,332
Other comprehensive income	—	—	—	—	—	290	—	290
Net loss	—	—	—	—	—	—	(15,659)	(15,659)
Balance at June 30, 2019	93,039,737	$ 561,931	13,725,381	$ 1	$ 46,160	$ 382	$ (330,917)	$ (284,374)
Balance at March 31, 2020	—	$ —	126,621,829	$ 12	$ 945,026	$ 3,313	$ (396,788)	$ 551,563
Issuance of common stock for cash upon exercise of stock options	—	—	1,609,763	—	6,698	—	—	6,698
Vesting of restricted stock units	—	—	2,250	—	—	—	—	—
Common stock option and restricted stock unit share-based compensation	—	—	—	—	6,373	—	—	6,373
Other comprehensive loss	—	—	—	—	—	(1,160)	—	(1,160)
Net loss	—	—	—	—	—	—	(33,535)	(33,535)
Balance at June 30, 2020	—	$ —	128,233,842	$ 12	$ 958,097	$ 2,153	$ (430,323)	$ 529,939

The accompanying notes are an integral part of these condensed financial statements.

Condensed Statements of Convertible Preferred Stock and Shareholders’ (Deficit) Equity (Continued)
(in thousands, except share amounts)
(unaudited)

	Convertible Preferred Stock		Common Stock		Additional Paid-In Capital	Accumulated Other Comprehensive (Loss) Gain	Accumulated Deficit	Total Shareholders’ (Deficit) Equity
	Shares	Amount	Shares	Amount				
Balance at December 31, 2018	92,790,094	$ 560,858	12,841,536	$ 1	$ 37,902	$ (107)	$ (295,908)	$ (258,112)
Issuance of common stock for cash upon exercise of stock options	—	—	883,845	—	1,880	—	—	1,880
Issuance of Series E-1 convertible preferred stock for cash upon exercise of Series E-1 convertible preferred stock options at fair value	249,643	109	—	—	—	—	—	—
Change in redemption value for vested Series E-1 convertible preferred stock options	—	964	—	—	—	—	(964)	(964)
Common stock option share-based compensation	—	—	—	—	6,378	—	—	6,378
Other comprehensive income	—	—	—	—	—	489	—	489
Net loss	—	—	—	—	—	—	(34,045)	(34,045)
Balance at June 30, 2019	93,039,737	$ 561,931	13,725,381	$ 1	$ 46,160	$ 382	$ (330,917)	$ (284,374)
Balance at December 31, 2019	—	$ —	125,238,142	$ 12	$ 935,834	$ 671	$ (365,478)	$ 571,039
Adjustments to accumulated deficit for adoption of guidance on accounting for leases	—	—	—	—	—	—	93	93
Issuance of common stock for cash upon exercise of stock options	—	—	2,991,200	—	11,215	—	—	11,215
Vesting of restricted stock units	—	—	4,500	—	—	—	—	—
Common stock option and restricted stock unit share-based compensation	—	—	—	—	11,048	—	—	11,048
Other comprehensive income	—	—	—	—	—	1,482	—	1,482
Net loss	—	—	—	—	—	—	(64,938)	(64,938)
Balance at June 30, 2020	—	$ —	128,233,842	$ 12	$ 958,097	$ 2,153	$ (430,323)	$ 529,939

The accompanying notes are an integral part of these condensed financial statements.

Adaptive Biotechnologies Corporation

Condensed Statements of Cash Flows
(in thousands)
(unaudited)

	Six Months Ended June 30, 2020	Six Months Ended June 30, 2019
Operating activities		
Net loss	$ (64,938)	$ (34,045)
Adjustments to reconcile net loss to net cash (used in) provided by operating activities:		
Depreciation expense	3,129	2,811
Noncash lease expense	1,344	—
Share-based compensation expense	11,048	6,378
Intangible assets amortization	847	842
Investment amortization	(651)	(1,896)
Fair value adjustment of convertible preferred stock warrant	—	2,266
Benefit from income tax	(1,804)	—
Other	49	(78)
Changes in operating assets and liabilities:		
Accounts receivable, net	4,746	(2,445)
Inventory	(1,467)	(166)
Prepaid expenses and other current assets	4,206	(883)
Accounts payable and accrued liabilities	(1,891)	1,314
Deferred rent	—	(480)
Operating lease liabilities	79	—
Deferred revenue	(17,165)	288,714
Other	(215)	1
Net cash (used in) provided by operating activities	(62,683)	262,333
Investing activities		
Purchases of property and equipment	(5,226)	(5,354)
Purchases of marketable securities	(107,747)	(358,671)
Proceeds from sales and maturities of marketable securities	433,224	96,500
Net cash provided by (used in) investing activities	320,251	(267,525)
Financing activities		
Proceeds from exercise of stock options	11,296	1,989
Payment of deferred initial public offering costs	—	(3,360)
Other	—	(9)
Net cash provided by (used in) financing activities	11,296	(1,380)
Net increase (decrease) in cash, cash equivalents and restricted cash	268,864	(6,572)
Cash, cash equivalents and restricted cash at beginning of year	98,714	55,091
Cash, cash equivalents and restricted cash at end of period	$ 367,578	$ 48,519
Noncash investing and financing activities		
Purchases of equipment included in accounts payable and accrued liabilities	$ 1,736	$ 1,490
Deferred offering costs included in accounts payable and accrued liabilities	$ 277	$ 1,433
Derecognition of lease financing arrangements upon adoption of guidance on accounting for leases	$ 36,607	$ —

The accompanying notes are an integral part of these condensed financial statements.

Notes to Unaudited Condensed Financial Statements
(unaudited)

1. Organization and Description of Business

Adaptive Biotechnologies Corporation ("we," "us" or "our") is a commercial-stage company advancing the field of immune-driven medicine by harnessing the inherent biology of the adaptive immune system to transform the diagnosis and treatment of disease. We believe the adaptive immune system is nature's most finely tuned diagnostic and therapeutic for most diseases, but the inability to decode it has prevented the medical community from fully leveraging its capabilities. Our immune medicine platform is the foundation for our expanding suite of products and services. The cornerstone of our immune medicine platform and core immunosequencing product, immunoSEQ, serves as our underlying research and development engine and generates revenue from academic and biopharmaceutical customers. Our first clinical diagnostic product, clonoSEQ, is the first test authorized by the Food and Drug Administration ("FDA") for the detection and monitoring of minimal residual disease ("MRD") in patients with select blood cancers.

We were incorporated in the State of Washington on September 8, 2009 under the name Adaptive TCR Corporation. On December 21, 2011, we changed our name to Adaptive Biotechnologies Corporation. We are headquartered in Seattle, Washington.

Initial Public Offering

Our registration statement on Form S-1 related to our initial public offering was declared effective on June 26, 2019, and our common stock began trading on the Nasdaq Global Select Market on June 27, 2019. On July 1, 2019, we completed our initial public offering in which we issued and sold 17,250,000 shares of common stock, including shares issued upon the exercise in full of the underwriters' over-allotment option, at a public offering price of $20.00 per share.

2. Significant Accounting Policies

Basis of Presentation and Use of Estimates

The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America ("GAAP") requires management to make certain estimates, judgments and assumptions that affect the reported amounts of assets and liabilities and the related disclosures at the date of the financial statements, as well as the reported amounts of revenues and expenses during the periods presented. We base our estimates on historical experience and other relevant assumptions that we believe to be reasonable under the circumstances. Estimates are used in several areas including, but not limited to, estimates of progress to date for certain performance obligations and the transaction price for certain contracts with customers, share-based compensation, including the fair value of stock, the provision for income taxes, including related reserves, and goodwill, among others. These estimates generally involve complex issues and require judgments, involve the analysis of historical results and prediction of future trends, can require extended periods of time to resolve and are subject to change from period to period. Actual results may differ materially from management's estimates.

Unaudited Interim Condensed Financial Statements

In our opinion, the accompanying unaudited condensed financial statements have been prepared in accordance with GAAP for interim financial information. These unaudited condensed financial statements include all adjustments necessary to fairly state the financial position and the results of our operations and cash flows for interim periods in accordance with GAAP. All such adjustments are of a normal, recurring nature. Interim-period results are not necessarily indicative of results of operations or cash flows for a full year or any subsequent interim period.

The accompanying unaudited condensed financial statements should be read in conjunction with our audited financial statements and notes included in our Annual Report on Form 10-K for the year ended December 31, 2019 filed with the SEC on February 26, 2020.

Reclassifications

In the accompanying unaudited condensed statements of cash flows, certain prior year amounts have been reclassified to conform to the current period presentation. Specifically, the gain on equipment disposals line item and other line item were previously separately stated and are now presented together in the other line item. There was no change to net cash provided by operating activities as a result of the reclassification.

Restricted Cash

We are required to maintain certain balances under lease arrangements for our property and facility leases. We had restricted cash of $2.1 million as of June 30, 2020 and December 31, 2019.

Leases

We determine if an arrangement contains a lease at inception. We have operating lease agreements for the laboratory and office facilities that we occupy, as well as server space. Operating lease right-of-use ("ROU") assets and operating lease liabilities are recognized at the date the underlying asset becomes available for our use and are based on the present value of the future minimum lease payments over the lease term. ROU assets also include any initial direct costs incurred and any lease payments made at or before the lease commencement date, less lease incentives received. As our leases generally do not provide an implicit interest rate, the present value of our future minimum lease payments is determined using our incremental borrowing rate. This rate is an estimate of the collateralized borrowing rate we would incur on our future lease payments over a similar term and is based on the information available to us at the lease commencement date, or as of January 1, 2020 for commenced leases that existed as of our adoption of the new lease standard, discussed in more detail below.

Certain of our leases contain options to extend or terminate the lease; lease terms are adjusted for these options only when it is reasonably certain we will exercise these options. Our lease agreements do not contain residual value guarantees or covenants.

We have made a policy election regarding our real estate leases not to separate nonlease components from lease components, to the extent they are fixed. Nonlease components that are not fixed are expensed as incurred as variable lease expense. Our leases for laboratory and office facilities typically include variable nonlease components, such as common-area maintenance costs. We have also elected not to record on the balance sheet a lease that has a lease term of twelve months or less and does not contain a purchase option that we are reasonably certain to exercise.

Lease expense is recognized on a straight-line basis over the terms of the leases. Incentives granted under our facilities leases, including rent holidays, are recognized as adjustments to lease expense on a straight-line basis over the terms of the leases.

Concentrations of Risk

We are subject to a concentration of risk from a limited number of suppliers, or in some cases, single suppliers for some of our laboratory instruments and materials. This risk is managed by targeting a quantity of surplus stock.

Cash, cash equivalents and marketable securities are financial instruments that potentially subject us to concentrations of credit risk. We invest in money market funds, United States ("U.S.") government debt securities, U.S. government agency securities, commercial paper and corporate bonds with high-quality accredited financial institutions.

Significant customers are those which represent more than 10% of our total revenue or accounts receivable, net balances for the periods and as of each balance sheet date presented, respectively. Revenue from these customers reflects their purchase of our products and services and our collaboration efforts with Genentech.

For each significant customer, revenue as a percentage of total revenue for the periods presented and accounts receivable, net as a percentage of total accounts receivable, net as of the periods presented were as follows:

	Revenue				Accounts Receivable, Net	
	Three Months Ended June 30,		Six Months Ended June 30,		June 30,	December 31,
	2020	2019	2020	2019	2020	2019
Customer A	*%	12.7%	*%	*%	24.4%	41.8%
Customer D	*	*	*	*	14.2	*
Genentech, Inc.	63.0	40.0	58.7	43.6	*	*

* less than 10%

Revenue Recognition

We recognize revenue in accordance with Accounting Standards Codification ("ASC") Topic 606 ("ASC 606"), *Revenue from Contracts with Customers*. Under ASC 606, for all revenue-generating contracts, we perform the following steps to determine the amount of revenue to be recognized: (1) identify the contract or contracts; (2) determine whether the promised goods or services are performance obligations, including whether they are distinct in the context of the contract; (3) measure the transaction price, including the constraint on variable consideration; (4) allocate the transaction price to the performance obligations based on estimated selling prices; and (5) recognize revenue when (or as) we satisfy each performance obligation. The following is a summary of the application of the respective model to each of our revenue classifications.

Overview

Our revenue is generated from immunosequencing (“sequencing”) products and services (“sequencing revenue”) and from regulatory or development support services leveraging our immune medicine platform (“development revenue”). When revenue generating contracts have elements of both sequencing revenue and development revenue, we classify revenue based on the nature of the performance obligation and the allocated transaction price.

Sequencing Revenue

Sequencing revenue reflects the amounts generated from providing sequencing services and testing through our clonoSEQ and immunoSEQ products and services to our clinical and research customers, respectively.

For clinical customers, we derive revenues from providing our clonoSEQ test report to ordering physicians, and we bill and receive payments from medical institutions and commercial and government third-party payors. In these transactions, we have identified one performance obligation: the delivery of a clonoSEQ report. As payment from the respective payors may vary based on the various reimbursement rates and patient responsibilities, we consider the transaction price to be variable and record an estimate of the transaction price, subject to the constraint for variable consideration, as revenue at the time of delivery. The estimate of transaction price is based on historical and expected reimbursement rates with the various payors, which are monitored in subsequent periods and adjusted as necessary based on actual collection experience.

For our clonoSEQ coverage under Medicare, we bill an episode of treatment when we deliver the first eligible test results. This billing contemplates all necessary tests required during a patient’s treatment cycle, which is currently estimated at approximately four tests per patient, including the initial sequence identification test. Revenue is recognized at the time the initial billable test result is delivered and is based upon cumulative tests delivered to date. We estimate the number of tests we expect to deliver over a patient’s treatment cycle based on historical testing frequencies for patients by indication. These estimates are subject to change as we develop more information about utilization over time. Any unrecognized revenue from the initial billable test is recorded as deferred revenue and is recognized as we deliver the remaining tests in a patient’s treatment cycle.

For research customers, contracts typically include an amount billed in advance of services (“upfront”) and subsequent billings as sample results are delivered to the customer. Upfront amounts received are recorded as deferred revenue, which we recognize as revenue upon satisfaction of performance obligations. We have identified two typical performance obligations under the terms of our research service contracts: sequencing services and related data analysis. We recognize revenue for both identified performance obligations as sample results are delivered to the customer.

Development Revenue

We derive revenue by providing services through development agreements to biopharmaceutical customers who seek access to our immune medicine platform technologies. We generate revenues from the delivery of professional support activities pertaining to the use of our proprietary immunoSEQ and clonoSEQ services in the development of the respective customers’ initiatives. The transaction price for these contracts may consist of a combination of non-refundable upfront fees, separately priced sequencing fees, progress-based milestones and regulatory milestones. The development agreements may include single or multiple performance obligations, depending on the contract. For certain contracts, we may perform services to support the biopharmaceutical customers’ regulatory submissions as part of their registrational trials. These services include regulatory support pertaining to our technology intended to be utilized as part of the submission, development of analytical plans for our sequencing data, participation on joint research committees and assistance in completing a regulatory submission. Generally, these services are not distinct within the context of the contract, and they are accounted for as a single performance obligation.

When sequencing services are separately priced customer options, we assess if a material right exists and, if not, the customer option to purchase additional sequencing services is not considered part of the contract. Except for any non-refundable upfront fees, the other forms of compensation represent variable consideration. Variable consideration related to progress-based and regulatory milestones is estimated using the most likely amount method where variable consideration is constrained until it is probable that a significant reversal of cumulative revenue recognized will not occur. Progress milestones, such as the first sample result delivered or final patient enrollment in a customer trial, are customer dependent and are included in the transaction price when the respective milestone is probable of occurring. Milestone payments that are not within our customers’ control, such as regulatory approvals, are not considered probable of being achieved until those approvals are received. Determining whether regulatory milestone payments are probable is an area that requires significant judgment. In making this assessment, we evaluate scientific, clinical, regulatory and other risks that must be managed, as well as the level of effort and investment required to achieve the respective milestone.

The primary method used to estimate standalone selling price for performance obligations is the adjusted market assessment approach. Using this approach, we evaluate the market in which we sell our services and estimate the price that a customer in that market would be willing to pay for our services. We recognize revenue using either an input or output measure of progress that faithfully depicts performance on a contract, depending on the contract. The measure used is dependent on the nature of the service to be provided in each contract. Selecting the measure of progress and estimating progress to date requires significant judgment.

Net Loss Per Share Attributable to Common Shareholders

We calculate basic net loss per share attributable to common shareholders by dividing the net loss attributable to common shareholders by the weighted-average number of shares of common stock outstanding for the period. The diluted net loss per share attributable to common shareholders is computed by giving effect to all potential dilutive common stock equivalents outstanding for the period determined using the treasury stock method. For purposes of this calculation, common stock warrants, stock options and restricted stock units are considered common stock equivalents but have been excluded from the calculation of diluted net loss per share attributable to common shareholders, as their effect is anti-dilutive.

Prior to the closing of our initial public offering in July 2019 and the related conversion of our convertible preferred stock into common stock, we calculated our basic and diluted net loss per share attributable to common shareholders in conformity with the two-class method required for companies with participating securities. We considered our convertible preferred stock to be participating securities. In the event a dividend had been declared or paid on common stock, holders of convertible preferred stock would have been entitled to a share of such dividend in proportion to the holders of common stock on an as-if converted basis. Under the two-class method, basic net loss per share attributable to common shareholders is calculated by dividing the net loss attributable to common shareholders by the weighted-average number of shares of common stock outstanding for the period. Net loss attributable to common shareholders is determined by allocating undistributed earnings between common and preferred shareholders. The net loss attributable to common shareholders was not allocated to the convertible preferred stock under the two-class method, as the convertible preferred stock did not have a contractual obligation to share in our losses. The diluted net loss per share attributable to common shareholders was computed by giving effect to all potential dilutive common stock equivalents outstanding for the period determined using the treasury stock method. For purposes of this calculation, convertible preferred stock, convertible preferred stock warrants, common stock warrants and stock options were considered common stock equivalents but were excluded from the calculation of diluted net loss per share attributable to common shareholders, as their effect was anti-dilutive.

Recently Adopted Accounting Pronouncements

In February 2016, the FASB issued Accounting Standards Update (“ASU”) No. 2016-02, *Leases* (Topic 842) (“ASC 842”), intended to increase transparency and comparability among organizations by recognizing lease assets and lease liabilities on the balance sheets and disclosing key information about leasing arrangements. We adopted the guidance effective January 1, 2020 using the optional transition method described in ASU 2018-11, *Leases* (Topic 842) *Targeted Improvements*. Under the optional transition method, we recognized a cumulative-effect adjustment in the period of adoption. Prior period amounts were not adjusted and continue to be reported in accordance with the previous accounting under ASC 840, *Leases* (“ASC 840”).

In adopting the new standard, we utilized certain practical expedients available. These practical expedients include waiving reassessment of (1) whether any expired or existing contracts are or contain leases; (2) lease classification of expired or existing leases; and (3) initial direct costs for existing leases. We also elected to use hindsight in determining the lease term and in assessing impairment of our ROU assets. Furthermore, we have made a policy decision regarding our real estate leases not to separate nonlease components from lease components, to the extent they are fixed. We have also elected not to record on the balance sheet a lease that has a lease term of twelve months or less and does not contain a purchase option that we are reasonably certain to exercise.

The standard had a material impact on our unaudited condensed balance sheets but did not have a material impact on our unaudited condensed statements of operations or unaudited condensed statements of cash flows. The most significant impact was the recognition of $33.0 million and $39.7 million of operating lease ROU assets and liabilities, respectively, and the derecognition of a $36.6 million asset and corresponding liability previously recorded pursuant to build-to-suit lease accounting guidance under ASC 840, which resulted in an increase to retained earnings of $0.1 million. The operating lease ROU assets and liabilities recorded at adoption included the derecognition of $7.3 million of deferred rent recognized as of December 31, 2019, as well as a $0.5 million reclassification of tenant incentive receivables previously recognized in the prepaid expenses and other current assets line item on our balance sheet. Refer to Note 8 of the accompanying notes to our unaudited condensed financial statements for additional information regarding leases.

In June 2016, the FASB issued ASU 2016-13, *Financial Instruments—Credit Losses* (Topic 326): *Measurement of Credit Losses on Financial Instruments*, which amends the impairment model by requiring entities to use a forward-looking approach based on expected losses to estimate credit losses on certain types of financial instruments, including trade receivables. The expected credit losses are recorded through an allowance account that is deducted from the amortized cost basis of the financial asset, and the net carrying value of the financial asset is presented on the balance sheet. The guidance also amends the previous other-than-temporary impairment model for available-for-sale debt securities by requiring the recognition of impairments relating to credit losses through an allowance account, limited to the difference between a security’s amortized cost basis and its fair value. Furthermore, the standard update removes the distinction between whether an impairment is temporary or other-than temporary. We adopted the guidance effective January 1, 2020. Given the short-term nature of our accounts receivables, the adoption as it relates to trade receivables did not have a significant impact on our unaudited condensed financial statements. Furthermore, impairment of available-for-sale debt securities as of the adoption date was determined to be due to factors other than credit loss; therefore, a credit allowance was not recognized.

In August 2018, the FASB issued ASU No. 2018-15, *Intangibles—Goodwill and Other: Internal-Use Software* (Subtopic 350-40) to provide additional guidance on the accounting for costs of implementation activities performed in a cloud computing arrangement. We adopted this guidance effective January 1, 2020 on a prospective basis, and the adoption did not have any impact on our unaudited condensed financial statements.

In December 2019, the FASB issued ASU No. 2019-12, *Income Taxes* (Topic 740): *Simplifying the Accounting for Income Taxes*, which eliminates certain exceptions to the guidance in ASC 740 related to the approach for intraperiod tax allocation, the methodology for calculating income taxes in an interim period and the recognition of deferred tax liabilities for outside basis differences. Among other things, this guidance also clarifies the accounting for transactions that result in a step-up in the tax basis of goodwill. This guidance is effective for fiscal years beginning after December 15, 2020, and interim periods within those fiscal years. Early adoption is permitted, and the guidance is to be applied prospectively, except for certain amendments. We early adopted the guidance on January 1, 2020 and the adoption did not have a material impact on our unaudited condensed financial statements.

3. Revenue

MRD Development Agreements

We have entered into agreements with biopharmaceutical customers to further develop and commercialize clonoSEQ and the biopharmaceutical customers' therapeutics. Under each of the agreements, we received or will receive non-refundable upfront payments and could receive substantial additional payments upon reaching certain progress milestones or achievement of certain regulatory milestones pertaining to the customers' therapeutic and our clonoSEQ test.

Under the contracts, we identify performance obligations, which may include: (1) obligations to provide services supporting the customer's regulatory submission activities as they relate to our clonoSEQ test; and (2) sequencing services related to customer-provided samples for their regulatory submissions. The transaction price allocated to the respective performance obligations is estimated using an adjusted market assessment approach for the regulatory support services and a standalone selling price for the estimated immunosequencing services. At contract inception, we fully constrain any consideration related to the regulatory milestones, as the achievement of such milestones is subject to third-party regulatory approval and the customers' own submission decision-making. We recognize revenue relating to the sequencing services as sequencing revenue over time using an output method based on the proportion of sample results delivered relative to the total amount of sample results expected to be delivered and when expected to be a faithful depiction of progress. We use the same method to recognize the regulatory support services. When an output method based on the proportion of sample results delivered is not expected to be a faithful depiction of progress, we utilize an input method based on estimates of effort completed using a cost-based model.

We recognized $0.1 million and $0.5 million in development revenue related to these contracts during the three months ended June 30, 2020 and 2019, respectively, and $0.5 million and $0.8 million during the six months ended June 30, 2020 and 2019, respectively.

As of June 30, 2020, in future periods we could receive up to an additional $269.0 million in milestone payments if certain regulatory approvals are obtained by our customers' therapeutics in connection with MRD data generated from our clonoSEQ test.

Genentech Collaboration Agreement

In December 2018, we entered into a worldwide collaboration and license agreement ("Genentech Agreement") with Genentech to leverage our capability to develop cellular therapies in oncology. Subsequent to receipt of regulatory approval in January 2019, we received a non-refundable, upfront payment of $300.0 million in February 2019 and may be eligible to receive more than $1.8 billion over time, including payments of up to $75.0 million upon the achievement of specified regulatory milestones, up to $300.0 million upon the achievement of specified development milestones and up to $1,430.0 million upon the achievement of specified commercial milestones. In addition, we are separately able to receive tiered royalties at a rate ranging from the mid-single digits to the mid-teens on aggregate worldwide net sales of products arising from the strategic collaboration, subject to certain reductions, with aggregate minimum floors. Under the agreement, we are pursuing two product development pathways for novel T cell immunotherapies in which Genentech intends to use T cell receptors ("TCRs") screened by our immune medicine platform to engineer and manufacture cellular medicines:

- Shared Products. The shared products will use "off-the-shelf" TCRs identified against cancer antigens shared among patients ("Shared Products").
- Personalized Product. The personalized product will use patient-specific TCRs identified by real-time screening of TCRs against cancer antigens in each patient ("Personalized Product").

Under the terms of the agreement, we granted Genentech exclusive worldwide licenses to develop and commercialize TCR-based cellular therapies in the field of oncology, including licenses to existing shared antigen data packages. Additionally, Genentech has the right to determine which product candidates to further develop for commercialization purposes. We determined that this arrangement meets the criteria set forth in ASC Topic 808, *Collaborative Arrangements* ("ASC 808"), because both parties are active participants in the activity and are exposed to significant risks and rewards depending on the activity's commercial failure or success. Because ASC 808 does not provide guidance on how to account for the activities under a collaborative arrangement, we applied the guidance in ASC 606 to account for the activities related to the Genentech Agreement.

In applying ASC 606, we identified the following performance obligations at the inception of the agreement:

1. License to utilize on an exclusive basis all TCR-specific platform intellectual property to develop and commercialize any licensed products in the field of oncology.
2. License to utilize all data and information within each shared antigen data package and any other know-how disclosed by us to Genentech in oncology.
3. License to utilize all private antigen TCR product data in connection with research and development activities in the field of use.
4. License to existing shared antigen data packages.
5. Research and development services for shared product development, including expansion of shared antigen data packages.
6. Research and development services for private product development.
7. Obligations to participate on various joint research, development and project committees.

We determined that none of the licenses, research and development services or obligations to participate on various committees were distinct within the context of the contract, given such rights and activities were highly interrelated and there was substantial additional research and development to further develop the licenses. We considered factors such as the stage of development of the respective existing antigen data packages, the subsequent development that would be required to both identify and submit a potential target for investigational new drug acceptance under both product pathways and the variability in research and development pathways given Genentech's control of product commercialization. Specifically, under the agreement, Genentech is not required to pursue development or commercialization activities pertaining to both product pathways and may choose to proceed with one or the other, as opposed to both. Accordingly, we determined that all of the identified performance obligations were attributable to one general performance obligation, which is to further the development of our TCR-specific platform, including data packages, and continue to make our TCR identification process available to Genentech to pursue either product pathway.

Separately, we have a responsibility to Genentech to enter into a supply and manufacturing agreement for patient-specific TCRs as it pertains to any Personalized Product therapeutic. We determined this was an option right of Genentech should they pursue commercialization of a Personalized Product therapy. Because of the uncertainty as a result of the early stage of development, the novel approach of our collaboration with Genentech and our rights to future commercial milestones and royalty payments, we determined that this option right was not a material right that should be accounted for at inception. As such, we will account for the supply and manufacturing agreement when entered into between the parties.

We determined the initial transaction price shall be made up of only the $300.0 million upfront, non-refundable payment, as all potential regulatory and development milestone payments were probable of significant revenue reversal given their achievement was highly dependent on factors outside our control. As a result, these payments were fully constrained and were not included in the transaction price as of June 30, 2020. We excluded the commercial milestones and potential royalties from the transaction price, as those items relate predominantly to the license rights granted to Genentech and will be assessed when and if such events occur.

As there are potential substantive developments necessary, which Genentech may be able to direct, we determined that we would apply a proportional performance model to recognize revenue for our performance obligation. We measure proportional performance using an input method based on costs incurred relative to the total estimated costs of research and development efforts to pursue both the Shared Product and Personalized Product pathways. We currently expect to recognize the revenue over a period of approximately seven to eight years from the effective date. This estimate of the research and development period considers pursuit options of development activities supporting both the Shared Product and the Personalized Product, but may be reduced or increased based on the various activities as directed by the joint committees, decisions made by Genentech, regulatory feedback or other factors not currently known.

We recognized revenue of $12.7 million and $8.5 million during the three months ended June 30, 2020 and 2019, respectively, and $23.6 million and $14.8 million during the six months ended June 30, 2020 and 2019, respectively, related to the Genentech Agreement. Costs related to the Genentech Agreement are included in research and development expenses.

4. Fair Value Measurements

The following tables set forth the fair value of financial assets as of June 30, 2020 and December 31, 2019 that were measured at fair value on a recurring basis (in thousands):

	June 30, 2020			
	Level 1	Level 2	Level 3	Total
Financial assets				
Money market funds	$ 355,428	$ —	$ —	$ 355,428
Commercial paper	—	5,994	—	5,994
U.S. government debt and agency securities	—	244,177	—	244,177
Corporate bonds	—	12,152	—	12,152
Total financial assets	$ 355,428	$ 262,323	$ —	$ 617,751

	December 31, 2019			
	Level 1	Level 2	Level 3	Total
Financial assets				
Money market funds	$ 88,683	$ —	$ —	$ 88,683
Commercial paper	—	121,867	—	121,867
U.S. government debt and agency securities	—	377,243	—	377,243
Corporate bonds	—	86,615	—	86,615
Total financial assets	$ 88,683	$ 585,725	$ —	$ 674,408

Level 1 securities include highly liquid money market funds, for which we measure the fair value based on quoted prices in active markets for identical assets or liabilities. Level 2 securities consist of U.S. government debt securities, commercial paper and corporate bonds, and are valued based on recent trades of securities in inactive markets or based on quoted market prices of similar instruments and other significant inputs derived from or corroborated by observable market data.

5. Investments

Available-for-sale investments consisted of the following as of June 30, 2020 and December 31, 2019 (in thousands):

	June 30, 2020			
	Amortized Cost	Unrealized Gain	Unrealized Loss	Estimated Fair Value
Short-term marketable securities				
Commercial paper	$ 5,994	$ —	$ —	$ 5,994
U.S. government debt and agency securities	195,764	1,167	—	196,931
Corporate bonds	2,007	8	—	2,015
Total short-term marketable securities	$ 203,765	$ 1,175	$ —	$ 204,940
Long-term marketable securities				
U.S. government debt and agency securities	$ 46,436	$ 810	$ —	$ 47,246
Corporate bonds	9,969	168	—	10,137
Total long-term marketable securities	$ 56,405	$ 978	$ —	$ 57,383

	December 31, 2019			
	Amortized Cost	Unrealized Gain	Unrealized Loss	Estimated Fair Value
Short-term marketable securities				
Commercial paper	$ 121,866	$ —	$ —	$ 121,866
U.S. government debt and agency securities	285,963	394	(1)	286,356
Corporate bonds	71,962	109	(3)	72,068
Total short-term marketable securities	$ 479,791	$ 503	$ (4)	$ 480,290
Long-term marketable securities				
U.S. government debt and agency securities	$ 90,750	$ 146	$ (9)	$ 90,887
Corporate bonds	14,513	35	—	14,548
Total long-term marketable securities	$ 105,263	$ 181	$ (9)	$ 105,435

All the commercial paper, U.S. government debt and agency securities and corporate bonds designated as short-term marketable securities have an effective maturity date that is equal to or less than one year from the respective balance sheet date. Those that are designated as long-term marketable securities have an effective maturity date that is more than one year from the respective balance sheet date.

Accrued interest receivable is excluded from the amortized cost and estimated fair value of our marketable securities. Accrued interest receivables of $1.5 million and $2.2 million were presented separately within the prepaid expenses and other current assets line item on our unaudited condensed balance sheet as of June 30, 2020 and our balance sheet as of December 31, 2019, respectively. We have made an accounting policy election to not measure an allowance for credit losses for accrued interest receivables.

We periodically review our available-for-sale securities to assess for credit impairment. Some of the factors considered in assessing impairment include the extent to which the fair value is less than the amortized cost basis, adverse conditions related to the security, an industry or geographic area, changes to security ratings or sector credit ratings and other relevant market data. As of June 30, 2020, none of our investments were in an unrealized loss position and, based on our assessment, none exhibited credit impairment. As such, a credit allowance was not recognized. Furthermore, as of June 30, 2020, we did not intend, nor were we more likely than not to be required, to sell our available-for-sale investments before the recovery of their amortized cost basis.

6. Goodwill and Intangible Assets

There have been no changes in the carrying amount of goodwill since its recognition in 2015.

Intangible assets subject to amortization as of June 30, 2020 and December 31, 2019 consisted of the following (in thousands):

	June 30, 2020		
	Gross Carrying Amount	Accumulated Amortization	Net Carrying Amount
Acquired developed technology	$ 20,000	$ (9,132)	$ 10,868
Purchased intellectual property	325	(112)	213
Balance at June 30, 2020	$ 20,325	$ (9,244)	$ 11,081

	December 31, 2019		
	Gross Carrying Amount	Accumulated Amortization	Net Carrying Amount
Acquired developed technology	$ 20,000	$ (8,301)	$ 11,699
Purchased intellectual property	325	(96)	229
Balance at December 31, 2019	$ 20,325	$ (8,397)	$ 11,928

The developed technology was acquired in connection with our acquisition of Sequenta, Inc. (“Sequenta”) in 2015. The remaining balance of the acquired technology and the purchased intellectual property is expected to be amortized over the next 6.5 years.

As of June 30, 2020, expected future amortization expense for intangible assets was as follows (in thousands):

2020 (excluding the six months ended June 30, 2020)	$ 856
2021	1,699
2022	1,699
2023	1,699
2024	1,703
Thereafter	3,425
Total future amortization expense	$ 11,081

7. Deferred Revenue

Deferred revenue by revenue classification as of June 30, 2020 and December 31, 2019 was as follows (in thousands):

	June 30, 2020	December 31, 2019
Current deferred revenue		
Sequencing	$ 16,530	$ 12,482
Development	59,169	48,512
Total current deferred revenue	75,699	60,994
Non-current deferred revenue		
Sequencing	890	1,459
Development	186,572	217,873
Total non-current deferred revenue	187,462	219,332
Total current and non-current deferred revenue	$ 263,161	$ 280,326

Genentech deferred revenue represents $56.8 million and $184.5 million of the current and non-current development deferred revenue balances, respectively, at June 30, 2020 and $48.1 million and $216.8 million of the current and non-current development deferred revenue balances, respectively, at December 31, 2019. In general, we expect that the current amounts will be recognized as revenue within 12 months and the non-current amounts will be recognized as revenue over a period of approximately six to seven years. This period of time represents an estimate of the research and development period to develop cellular therapies in oncology, which may be reduced or increased based on the various development activities.

Changes in deferred revenue during the six months ended June 30, 2020 were as follows (in thousands):

Deferred revenue balance at December 31, 2019	$ 280,326
Additions to deferred revenue during the period	12,838
Revenue recognized during the period	(30,003)
Deferred revenue balance at June 30, 2020	$ 263,161

As of June 30, 2020, $27.3 million was recognized as revenue that was included in the deferred revenue balance at December 31, 2019.

8. Leases

We have operating lease agreements for the laboratory and office facilities that we occupy in Seattle, Washington and South San Francisco, California, as well as server space. Our leases now include an amendment to our previous lease in South San Francisco, California to rent 19,867 additional square feet, which commenced during the three months ended June 30, 2020 and provides for a $0.6 million tenant improvement allowance. As of June 30, 2020, we were not party to any finance leases. Our leases have remaining terms of 1.8 years to 12.1 years, and include options to extend certain of the leases up to 10.0 years and terminate certain of the leases after 3.0 years. We adjust lease terms for these options only when it is reasonably certain we will exercise these options. As of June 30, 2020, it was reasonably certain that we would exercise our option to terminate one of our leases after 3.0 years.

Other information related to our operating leases as of June 30, 2020 was as follows:

Weighted-average remaining lease term (in years)	10.13
Weighted-average discount rate	4.6%

The following table reconciles our undiscounted operating lease cash flows to our operating lease liabilities as of June 30, 2020 (in thousands):

2020 (excluding the six months ended June 30, 2020)	$ 2,952
2021	6,593
2022	6,596
2023	5,939
2024	5,956
Thereafter	30,979
Total undiscounted lease payments	59,015
Less:	
Imputed interest rate	(12,131)
Tenant improvement receivables	(1,152)
Total operating lease liabilities	$ 45,732
Less: current portion	(3,229)
Operating lease liabilities, less current portion	$ 42,503

Operating lease expense was $1.2 million and $2.3 million for the three and six months ended June 30, 2020, respectively. Variable lease expense for operating leases was $0.6 million and $1.1 million for the three and six months ended June 30, 2020, respectively. Rent expense recognized under ASC 840, inclusive of operating and maintenance costs, was $1.1 million and $2.3 million for the three and six months ended June 30, 2019, respectively.

Cash paid for amounts included in the measurement of lease liabilities for the six months ended June 30, 2020 was $0.9 million, net of $1.3 million of cash received for tenant improvement allowances.

Leases Not Yet Commenced

In August 2019, we entered into an agreement to rent 100,000 square feet in a to-be-constructed building in Seattle, Washington. In connection with the lease, we entered into a $2.1 million letter of credit with one of our existing financial institutions. Due to our significant involvement during the construction process of the leased building, we qualified as the deemed owner of the building under build-to-suit lease accounting guidance that proceeded ASC 842. The resulting asset and long-term financing obligation recorded on our balance sheet for the cost of the building was derecognized upon adoption of ASC 842. As of June 30, 2020, we have incurred $1.5 million in certain tenant improvement costs relating to the to-be-constructed building, which are presented within the other long-term liabilities line item on our unaudited condensed balance sheet as of June 30, 2020. These costs will be reimbursed by the landlord prior to delivering the building to us. The related receivable of $1.5 million is presented within the prepaid expenses and other current assets line item on our unaudited condensed balance sheet as of June 30, 2020.

This lease, and another of our leases that has not yet commenced pursuant to guidance in ASC 842, will be assessed for classification and a lease liability and corresponding ROU asset will be recorded upon lease commencement, which may be delayed due to the impact of the COVID-19 pandemic. Future non-cancellable undiscounted lease payments associated with signed leases that have not yet commenced total $91.2 million, payable over lease terms ranging from 5.2 years to 12.7 years.

9. Commitments and Contingencies

Legal Proceedings

We are subject to claims and assessments from time to time in the ordinary course of business. We will accrue a liability for such matters when it is probable that a liability has been incurred and the amount can be reasonably estimated. When only a range of possible loss can be established, the most probable amount in the range is accrued. If no amount within this range is a better estimate than any other amount within the range, the minimum amount in the range is accrued. We are not currently party to any material legal proceedings.

Indemnification Agreements

In the ordinary course of business, we may provide indemnification of varying scope and terms to vendors, lessors, customers and other parties with respect to certain matters including, but not limited to, losses arising out of breach of our agreements with them or from intellectual property infringement claims made by third parties. In addition, we have entered into indemnification agreements with members of our board of directors and certain of our executive officers that will require us to indemnify them against certain liabilities that may arise by reason of their status or service as directors or officers. The maximum potential amount of future payments that we could be required to make under these indemnification agreements is, in many cases, unlimited. We have not incurred any material costs as a result of such indemnifications and are not currently aware of any indemnification claims.

10. Shareholders' Equity

Convertible Preferred Stock

Immediately prior to the completion of our initial public offering on July 1, 2019, 93,039,737 shares of convertible preferred stock then outstanding converted into an equivalent number of shares of common stock. As of June 30, 2020, no shares of convertible preferred stock were outstanding.

Preferred Stock

We are authorized to issue 10,000,000 shares of preferred stock, par value $0.0001 per share. As of June 30, 2020, no shares of preferred stock were outstanding.

Common Stock

We are authorized to issue 340,000,000 shares of common stock. Our common stock has a par value of $0.0001, no preferences or privileges and is not redeemable. Holders of our common stock are entitled to one vote for each share of common stock held. The holders of record of outstanding shares of common stock shall be entitled to receive, when, as and if declared, out of funds legally available, such cash and other dividends as may be declared from time to time. As of June 30, 2020, we had 128,233,842 shares of common stock outstanding.

We have reserved shares of common stock for the following as of June 30, 2020:

Shares issuable upon the exercise of outstanding common stock options and the vesting of outstanding common restricted stock units granted	16,201,815
Shares available for future grant under the 2019 Equity Incentive Plan	19,111,800
Shares available for future grant under the Employee Stock Purchase Plan	2,804,298
Shares to be issued upon exercise of a common stock warrant	56,875
Total shares of common stock reserved for future issuance	38,174,788

Our 2019 Equity Incentive Plan ("2019 Plan") provides for annual increases in the number of shares that may be issued under the 2019 Plan on January 1, 2020 and on each subsequent January 1, thereafter, by a number of shares equal to the lesser of (a) 5% of the number of shares of common stock issued and outstanding on the immediately preceding December 31, or (b) an amount determined by our board of directors.

Furthermore, our Employee Stock Purchase Plan ("ESPP") provides for annual increases in the number of shares available for issuance under our ESPP on January 1, 2020 and on each January 1, thereafter, by a number of shares equal to the smallest of (a) 1% of the number of shares of common stock issued and outstanding on the immediately preceding December 31, or (b) an amount determined by our board of directors.

On January 1, 2020, our 2019 Plan and ESPP reserves automatically increased by 6,261,907 shares and 1,252,381 shares, respectively.

Common Stock Warrant

In 2014, we issued a warrant to purchase 56,875 shares of Series C convertible preferred stock at an exercise price of $2.64. The warrant is exercisable for a period of seven years from the date of issuance. Immediately prior to and in connection with the completion of our initial public offering on July 1, 2019, this convertible preferred stock warrant, which was previously recorded as a financial liability, was converted to a warrant to purchase the same number of shares of common stock. Upon conversion, the financial liability was reclassified to the additional paid-in capital line item on our unaudited condensed balance sheet. The warrant to purchase 56,875 shares of common stock remains outstanding as of June 30, 2020.

11. Equity Incentive Plans

Sequenta 2008 Stock Plan, as amended

In connection with our acquisition of Sequenta in January 2015, we assumed Sequenta's Equity Incentive Plan ("2008 Plan"), including all outstanding options and shares available for future issuance under the 2008 Plan, which, prior to the completion of our initial public offering, were all exercisable for Series E-1 convertible preferred stock. Upon completion of our initial public offering in July 2019, the outstanding options are now exercisable for common stock. While no shares are available for future issuance under this plan, the 2008 Plan continues to govern outstanding equity awards granted thereunder.

Adaptive 2009 Equity Incentive Plan

We adopted an equity incentive plan in 2009 ("2009 Plan") that provided for the issuance of incentive and nonqualified common stock options and other share-based awards for employees, directors and consultants. Under the 2009 Plan, the option exercise price for incentive and nonqualified stock options were not to be less than the fair market value of our common stock at the date of grant. Options granted under this plan expire no later than ten years from the grant date, and vesting was established at the time of grant. Pursuant to the terms of the 2019 Plan, any shares subject to outstanding options originally granted under the 2009 Plan that terminate, expire or lapse for any reason without the delivery of shares to the holder thereof shall become available for issuance pursuant to awards granted under the 2019 Plan. While no shares are available for future issuance under the 2009 Plan, it continues to govern outstanding equity awards granted thereunder.

2019 Equity Incentive Plan

The 2019 Plan was approved by our shareholders on June 13, 2019 and, pursuant to the resolutions adopted by our board of directors, became effective immediately prior to the closing of our initial public offering. The 2019 Plan provides for the issuance of awards in the form of options and other share-based awards for employees, directors and consultants. Under the 2019 Plan, the option exercise price per share shall not be less than the fair market value of a share of stock on the grant date of the option, as defined by the 2019 Plan, unless explicitly qualified under the provisions of Section 409A or Section 424(a) of the Internal Revenue Code of 1986. Additionally, unless otherwise specified, options granted under this plan expire no later than ten years from the grant date, and vesting is established at the time of grant. Except for certain option grants made to non-employee directors, stock options granted under the 2019 Plan generally vest over a four-year period, subject to continuous service through each applicable vesting date. As of June 30, 2020, we have authorized 22,029,208 shares of common stock for issuance under the 2019 Plan.

Changes in shares available for grant during the six months ended June 30, 2020 were as follows:

	Shares Available for Grant
Shares available for grant at December 31, 2019	15,396,254
2019 Plan reserve increase on January 1, 2020	6,261,907
Options and restricted stock units granted	(2,644,446)
Options and restricted stock units forfeited, cancelled or expired	98,085
Shares available for grant at June 30, 2020	19,111,800

Stock option activity under the 2008 Plan, 2009 Plan and 2019 Plan during the six months ended June 30, 2020 was as follows:

	Shares Subject to Outstanding Options	Weighted-Average Exercise Price per Share	Aggregate Intrinsic Value (in thousands)
Options outstanding at December 31, 2019	16,646,654	$ 6.14	$ 398,379
Options granted	2,594,446	29.95	
Options forfeited or cancelled	(88,085)	15.77	
Options expired	(10,000)	0.16	
Options exercised	(2,991,200)	3.75	
Options outstanding at June 30, 2020	16,151,815	$ 10.36	$ 614,116
Options vested and exercisable at June 30, 2020	8,962,192	$ 5.49	$ 384,400

The weighted-average remaining contractual life for options outstanding at June 30, 2020 was 7.2 years. The weighted-average remaining contractual life for vested and exercisable options outstanding at June 30, 2020 was 5.9 years.

Of the $11.3 million proceeds from exercise of stock options included on our unaudited condensed statements of cash flows for the six months ended June 30, 2020, $0.5 million related to options exercised prior to but settled during the six months ended June 30, 2020. As of June 30, 2020, $0.4 million was included in the prepaid expenses and other current assets line item on our unaudited condensed balance sheet for unsettled cash proceeds related to options exercised.

As of December 31, 2019, 4,500 shares of restricted stock units (“RSUs”), with a weighted-average grant date fair value per share of $41.63, were nonvested and outstanding. We granted 50,000 shares of RSUs, with a weighted-average grant date fair value per share of $28.10, during the six months ended June 30, 2020. During the six months ended June 30, 2020, 4,500 shares of RSUs, with a weighted-average grant date fair value per share of $41.63, vested. As of June 30, 2020, 50,000 shares of RSUs, with a weighted-average grant date fair value per share of $28.10, remained nonvested and outstanding.

Fair Value of Options and Grant Date Fair Value of Restricted Stock Units

The estimated fair value of options granted during the six months ended June 30, 2020 and 2019 was estimated using the Black-Scholes option-pricing model with the following assumptions:

	Six Months Ended June 30,	
	2020	2019
Grant date fair value	$17.68 - $41.90	$7.80 - $13.29
Expected term (in years)	5.27 - 6.08	5.27 - 6.08
Risk-free interest rate	0.4% - 1.7%	1.9% - 2.5%
Expected volatility	70.5% - 72.9%	64.3% - 72.9%
Expected dividend yield	—	—

The weighted-average volatility used in the fair value calculations of options granted during the six months ended June 30, 2020 and 2019 was 71.0% and 67.9%, respectively.

The determination of the fair value of stock options on the date of grant using a Black-Scholes option-pricing model is affected by the estimated fair value of our common stock, as well as assumptions regarding a number of variables that are complex, subjective and generally require significant judgment to determine. The valuation assumptions were determined as follows:

Fair value of common stock—Prior to the closing of our initial public offering, the grant date fair value of our common stock was determined with input from management using valuation methodologies which utilized certain assumptions, including probability weighting of events, volatility, time to liquidation, a risk-free interest rate and an assumption for a discount for lack of marketability (Level 3 inputs). In determining the fair value of our common stock, the methodologies used to estimate the enterprise value were performed using methodologies, approaches and assumptions consistent with the American Institute of Certified Public Accountants Accounting and Valuation Guide, *Valuation of Privately-Held-Company Equity Securities Issued as Compensation*. For valuations of grants made after the closing of our initial public offering, the fair value of each share of common stock is based on the closing price of our common stock on the date of grant, or other relevant determination date, as reported on The Nasdaq Global Select Market.

Expected term—The expected term of options granted to employees and non-employee directors is determined using the “simplified” method, as illustrated in ASC Topic 718, *Compensation—Stock Compensation*, as we do not have sufficient exercise history to determine a better estimate of expected term. Under this approach, the expected term is based on the midpoint between the vesting date and the end of the contractual term of the option.

Risk-free interest rate—We utilize a risk-free interest rate in the option valuation model based on U.S. Treasury zero-coupon issues with remaining terms similar to the expected terms of the options.

Expected volatility—As we do not have sufficient trading history for our common stock, the expected volatility is based on the historical volatility of our publicly traded industry peers utilizing a period of time consistent with our estimate of the expected term.

Expected dividend yield—We do not anticipate paying any cash dividends in the foreseeable future and, therefore, use an expected dividend yield of zero in the option valuation model.

The grant date fair value of RSUs granted after the closing of our initial public offering is based on the closing price of our common stock on the date of grant, or other relevant determination date, as reported on The Nasdaq Global Select Market.

Share-based compensation expense of $6.4 million and $3.3 million was recognized during the three months ended June 30, 2020 and 2019, respectively, and $11.0 million and $6.4 million was recognized during the six months ended June 30, 2020 and 2019, respectively.

The compensation costs related to stock options and RSUs for the three and six months ended June 30, 2020 and 2019, respectively, are included on our statements of operations as follows (in thousands):

	Three Months Ended June 30,		Six Months Ended June 30,	
	2020	2019	2020	2019
Cost of revenue	$ 209	$ 113	$ 381	$ 243
Research and development	2,152	978	3,696	1,895
Sales and marketing	1,667	943	2,824	1,849
General and administration	2,345	1,298	4,147	2,391
Total share-based compensation expense	$ 6,373	$ 3,332	$ 11,048	$ 6,378

At June 30, 2020, unrecognized share-based compensation expense related to unvested stock options was $70.7 million, which is expected to be recognized over a remaining weighted-average period of 3.2 years. Additionally, at June 30, 2020, unrecognized share-based compensation expense related to unvested RSUs was $1.3 million, which is expected to be recognized over a remaining weighted-average period of 3.8 years.

12. Income Taxes

The effective tax benefit was $1.5 million and $1.8 million for the three and six months ended June 30, 2020, respectively. There was no effective tax benefit for the year ended December 31, 2019.

We calculate our tax provision by applying a forecasted annual effective tax rate (“AETR”) against year-to-date pre-tax loss, and taking into account certain discrete items, primarily related to the exercise activity of stock options, in the quarter in which they occur. We recorded a pre-tax benefit for the three and six months ended June 30, 2020 because the discrete benefit from option exercises was greater than the year-to-date AETR tax expense. We expect to recognize tax expense on a full year basis, inclusive of discrete items.

We file income tax returns in the U.S. federal jurisdiction and various U.S. state jurisdictions. Significant disputes may arise with authorities involving issues of the timing and amount of deductions, the use of tax credits and allocations of income and expenses among various tax jurisdictions because of differing interpretations of tax laws, regulations and the relevant facts. We believe our accrual for income tax liabilities is appropriate based on past experience, interpretations of tax law and judgments about potential actions by tax authorities; however, due to the complexity of the provision for income taxes, the ultimate resolution of any tax matters may result in payments greater or less than amounts accrued. Because of net operating loss carryforwards, substantially all tax years since inception remain open to federal and state tax examination.

On March 27, 2020, the U.S. enacted the Coronavirus Aid, Relief and Economic Security Act (“CARES Act”) to provide emergency economic stimulus in light of the effects of COVID-19. While the CARES Act provides extensive tax changes, some of the more significant provisions include removing certain limitations on utilization of net operating losses, increasing the loss carryback period for certain losses to five years and increasing the ability to deduct interest expense, as well as amending certain provisions of the previously enacted Tax Cuts and Jobs Act of 2017 (“TCJA”). We are still evaluating the CARES Act, but do not anticipate a significant impact to our income tax provision.

13. Net Loss Per Share Attributable to Common Shareholders

Net Loss Per Share

The following table sets forth the computation of the basic and diluted net loss per share attributable to common shareholders for the three and six months ended June 30, 2020 and 2019, respectively (in thousands, except share and per share amounts):

	Three Months Ended June 30,		Six Months Ended June 30,	
	2020	2019	2020	2019
Net loss	$ (33,535)	$ (15,659)	$ (64,938)	$ (34,045)
Fair value adjustments to redemption value for Series E-1 convertible preferred stock options	—	(710)	—	(964)
Net loss attributable to common shareholders, basic and diluted	$ (33,535)	$ (16,369)	$ (64,938)	$ (35,009)
Weighted-average shares used in computing net loss per share	127,383,582	13,279,324	126,720,986	13,074,692
Net loss per share attributable to common shareholders, basic and diluted	$ (0.26)	$ (1.23)	$ (0.51)	$ (2.68)

Since we were in a loss position for all periods presented, basic net loss per share attributable to common shareholders is the same as diluted net loss per share attributable to common shareholders, as the inclusion of all potential shares of common stock outstanding would have been anti-dilutive. The following weighted-average common stock equivalents were excluded from the calculation of diluted net loss per share attributable to common shareholders for the three and six months ended June 30, 2020 and 2019, respectively, as they had an anti-dilutive effect:

	Three Months Ended June 30,		Six Months Ended June 30,	
	2020	2019	2020	2019
Convertible preferred stock (on as if converted basis)	—	93,028,311	—	92,973,101
Stock options issued and outstanding	16,919,027	17,618,180	16,871,297	16,908,503
Unvested restricted stock units	48,621	—	26,120	—
Common stock warrants	56,875	55,032	56,875	55,032
Convertible preferred stock warrants	—	56,875	—	56,875
Total	17,024,523	110,758,398	16,954,292	109,993,511

14. Subsequent Event

In July 2020, we completed an underwritten public offering of our common stock in which we issued and sold 7,200,000 shares of common stock, including shares issued upon the exercise in full of the underwriters’ over-allotment option, at a public offering price of $40.00 per share. We received approximately $271.7 million in net proceeds, after deducting underwriting discounts and net offering expenses payable by us.

The unaudited condensed financial statements as of June 30, 2020, including share and per share amounts, do not give effect to this offering, as it closed subsequent to June 30, 2020.

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 our unaudited condensed financial statements and related notes and the other financial information appearing elsewhere in this report, as well as the other financial information we file with the SEC from time to time. Some of the information contained in this discussion and analysis or set forth elsewhere in this report, including information with respect to our plans and strategy for our business and related financing, includes forward-looking statements that involve risks and uncertainties relating to our future plans, objectives, expectations, intentions and financial performance and the assumptions that underlie these statements.

As a result of many factors, including those factors set forth in the "Risk Factors" section of this report, our actual results could differ materially from the results described in or implied by the forward-looking statements contained in the following discussion and analysis.

Overview

We are advancing the field of immune-driven medicine by harnessing the inherent biology of the adaptive immune system to transform the diagnosis and treatment of disease. Our immune medicine platform applies our proprietary technologies to read the diverse genetic code of a patient's immune system and understand precisely how it detects and treats disease in that patient. We capture these insights in our dynamic clinical immunomics database, which is underpinned by computational biology and machine learning, and use them to develop and commercialize clinical products and services that we are tailoring to each individual patient. We have two commercial products and services and a robust pipeline of clinical products and services that we are designing to diagnose, monitor and enable the treatment of diseases such as cancer, autoimmune conditions and infectious diseases.

Our immune medicine platform is the foundation for our expanding suite of products and services. The cornerstone of our platform and core immunosequencing product, immunoSEQ, serves as our underlying research and development engine and generates revenue from academic and biopharmaceutical customers. Our first clinical diagnostic product, clonoSEQ, is the first test authorized by the FDA for the detection and monitoring of MRD in patients with MM and ALL and is being validated for patients with other blood cancers. Leveraging our collaboration with Microsoft Corporation ("Microsoft") to create the TCR-Antigen Map, we are also developing a diagnostic product, immunoSEQ Dx, that may enable early detection of many diseases from a single blood test. We are currently running our first clinical validation study in acute Lyme disease following proof of concept in 2019. Our therapeutic product candidates, being developed under the Genentech Agreement, leverage our platform to identify specific immune cells to develop into cellular therapies in oncology.

Since our inception, we have devoted a majority of our resources to research and development activities to develop our immune medicine platform, which enables the delivery of our products and services for life sciences research, clinical diagnostics and drug discovery customers.

For our life science research customers, we provide two categories of products and services using immunoSEQ, our core sequencing and immunomics tracking technology. First, we provide immunosequencing services, the revenue from which we record as sequencing revenue. Second, we provide certain research customers professional support, for which we may receive payments upon those customers achieving specified milestones. We record these support activities as development revenue.

For our clinical diagnostics customers, we sell our clonoSEQ diagnostic tests, which include our immunosequencing services and are thus recorded as sequencing revenue. In the future, we intend to sell other diagnostics products and services, which we also expect to record as sequencing revenue.

For our current drug discovery collaborator, Genentech, we screen, identify and characterize TCRs in support of our collaboration. We record revenue from this collaboration as development revenue.

Historically, we have sold immunoSEQ as a fee-for-service offering to academic centers and biopharmaceutical customers and further deepened those relationships over time by supporting their development initiatives. These research offerings have comprised the majority of our revenue to date, although our business is pursuing broader opportunities. As we continue to expand the use of our clonoSEQ diagnostic tests, develop and commercialize immunoSEQ Dx and develop and commercialize therapeutic product candidates with our drug discovery collaborator, we expect our mix of revenue to shift to clinical products and services, which we believe will become our largest sources of revenue.

We are actively pursuing opportunities to deepen our relationships with current customers and initiate relationships with new customers. We have an experienced, specialty salesforce that is targeting department heads, laboratory directors, principal investigators, core facility directors, clinicians, payors and research scientists and pathologists at leading academic institutions, biopharmaceutical companies, research institutions and contract research organizations. As MRD assessment becomes standard practice for patient management across a range of blood cancers, we believe it will be essential for clinicians and patients to have access to a highly accurate, sensitive and standardized MRD assessment tool. We are focused on establishing and maintaining collaborative relationships with payors, developing health economic evidence and building billing and patient access infrastructure to expand reimbursement coverage for our clinical diagnostics. We continue to seek expanded coverage of our clonoSEQ diagnostic test and, in 2019, we successfully expanded coverage through contractual agreements or positive medical policies with Medicare and several of the largest national private health insurers in the United States.

We generated revenue of $21.0 million and $41.9 million for the three and six months ended June 30, 2020, respectively, and $22.1 million and $34.8 million for the three and six months ended June 30, 2019, respectively. Our net losses were $33.5 million and $64.9 million for the three and six months ended June 30, 2020, respectively, and $15.7 million and $34.0 million for the three and six months ended June 30, 2019, respectively. We have funded our operations to date principally from the sale of convertible preferred stock and common stock and, to a lesser extent, sequencing and development revenue. As of June 30, 2020 and December 31, 2019, we had cash, cash equivalents and marketable securities of $627.8 million and $682.3 million, respectively.

COVID-19 Developments

In March 2020, we extended our collaboration with Microsoft to decode the adaptive immune response and pursue a diagnostic signal for COVID-19. In the second quarter of 2020, we confirmed a clinical signal for the detection of the virus that causes COVID-19, called SARS-CoV-2. We are actively exploring immunoSEQ Dx's ability to detect the TCR response to the virus and believe that quantifying virus-specific T cells may enable new diagnostic applications and inform our ability to assess immunity and response to vaccines or other drugs in development. As part of this effort, we initiated the ImmuneCODE program to collect, analyze and publicize data about the TCRs specific to SARS-CoV-2. We continue to collect samples from our own prospective study, ImmuneRACE, and participating institutions around the world that are interested in contributing. We are making all of the sequencing data publicly available in our ImmuneCODE database, which was launched in June 2020.

Additionally, in August 2020, we announced the launch of immunoSEQ® T-MAP™ COVID, a proprietary research product and data analysis service to measure the T cell immune response to vaccines being developed by third parties and track the persistence of that response over time.

For a discussion of the risks presented by the COVID-19 pandemic, including risks to our results of operations and inherent in development of new products and services related to the pandemic, see the “Risk Factors” section of this report and the risk factors set forth in our prospectus supplement dated July 15, 2020 and filed with the SEC on July 16, 2020 in connection with our follow-on offering of common stock (together with the accompanying base prospectus, the “Prospectus”).

Follow-On Offering

In July 2020, we completed an underwritten public offering of our common stock in which we issued and sold 7,200,000 shares of common stock at a public offering price of $40.00 per share. We received approximately $271.7 million in net proceeds, after deducting underwriting discounts and net offering expenses payable by us.

Components of Results of Operations

Revenue

We derive our revenue from two sources: (1) sequencing revenue and (2) development revenue.

Sequencing revenue. Sequencing revenue reflects the amounts generated from providing testing services through clonoSEQ to clinical and research customers and from providing sequencing services through immunoSEQ to research customers.

For our clinical customers, we derive revenue from providing our clonoSEQ test report to ordering physicians. We bill medical institutions and commercial and government payors based on tests delivered to ordering physicians. Amounts paid for clonoSEQ diagnostic tests by medical institutions and commercial and government payors vary based on respective reimbursement rates and patient responsibilities, which may differ from our targeted list price. To date, the majority of our clonoSEQ diagnostic test revenue has been received from medical institutions. We recognize clinical revenue by evaluating customer payment history, contracted reimbursement rates, if applicable, and other adjustments to estimate the amount of revenue that is collectible. Until 2019, we did not have reimbursement available to us through any government payors for clonoSEQ.

For our clonoSEQ coverage under Medicare, we bill an episode of treatment when we deliver the first eligible test results. This billing contemplates all necessary tests required during a patient's treatment cycle, which is currently estimated at approximately four tests per patient, including the initial sequence identification test. Revenue is recognized at the time the initial billable test result is delivered and is based upon cumulative tests delivered to date. Any unrecognized revenue from the initial billable test is recorded as deferred revenue and recognized as we deliver the remaining tests in a patient's treatment cycle.

For our research customers, which include biopharmaceutical customers and academic institutions, delivery of the sequencing results may include some level of professional support and analysis. Terms with biopharmaceutical customers generally include non-refundable upfront payments, which we record as deferred revenue. For all customers, we recognize revenue as we deliver sequencing results. From time to time, we offer discounts in order to gain rights and access to certain datasets. Revenue is recognized net of these discounts and costs associated with these services are reflected in cost of revenue.

Development revenue. Development revenue primarily represents regulatory or development support services, other than sequencing revenue, that we provide to biopharmaceutical customers who seek access to our platform to support their therapeutic development activities. Additionally, we generate development revenue from the achievement of regulatory milestones. We enter into collaboration and similar agreements with these customers. When these agreements include sequencing activities, we separately classify those activities as sequencing revenue. These agreements may also include substantial non-refundable upfront payments, which we recognize as development revenue over time as we perform the respective services.

We expect revenue to increase over the long term, particularly as the mix of revenue migrates to clinical diagnostics and drug discovery. The pace by which this mix migrates will be determined by the level of customer adoption and frequency of use of our products and services. Our revenue may fluctuate from period to period due to the uncertain nature of delivery of our products and services, the achievement of milestones by us or our customers, timing of expenses incurred, changes in estimates of total anticipated costs related to our Genentech Agreement and other events not within our control, such as the delivery of customer samples or customer decisions to no longer pursue their development initiatives.

Due to the ongoing uncertainties related to the COVID-19 pandemic, we may experience variability in revenue in the near term as restrictions in our customers' abilities to procure samples for their research initiatives evolve and as clinical testing is impacted. For more information, see the section of this report captioned "Risk Factors—The COVID-19 pandemic could adversely impact portions of our business that rely on research and development activities or clinical trials and delay or disrupt our pipeline, which may adversely impact revenue."

Cost of Revenue

Cost of revenue includes the cost of materials, personnel-related expenses (comprised of salaries, benefits and share-based compensation), shipping and handling, equipment and allocated facility costs associated with processing samples and professional support for our sequencing revenue. Allocated facility costs include depreciation of laboratory equipment, allocated facility occupancy and information technology costs. Costs associated with processing samples are recorded as expense, regardless of the timing of revenue recognition. As such, cost of revenue and related volume does not always trend in the same direction as revenue recognition and related volume. Additionally, costs to support our Genentech Agreement are a component of our research and development activities.

We expect cost of revenue to increase in absolute dollars as we grow our sequencing volume but the cost per sample to decrease over the long term due to the efficiencies we may gain as sequencing volume increases from improved utilization of our laboratory capacity, automation and other value engineering initiatives. If our sample volume throughput is reduced as a result of the COVID-19 pandemic or otherwise, cost of revenue as a percentage of total revenue may be adversely impacted due to fixed overhead costs.

Research and Development Expenses

Research and development expenses consist of laboratory materials costs, personnel-related expenses, equipment costs, allocated facility costs, information technology expenses and contract service expenses. Research and development activities support further development and refinement of existing assays and products, discovery of new technologies and investments in our immune medicine platform. We also include in research and development expenses the costs associated with software development activities to support laboratory scaling and workflow, as well as development of applications to support future commercial opportunities. We are currently conducting research and development activities for several products and services, and we typically use our laboratory materials, personnel, facilities, information technology and other development resources across multiple development programs. Additionally, certain of these research and development activities benefit more than one of our product opportunities. We do not track research and development expenses by specific product candidates.

A component of our research and development activities is supporting clinical and analytical validations to obtain regulatory approval for future clinical products and services. Additionally, the costs to support our Genentech Agreement are a component of our research and development activities. Some of these activities have generated and may in the future generate development revenue.

We expect our research and development expenses to continue to increase in absolute dollars as we innovate and expand the application of our platform. However, we expect research and development expenses to decrease as a percentage of revenue in the long term, although the percentage may fluctuate from period to period due to the timing and extent of our development and commercialization efforts. While the pace and priorities of our research and development initiatives may continue to be impacted by the COVID-19 pandemic, we expect to continue to increase expenses in both the near and long-term to support our ongoing initiatives, which now include our initiatives with respect to COVID-19.

Sales and Marketing Expenses

Sales and marketing expenses consist primarily of personnel-related expenses for commercial sales, account management, marketing, reimbursement, medical education and business development personnel that support commercialization of our platform products. In addition, these expenses include external costs such as advertising expenses, customer education and promotional expenses, market analysis expenses, conference fees, travel expenses and allocated facility costs.

We expect our sales and marketing expenses to increase in absolute dollars as we expand our commercial sales, marketing and business development teams and increase marketing activities to drive awareness and adoption of our products and services. However, we expect sales and marketing expenses to decrease as a percentage of revenue in the long term, subject to fluctuations from period to period due to the timing and magnitude of these expenses.

General and Administrative Expenses

General and administrative expenses consist primarily of personnel-related expenses, including share-based compensation, salaries and benefits for our personnel in executive, legal, finance and accounting, human resources and other administrative functions, including third-party billing services. In addition, these expenses include insurance costs, external legal costs, accounting and tax service expenses, consulting fees and allocated facility costs.

We expect our general and administrative expenses to continue to increase in absolute dollars as we increase headcount and incur costs associated with operating as a public company, including expenses related to legal, accounting, regulatory matters, director and officer insurance premiums and investor relations. Though expected to increase in absolute dollars, we expect these expenses to decrease as a percentage of revenue in the long term as revenue increases.

Statements of Operations Data and Other Financial and Operating Data

	Three Months Ended June 30, 2020	Three Months Ended June 30, 2019	Six Months Ended June 30, 2020	Six Months Ended June 30, 2019
	(in thousands, except share and per share amounts)			
Statements of Operations Data:				
Revenue				
Sequencing revenue	$ 7,985	$ 11,865	$ 17,454	$ 17,948
Development revenue	13,003	10,273	24,444	16,856
Total revenue	20,988	22,138	41,898	34,804
Operating expenses				
Cost of revenue	4,912	5,734	10,255	10,722
Research and development	25,992	16,527	49,927	29,010
Sales and marketing	14,332	8,897	28,339	16,714
General and administrative	12,238	6,662	24,059	13,666
Amortization of intangible assets	423	423	847	842
Total operating expenses	57,897	38,243	113,427	70,954
Loss from operations	(36,909)	(16,105)	(71,529)	(36,150)
Interest and other income, net	1,893	446	4,787	2,105
Income tax benefit	1,481	—	1,804	—
Net loss	(33,535)	(15,659)	(64,938)	(34,045)
Fair value adjustment to Series E-1 convertible preferred stock options	—	(710)	—	(964)
Net loss attributable to common shareholders	$ (33,535)	$ (16,369)	$ (64,938)	$ (35,009)
Net loss per share attributable to common shareholders, basic and diluted	$ (0.26)	$ (1.23)	$ (0.51)	$ (2.68)
Weighted-average shares used in computing net loss per share attributable to common shareholders, basic and diluted	127,383,582	13,279,324	126,720,986	13,074,692
Other Financial and Operating Data:				
Adjusted EBITDA (1)	$ (28,538)	$ (10,903)	$ (56,505)	$ (26,119)

(1) Adjusted EBITDA is a non-GAAP financial measure that we define as net loss adjusted for interest and other income, net, income tax benefit (expense), depreciation and amortization and share-based compensation expenses. Please refer to “Adjusted EBITDA” below for a reconciliation between Adjusted EBITDA and net loss, the most directly comparable GAAP financial measure, and a discussion about the limitations of Adjusted EBITDA.

Comparison of the Three Months Ended June 30, 2020 and 2019

Revenue

(in thousands, except percentages)	Three Months Ended June 30, 2020	Three Months Ended June 30, 2019	Change $	Change %	Percent of Revenue 2020	Percent of Revenue 2019
Revenue						
Sequencing revenue	$ 7,985	$ 11,865	$ (3,880)	(33)%	38%	54%
Development revenue	13,003	10,273	2,730	27	62	46
Total revenue	$ 20,988	$ 22,138	$ (1,150)	(5)%	100%	100%

Total revenue was $21.0 million for the three months ended June 30, 2020, compared to $22.1 million for the three months ended June 30, 2019, representing a decrease of approximately $1.2 million, or 5%.

Sequencing revenue decreased to $8.0 million for the three months ended June 30, 2020, representing a decrease of $3.9 million, or 33%. The decrease in sequencing revenue was attributable to a $4.8 million decrease in revenue generated from biopharmaceutical and academic customers, inclusive of a decrease in revenue recognized from cancelled customer projects of $0.6 million, which was partially offset by a $0.9 million increase in revenue generated from clinical customers.

Research sequencing volume decreased by 54% to 4,185 sequences delivered in the three months ended June 30, 2020 from 9,084 sequences delivered in the three months ended June 30, 2019. The reduction in research sequencing volume was primarily attributable to trial enrollment delays and project deferrals from our biopharmaceutical and academic customers. Clinical sequencing volume increased by 31% to 3,136 clinical tests delivered in the three months ended June 30, 2020 from 2,388 clinical tests delivered in the three months ended June 30, 2019.

Development revenue increased to $13.0 million for the three months ended June 30, 2020, representing an increase of $2.7 million, or 27%. The increase was primarily attributable to a $4.2 million increase in revenue generated from the Genentech Agreement, partially offset by a $1.1 million decrease in revenue generated from translational agreements and a $0.4 million decrease in revenue generated from MRD development agreements.

Cost of Revenue

(in thousands, except percentages)	Three Months Ended June 30, 2020	Three Months Ended June 30, 2019	Change $	Change %	Percent of Revenue 2020	Percent of Revenue 2019
Cost of revenue	$ 4,912	$ 5,734	$ (822)	(14)%	23%	26%

Cost of revenue was $4.9 million for the three months ended June 30, 2020, compared to $5.7 million for the three months ended June 30, 2019, representing a decrease of $0.8 million, or 14%. The decrease in cost of revenue was primarily attributable to decreased cost of materials of $0.7 million resulting from decreased sample processing volumes, as well as a $0.7 million decrease related to higher usage of our production lab to process research and development samples versus cost of revenue samples, which was partially offset by a $0.3 million period-over-period increase in cost of revenue related to increases in labor and overhead costs.

Research and Development

(in thousands, except percentages)	Three Months Ended June 30, 2020	Three Months Ended June 30, 2019	Change $	Change %	Percent of Revenue 2020	Percent of Revenue 2019
Research and development	$ 25,992	$ 16,527	$ 9,465	57%	124%	75%

The following table presents disaggregated research and development expenses by cost classification for the periods presented:

(in thousands)	Three Months Ended June 30, 2020	Three Months Ended June 30, 2019	Change
Research and development materials and allocated production laboratory expenses	$ 10,841	$ 7,589	$ 3,252
Personnel expenses	10,907	6,765	4,142
Allocable facilities and information technology expenses	1,249	783	466
Software and cloud services expenses	765	462	303
Depreciation and other expenses	2,230	928	1,302
Total	$ 25,992	$ 16,527	$ 9,465

Research and development expenses were $26.0 million for the three months ended June 30, 2020, compared to $16.5 million for the three months ended June 30, 2019, representing an increase of $9.5 million, or approximately 57%. The increase was primarily attributable to a $4.1 million increase in personnel costs, a $3.3 million increase in cost of materials and allocated production laboratory expenses primarily related to supporting investments in immunoSEQ Dx and TCR-Antigen Map development and drug discovery efforts, and a $1.3 million increase in depreciation and other expenses.

Sales and Marketing

(in thousands, except percentages)	Three Months Ended June 30,		Change		Percent of Revenue	
	2020	2019	$	%	2020	2019
Sales and marketing	$ 14,332	$ 8,897	$ 5,435	61%	68%	40%

Sales and marketing expenses were $14.3 million for the three months ended June 30, 2020, compared to $8.9 million for the three months ended June 30, 2019, representing an increase of $5.4 million, or 61%. The increase was primarily attributable to $3.4 million in additional personnel costs and $2.3 million in additional marketing fees, partially offset by a $0.6 million decrease in travel, entertainment and customer event related expenses.

General and Administrative

(in thousands, except percentages)	Three Months Ended June 30,		Change		Percent of Revenue	
	2020	2019	$	%	2020	2019
General and administrative	$ 12,238	$ 6,662	$ 5,576	84%	58%	30%

General and administrative expenses were $12.2 million for the three months ended June 30, 2020, compared to $6.7 million for the three months ended June 30, 2019, representing an increase of approximately $5.6 million, or 84%. The increase was primarily attributable to $2.5 million in additional personnel costs, a $1.4 million increase in legal, accounting and tax fees, a $1.0 million increase in insurance costs, and a $0.5 million increase in business taxes.

Interest and Other Income, Net

(in thousands, except percentages)	Three Months Ended June 30,		Change	
	2020	2019	$	%
Interest and other income, net	$ 1,893	$ 446	$ 1,447	324%

Interest and other income, net was $1.9 million for the three months ended June 30, 2020, compared to $0.4 million for the three months ended June 30, 2019, representing an increase of approximately $1.4 million, or approximately 324%. The increase was primarily attributable to a $2.2 million impact of revaluing a convertible preferred stock warrant liability in the three months ended June 30, 2019, which was partially offset by a $1.0 million decrease in net interest income and investment amortization resulting from reductions in interest rates and related yields.

Comparison of the Six Months Ended June 30, 2020 and 2019

Revenue

(in thousands, except percentages)	Six Months Ended June 30,		Change		Percent of Revenue	
	2020	2019	$	%	2020	2019
Revenue						
Sequencing revenue	$ 17,454	$ 17,948	$ (494)	(3)%	42%	52%
Development revenue	24,444	16,856	7,588	45	58	48
Total revenue	$ 41,898	$ 34,804	$ 7,094	20%	100%	100%

Total revenue was $41.9 million for the six months ended June 30, 2020, compared to $34.8 million for the six months ended June 30, 2019, representing an increase of $7.1 million, or 20%.

Sequencing revenue decreased to $17.5 million for the six months ended June 30, 2020, representing a decrease of $0.5 million, or 3%. The decrease in sequencing revenue was attributable to a $3.4 million decrease in revenue generated from biopharmaceutical and academic customers, inclusive of a decrease in revenue recognized from cancelled customer projects of $0.4 million, which was largely offset by a $2.9 million increase in revenue generated from clinical customers.

Research sequencing volume decreased by 27% to 10,215 sequences delivered in the six months ended June 30, 2020 from 13,975 sequences delivered in the six months ended June 30, 2019. The decrease in research sequencing volume reflects factors similar to those discussed above for the three months ended June 30, 2020. Clinical sequencing volume increased by 51% to 6,654 clinical tests delivered in the six months ended June 30, 2020 from 4,399 clinical tests delivered in the six months ended June 30, 2019.

Development revenue increased to $24.4 million for the six months ended June 30, 2020, representing an increase of $7.6 million, or 45%. The increase was primarily attributable to an $8.8 million increase in revenue generated from the Genentech Agreement, partially offset by a $1.0 million decrease in revenue generated from translational agreements and a $0.3 million decrease in revenue generated from MRD development agreements.

Cost of Revenue

	Six Months Ended June 30,		Change		Percent of Revenue	
(in thousands, except percentages)	2020	2019	$	%	2020	2019
Cost of revenue	$ 10,255	$ 10,722	$ (467)	(4)%	24%	31%

Cost of revenue was $10.3 million for the six months ended June 30, 2020, compared to $10.7 million for the six months ended June 30, 2019, representing a decrease of approximately $0.5 million, or approximately 4%. The decrease in cost of revenue was primarily attributable to a $1.9 million decrease related to higher usage of our production lab to process research and development samples versus cost of revenue samples, which was partially offset by a $1.3 million period-over-period increase in cost of revenue related to increases in labor and overhead costs.

Research and Development

	Six Months Ended June 30,		Change		Percent of Revenue	
(in thousands, except percentages)	2020	2019	$	%	2020	2019
Research and development	$ 49,927	$ 29,010	$ 20,917	72%	119%	83%

The following table presents disaggregated research and development expenses by cost classification for the periods presented:

	Six Months Ended June 30,		
(in thousands)	2020	2019	Change
Research and development materials and allocated production laboratory expenses	$ 21,256	$ 12,649	$ 8,607
Personnel expenses	20,896	12,372	8,524
Allocable facilities and information technology expenses	2,274	1,603	671
Software and cloud services expenses	1,641	728	913
Depreciation and other expenses	3,860	1,658	2,202
Total	$ 49,927	$ 29,010	$ 20,917

Research and development expenses were $49.9 million for the six months ended June 30, 2020, compared to $29.0 million for the six months ended June 30, 2019, representing an increase of $20.9 million, or 72%. The increase was primarily attributable to $8.6 million in additional cost of materials and allocated production laboratory expenses primarily related to supporting investments in immunoSEQ Dx and TCR-Antigen Map development and drug discovery efforts, an $8.5 million increase in personnel costs and a $2.2 million increase in depreciation and other expenses.

Sales and Marketing

(in thousands, except percentages)	Six Months Ended June 30, 2020	Six Months Ended June 30, 2019	Change $	Change %	Percent of Revenue 2020	Percent of Revenue 2019
Sales and marketing	$ 28,339	$ 16,714	$ 11,625	70%	68%	48%

Sales and marketing expenses were $28.3 million for the six months ended June 30, 2020, compared to $16.7 million for the six months ended June 30, 2019, representing an increase of $11.6 million, or approximately 70%. The increase was primarily attributable to $6.1 million in additional personnel costs, $5.0 million in additional marketing fees, which primarily related to clonoSEQ marketing efforts, and to a lesser extent corporate and research marketing efforts, and a $0.3 million increase in medical advisory costs.

General and Administrative

(in thousands, except percentages)	Six Months Ended June 30, 2020	Six Months Ended June 30, 2019	Change $	Change %	Percent of Revenue 2020	Percent of Revenue 2019
General and administrative	$ 24,059	$ 13,666	$ 10,393	76%	57%	39%

General and administrative expenses were $24.1 million for the six months ended June 30, 2020, compared to $13.7 million for the six months ended June 30, 2019, representing an increase of $10.4 million, or 76%. The increase was primarily attributable to $5.2 million in additional personnel costs, a $2.7 million increase in legal, accounting, and tax fees and a $1.9 million increase in insurance costs, as well as a $0.4 million increase in computer and software costs, a $0.4 million increase in credit and collections fees incurred and a $0.3 million increase in consultant fees. These increases were partially offset by a $0.8 million decrease in business taxes primarily resulting from the timing of the Genentech upfront payment received in February 2019.

Interest and Other Income, Net

(in thousands, except percentages)	Six Months Ended June 30, 2020	Six Months Ended June 30, 2019	Change $	Change %
Interest and other income, net	$ 4,787	$ 2,105	$ 2,682	127%

Interest and other income, net was $4.8 million for the six months ended June 30, 2020, compared to $2.1 million for the six months ended June 30, 2019, representing an increase of $2.7 million, or approximately 127%. The increase was primarily attributable to a $2.3 million impact of revaluing a convertible preferred stock warrant liability in the six months ended June 30, 2019, as well as a $0.3 million increase in net interest income and investment amortization resulting from a larger investment base.

Adjusted EBITDA

Adjusted EBITDA is a non-GAAP financial measure that we define as net loss adjusted for interest and other income, net, income tax benefit (expense), depreciation and amortization and share-based compensation expenses.

Management uses Adjusted EBITDA to evaluate the financial performance of our business and the effectiveness of our business strategies. We present Adjusted EBITDA because we believe it is frequently used by analysts, investors and other interested parties to evaluate companies in our industry and it facilitates comparisons on a consistent basis across reporting periods. Further, we believe it is helpful in highlighting trends in our operating results because it excludes items that are not indicative of our core operating performance.

Adjusted EBITDA has limitations as an analytical tool and you should not consider it in isolation, or as a substitute for analysis of our results as reported under GAAP. We may in the future incur expenses similar to the adjustments in the presentation of Adjusted EBITDA. In particular, we expect to incur meaningful share-based compensation expense in the future. Other limitations include that Adjusted EBITDA does not reflect:

- all expenditures or future requirements for capital expenditures or contractual commitments;
- changes in our working capital needs;
- income tax benefit (expense), which may be a necessary element of our costs and ability to operate;
- the costs of replacing the assets being depreciated and amortized, which will often have to be replaced in the future;
- the non-cash component of employee compensation expense; and
- the impact of earnings or charges resulting from matters we consider not to be reflective, on a recurring basis, of our ongoing operations.

In addition, Adjusted EBITDA may not be comparable to similarly titled measures used by other companies in our industry or across different industries.

The following is a reconciliation of our net loss to Adjusted EBITDA for the three and six months ended June 30, 2020 and 2019, respectively (in thousands):

	Three Months Ended June 30,		Six Months Ended June 30,	
	2020	2019	2020	2019
Net loss	$ (33,535)	$ (15,659)	$ (64,938)	$ (34,045)
Interest and other income, net	(1,893)	(446)	(4,787)	(2,105)
Income tax benefit	(1,481)	—	(1,804)	—
Depreciation and amortization expense	1,998	1,870	3,976	3,653
Share-based compensation expense (1)	6,373	3,332	11,048	6,378
Adjusted EBITDA	$ (28,538)	$ (10,903)	$ (56,505)	$ (26,119)

(1) Represents share-based compensation expense related to option and RSU awards. See Note 11 of the accompanying notes to our unaudited condensed financial statements appearing elsewhere in this report for details on our share-based compensation expense.

Liquidity and Capital Resources

We have incurred losses since inception and have incurred negative cash flows from operations from inception through December 31, 2018, and again in the interim periods within the first half of 2020. As of June 30, 2020, we had an accumulated deficit of $430.3 million.

We have funded our operations to date principally from the sale of convertible preferred stock and common stock and, to a lesser extent, sequencing and development revenue. As of June 30, 2020, we had cash, cash equivalents and marketable securities of $627.8 million. In July 2020, we completed an underwritten public offering of our common stock in which we issued and sold 7,200,000 shares of common stock at a public offering price of $40.00 per share. We received approximately $271.7 million in net proceeds, after deducting underwriting discounts and net offering expenses payable by us.

We believe our existing cash, cash equivalents and marketable securities will be sufficient to fund our operating expenses and capital expenditure requirements through at least the next 12 months. We may consider raising additional capital to expand our business, to pursue strategic investments, to take advantage of financing opportunities or for other reasons.

If our available cash, cash equivalents and marketable securities balances and anticipated cash flow from operations are insufficient to satisfy our liquidity requirements, we may seek to sell additional equity or convertible debt securities, enter into a credit facility or another form of third-party funding or seek other debt financing. The sale of equity and convertible debt securities may result in dilution to our shareholders and, in the case of preferred equity securities or convertible debt, those securities could provide for rights, preferences or privileges senior to those of our common stock. The terms of debt securities issued or borrowings pursuant to a credit agreement could impose significant restrictions on our operations. This additional capital may not be available on reasonable terms, or at all.

We plan to utilize the existing cash, cash equivalents and marketable securities on hand primarily to fund our commercial and marketing activities associated with our clinical products and services, continued research and development initiatives for our pipeline candidates and drug discovery initiatives, ongoing investments into our immune medicine platform and scaling of our laboratory operations with our anticipated growth. Cash in excess of immediate requirements is invested in accordance with our investment policy, primarily with a view to liquidity and capital preservation. Currently, our funds are held in money market funds and marketable securities consisting of U.S. government debt securities and corporate bonds.

While we may experience reductions in our revenue in the near term as a result of the COVID-19 pandemic or otherwise, as long term revenue from sales of our current and future products and services is expected to grow, we expect our accounts receivable and inventory balances to increase. Any increase in accounts receivable and inventory may not be completely offset by increases in accounts payable and accrued expenses, which could result in greater working capital requirements.

Moreover, we expect to incur additional costs associated with operating as a public company, including expenses related to legal, accounting, regulatory matters and exchange listing and SEC compliance matters, as well as director and officer insurance premiums and investor relations.

Cash Flows

The following table summarizes our uses and sources of cash for the six months ended June 30, 2020 and 2019 (in thousands):

	Six Months Ended June 30,	
	2020	2019
Net cash (used in) provided by operating activities	$ (62,683)	$ 262,333
Net cash provided by (used in) investing activities	320,251	(267,525)
Net cash provided by (used in) financing activities	11,296	(1,380)

Operating Activities

Cash used in operating activities during the six months ended June 30, 2020 was $62.7 million, which was primarily attributable to a net loss of $64.9 million, a net change in our operating assets and liabilities of $11.7 million and a benefit from income tax of $1.8 million, which were partially offset by non-cash share-based compensation of $11.0 million, non-cash depreciation and amortization of $3.3 million and non-cash lease expense of $1.3 million. The net change in our operating assets and liabilities was primarily due to a $17.2 million reduction in deferred revenue primarily related to revenue recognized from the Genentech Agreement, a $1.9 million reduction in accounts payable and accrued liabilities and a $1.5 million increase in inventory. These changes were partially offset by reductions in accounts receivable, net and prepaid expenses and other current assets of $4.7 million and $4.2 million, respectively.

Cash provided by operating activities during the six months ended June 30, 2019 was $262.3 million, which was primarily attributable to a net change in our operating assets and liabilities of $286.1 million, non-cash share-based compensation of $6.4 million, non-cash depreciation and amortization of $1.8 million and a $2.3 million fair value adjustment of the convertible preferred stock warrant liability due to an increase in valuation of our common stock, partially offset by a net loss of $34.0 million. The net change in our operating assets and liabilities primarily reflects an increase in deferred revenue of $288.7 million, primarily due to the $300.0 million upfront payment by Genentech, and an increase in accounts payable and accrued liabilities of $1.3 million primarily due to growth in operating expenses and timing of vendor payments, partially offset by an increase in accounts receivable, net of $2.4 million primarily due to an increase in sequencing revenue paid in arrears rather than upfront by biopharmaceutical customers, an increase in prepaid expenses and other current assets of $0.9 million primarily due to receivables from investment maturities and a $0.5 million decrease in deferred rent due to increased cash rent payments.

Investing Activities

Cash provided by investing activities during the six months ended June 30, 2020 was $320.3 million, which was primarily attributable to proceeds from sales and maturities of marketable securities of $433.2 million, partially offset by purchases of marketable securities of $107.7 million and purchases of property and equipment of $5.2 million.

Cash used in investing activities during the six months ended June 30, 2019 was $267.5 million, which was primarily attributable to purchases of marketable securities of $358.7 million and purchases of property and equipment of $5.4 million, partially offset by maturities of marketable securities of $96.5 million.

Financing Activities

Cash provided by financing activities during the six months ended June 30, 2020 was $11.3 million, which was primarily attributable to proceeds from the exercise of stock options.

Cash used in financing activities during the six months ended June 30, 2019 was $1.4 million, which was primarily attributable to payment of deferred initial public offering costs of $3.4 million, partially offset by proceeds of $2.0 million from the exercise of stock options.

Contractual Obligations and Commitments

Except for the addition of the amendment to our lease in South San Francisco, California, as set forth in Note 8 of the accompanying notes to our unaudited condensed financial statements, which resulted in additional lease obligations of $9.0 million, as of June 30, 2020, there have been no material changes outside the ordinary course of business to our contractual obligations and commitments as previously disclosed in our Annual Report on Form 10-K for the year ended December 31, 2019.

Net Operating Loss Carryforwards

Utilization of our net operating loss ("NOL") carryforwards and credits may be subject to a substantial annual limitation due to the ownership change limitations provided by Section 382 of the Internal Revenue Code of 1986 ("Section 382") and similar state provisions. The annual limitation may result in the expiration of NOL carryforwards and credits before utilization. If there should be an ownership change, our ability to utilize our NOL carryforwards and credits could be limited. We have completed a Section 382 analysis and have determined there are no permanent limitations on the utilization of approximately $225.4 million of our federal NOLs as of December 31, 2018. We have not updated this analysis for ownership changes subsequent to December 31, 2018. Under the TCJA, federal net operating losses incurred in 2018 and future years may be carried forward indefinitely, but the deductibility of such federal NOL is subject to an annual limitation. Net operating losses generated prior to 2018 are eligible to be carried forward up to 20 years. Based on the available objective evidence, management determined that it was more likely than not that the net deferred tax assets would not be realizable as of December 31, 2019. Accordingly, management applied a full valuation allowance against net deferred tax assets as of December 31, 2019. In March 2020, under the newly enacted CARES Act, NOLs arising in tax years beginning after December 31, 2017 and before January 1, 2021 may be carried back to each of the five tax years preceding the tax year of the loss. Additionally, the CARES Act temporarily removes the 80% limitation, reinstating it for tax years beginning after 2020.

Off-Balance Sheet Arrangements

As of June 30, 2020 and December 31, 2019, we have not had any off-balance sheet arrangements, as defined in the rules and regulations of the SEC.

Critical Accounting Policies and Estimates

We have prepared our financial statements in accordance with GAAP. Our preparation of these financial statements requires us to make estimates, assumptions and judgments that affect the reported amounts of assets, liabilities and related disclosures at the date of the financial statements, as well as revenue and expense recorded during the reporting periods. We evaluate our estimates and judgments on an ongoing basis. We base our estimates on historical experience and or other relevant assumptions that we believe to be reasonable under the circumstances. Estimates are used in several areas, including, but not limited to, estimates of progress to date for certain performance obligations and transaction price for certain contracts with customers, share-based compensation, including the fair value of stock, the provision for income taxes, including related reserves, and goodwill, among others. These estimates generally involve complex issues and require judgments, involve the analysis of historical results and prediction of future trends, can require extended periods of time to resolve and are subject to change from period to period. Actual results may differ materially from management's estimates.

While our significant accounting policies are described in more detail in our Annual Report on Form 10-K for the year ended December 31, 2019, as well as in Note 2 of the accompanying notes to our unaudited condensed financial statements included elsewhere in this report, we believe the following accounting policies are critical to the judgments and estimates used in the preparation of our financial statements:

- revenue recognition;
- share-based compensation;
- common stock valuations; and
- goodwill.

There have been no material changes to our critical accounting policies and estimates as previously disclosed in our Annual Report on Form 10-K for the year ended December 31, 2019.

JOBS Act Accounting Election

We are an “emerging growth company” within the meaning of the JOBS Act. The JOBS Act allows an emerging growth company to delay the adoption of new or revised accounting standards that have different effective dates for public and private companies until those standards apply to private companies. We have elected to use this extended transition period and, as a result, our financial statements may not be comparable to companies that comply with public company effective dates. We also intend to rely on other exemptions provided by the JOBS Act, including not being required to comply with the auditor attestation requirements of Section 404(b) of the Sarbanes-Oxley Act.

We will remain an emerging growth company until December 31, 2020, when we will be deemed to be a “large accelerated filer” as defined in Rule 12b-2 under the Securities Exchange Act of 1934, as amended (the "Exchange Act") based on the market value of our common stock held by non-affiliates exceeding $700.0 million as of the last business day of the quarter ended June 30, 2020.

Recent Accounting Pronouncements

See Note 2 of the accompanying notes to our unaudited condensed financial statements included elsewhere in this report for more information.

Item 3. Quantitative and Qualitative Disclosures about Market Risk

Interest Rate Risk

We are exposed to market risk for changes in interest rates related primarily to our cash and cash equivalents and marketable securities. As of June 30, 2020, there have been no material changes to our market risks as previously disclosed in our Annual Report on Form 10-K for the year ended December 31, 2019.

Item 4. Controls and Procedures

Under the supervision and with the participation of our management, including our Chief Executive Officer and Chief Financial Officer, we evaluated the effectiveness of the design and operation of our disclosure controls and procedures pursuant to Rule 13a-15 under the Exchange Act as of the end of the period covered by this report. Based on that evaluation, our Chief Executive Officer and Chief Financial Officer have concluded that our disclosure controls and procedures were effective as of June 30, 2020. There was not any change in our internal control over financial reporting (as such term is defined in Rules 13a-15(f) under the Exchange Act) during the three months ended June 30, 2020 that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

PART II—OTHER INFORMATION

Item 1. Legal Proceedings

From time to time, we may be subject to legal proceedings. We are not currently a party to or aware of any proceedings that we believe will have, individually or in the aggregate, a material adverse effect on our business, financial condition or results of operations. Regardless of outcome, litigation can have an adverse impact on us because of defense and settlement costs, diversion of management resources and other factors.

Item 1A. Risk Factors

We operate in a rapidly changing environment that involves a number of risks that could materially affect our business, financial condition or future results, some of which are beyond our control. In addition to the other information set forth in this report, the risks and uncertainties that we believe are most important for you to consider are discussed in Part I, Item 1A under the caption "Risk Factors" in our Annual Report on Form 10-K for the year ended December 31, 2019, and the risk factors set forth in the Prospectus. Other than the factors set forth below, there have been no material changes to the risk factors described in the Annual Report on Form 10-K for the year ended December 31, 2019, nor the Prospectus. The risk factors may be important to understanding other statements in this report and should be read in conjunction with the unaudited condensed financial statements and related notes in the "Financial Statements (Unaudited)"section of this report and with the "Management's Discussion and Analysis of Financial Condition and Results of Operations" section of this report. Because of such risk factors, as well as other factors affecting our financial condition and operating results, past financial performance should not be considered to be a reliable indicator of future performance, and investors should not use historical trends to anticipate results or trends in future periods. Further, additional risks that we currently do not know about or that we currently believe to be immaterial may also impair our business, financial condition, operating results and prospects.

Our business could be adversely affected by the effects of health epidemics, including the recent COVID-19 pandemic, in regions where we or third parties on which we rely have significant laboratory operations, manufacturing facilities, concentrations of clinical trial sites or other business operations. The COVID-19 pandemic could materially affect our operations, including at our headquarters in Seattle and in our offices in South San Francisco, each subject to COVID-19 related government restrictions, as well as the business or operations of our manufacturers, contract research organizations or other third parties with whom we conduct business.

Our business could be adversely affected by global pandemics or health epidemics in regions where we have concentrations of clinical trial sites or other business operations, and such pandemics or epidemics could cause significant disruption in the operations of third-party manufacturers, suppliers, general contractors and sub-contractors related to capital projects and contract research organizations upon whom we rely. For example, in December 2019, a novel strain of coronavirus, SARS-CoV-2, causing a disease referred to as COVID-19, was reported to have surfaced in Wuhan, China. Since then, COVID-19 has spread to multiple countries and the World Health Organization has declared the outbreak a "pandemic." In response to the pandemic, the U.S. government has imposed restrictions on travel between the United States, Europe and certain other countries.

Most of our facilities and employees are based in Seattle, Washington at our corporate headquarters and are subject to a variety of restrictions designed to slow the spread of COVID-19, which have disrupted our normal operations. Similarly, our South San Francisco offices are subject to state and local restrictions that have disrupted our normal operations. With respect to our laboratory operations, we intend to rely on the measures implemented in the first quarter of 2020 to reduce the risk of exposure of COVID-19 to the employees who continue to work on site as part of government-defined essential services, including the implementation of work-from-home policies for certain employees, as well as the implementation of shifts and zones to physically distance employees who remain on site. In addition, our laboratory staff processes samples from patients who have contracted, been exposed to, or recovered from COVID-19. We work with a variety of materials that could be hazardous to human health and intend to continue to adhere to the safety measures implemented to reduce the risk of exposure to our on-site staff. In the event of COVID-19 exposure to our employees, it is possible that all or a portion of our operations could be materially disrupted.

The effects of various government orders and our own operating policies related to COVID-19 may negatively impact productivity, disrupt our business and delay our clinical programs and corporate expansion initiatives, the magnitude of which will depend, in part, on the length and severity of the restrictions and other limitations regarding our ability to conduct our business in the ordinary course. These and similar, and perhaps more severe, disruptions in our operations could negatively impact our business, operating results and financial condition.

Quarantines, stay-at-home orders and similar government orders, or the perception that such orders, shutdowns or other restrictions on business operations could occur, whether related to COVID-19 or other infectious diseases, could impact personnel at third-party manufacturing or supplier facilities in the United States and other countries, or the availability or cost of materials, which would disrupt our supply chain.

The spread of COVID-19, which has caused significant worldwide economic volatility, uncertainty and disruption, may materially affect us economically. While the potential economic impact brought by, and the duration of, COVID-19 may be difficult to assess or predict, a widespread pandemic could result in significant disruption of global financial markets, reducing our ability to access capital, which could in the future negatively affect our liquidity. In addition, a recession or market correction resulting from the spread of COVID-19 could materially affect our business and the value of our common stock.

The global pandemic of COVID-19 continues to rapidly evolve. The ultimate impact of the COVID-19 pandemic or a similar health epidemic is highly uncertain and subject to change. We do not yet know the full extent of potential delays or impacts on our business, clinical trials, corporate expansion plans and other initiatives, or the impacts to healthcare systems or the global economy as a whole. However, these effects could have a material impact on our operations, and we will continue to monitor the COVID-19 situation closely.

The COVID-19 pandemic could adversely impact portions of our business that rely on research and development activities or clinical trials and delay or disrupt our pipeline, which may adversely impact revenue.

The extent to which the COVID-19 pandemic may impact our business with respect to research and development and clinical trials will depend on future developments, which are highly uncertain and cannot be predicted with confidence, such as the ultimate geographic spread of the disease, the duration of the outbreak, travel restrictions and social distancing in the United States and other countries, business closures or business disruptions and the effectiveness of actions taken in the United States and other countries to contain and treat the disease. As the COVID-19 pandemic continues to spread around the globe, we will likely experience disruptions that could severely impact our business with respect to research and development and clinical trials, including:

- delays or difficulties in enrolling patients or maintaining scheduled study visits in our clinical trials;
- delays or difficulties in clinical site initiation, including difficulties in recruiting clinical site investigators and clinical site staff;
- diversion of healthcare resources away from the conduct of clinical trials, including the diversion of hospitals serving as our clinical trial sites and hospital staff supporting the conduct of our clinical trials;
- interruption of key clinical trial activities, such as clinical trial site monitoring, due to limitations on travel or the unavailability of service providers due to business interruptions to or adverse financial impact on those service providers;
- limitations in employee resources that would otherwise be focused on the conduct of our business with respect to research and development or clinical trials, including due to illness of our employees or their families, an increase in childcare responsibilities for certain employees, the desire of our employees to avoid close contact or contact with large groups of people or as a result of the governmental imposition of stay-at-home orders or similar working restrictions;
- delays in receiving approval from local regulatory authorities to initiate our planned clinical trials;
- delays in clinical sites receiving the supplies, materials or services needed to conduct clinical trials;
- interruption in global shipping that may affect the transport of clinical trial materials;
- changes in local regulations as part of a response to the COVID-19 pandemic, which may require us to change the ways in which our clinical trials are conducted, which may result in unexpected costs, or discontinuing clinical trials altogether;
- delays in necessary interactions with local regulators, ethics committees and other important agencies and contractors due to limitations in employee resources or forced furlough of government employees; and
- refusal of the FDA to accept data from clinical trials in affected geographies outside the United States.

In addition, regulatory milestones represent a substantial part of our business strategy and are a key component of development revenue. The disruptions set forth above may materially affect our ability to achieve regulatory milestones, resulting in delays in our clinical pipeline and a material adverse effect on revenues.

Due to the ongoing uncertainties related to the COVID-19 pandemic, we may also experience variability in revenue in the near term as restrictions in our customers’ abilities to procure samples for their research initiatives evolve and as clinical testing is impacted. Additionally, if our sample volume throughput is reduced as a result of the COVID-19 pandemic or otherwise, cost of revenue as a percentage of total revenue may be adversely impacted due to fixed overhead costs.

Item 2. Unregistered Sales of Equity Securities and Use of Proceeds

Sales of Unregistered Securities

Not applicable.

Use of Proceeds from our IPO

On July 1, 2019, we closed our initial public offering, in which we issued and sold 17,250,000 shares of our common stock, including the full exercise of the underwriters' over-allotment option, at a public offering price of $20.00 per share for an aggregate offering price of $345.0 million. All of the shares of common stock issued and sold in the offering were registered under the Securities Act of 1933, as amended ("Securities Act") pursuant to a registration statement on Form S-1 (File No. 333-231838), which was declared effective by the SEC on June 26, 2019.

Cash used since the initial public offering is described elsewhere in the "Management's Discussion and Analysis of Financial Condition and Results of Operations" section of our periodic reports filed with the SEC. As of June 30, 2020, there has been no material change in the planned use of proceeds from our initial public offering as described in our prospectus dated June 26, 2019 filed with the SEC on June 27, 2019 in connection with our initial public offering.

Item 3. Defaults Upon Senior Securities

Not applicable.

Item 4. Mine Safety Disclosures

Not applicable.

Item 5. Other Information

Not applicable.

Item 6. Exhibits

		Incorporated by Reference				
Exhibit Number	**Exhibit Title**	**Form**	**File No.**	**Exhibit**	**Filing Date**	**Filed/ Furnished with This Report**
3.1	Amended and Restated Articles of Incorporation	8-K	001-38957	3.1	7/1/2019	
3.2	Amended and Restated Bylaws	8-K	001-38957	3.2	7/1/2019	
4.1	Seventh Amended and Restated Investors' Rights Agreement among Adaptive Biotechnologies Corporation and certain of its shareholders, dated May 30, 2019	S-1	333-231838	4.1	5/30/2019	
10.1	Form of Executive Severance Agreement between Adaptive Biotechnologies Corporation and certain of its executive officers					X
31.1	Certification of Principal Executive Officer Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002					X
31.2	Certification of Principal Financial and Accounting Officer Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002					X
32.1*	Certification of Principal Executive Officer Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002					X
32.2*	Certification of Principal Financial and Accounting Officer Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002					X
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.					X
101.SCH	Inline XBRL Taxonomy Extension Schema Document					X
101.CAL	Inline XBRL Taxonomy Extension Calculation Linkbase Document					X
101.DEF	Inline XBRL Taxonomy Extension Definition Linkbase Document					X
101.LAB	Inline XBRL Taxonomy Extension Label Linkbase Document					X
101.PRE	Inline XBRL Taxonomy Extension Presentation Linkbase Document					X
104	Cover Page Interactive Data File (formatted in Inline XBRL and included in Exhibit 101)					X

*This certification is deemed not filed for purposes of Section 18 of the Exchange Act, or otherwise subject to the liability of that section, nor shall it be deemed incorporated by reference into any filing under the Securities Act or the Exchange Act.

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.

		Adaptive Biotechnologies Corporation
Date: August 10, 2020	By:	***/s/ Chad Robins*** Chad Robins Chief Executive Officer and Director (Principal Executive Officer)
Date: August 10, 2020	By:	***/s/ Chad Cohen*** Chad Cohen Chief Financial Officer (Principal Financial and Accounting Officer)

ADAPTIVE BIOTECHNOLOGIES CORPORATION
EXECUTIVE SEVERANCE AGREEMENT

This Executive Severance Agreement (the "**Agreement**") is entered into by and between Adaptive Biotechnologies Corporation, a Washington corporation (the "**Company**"), and [Insert Name] ("**Executive**"). The terms of this Agreement will become effective on the Effective Date (as defined below).

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

2. Severance Benefits.

(a) Qualifying Termination Outside of Change in Control Period. Following the Effective Date, if outside of the Change in Control Period the Company (or its successor) terminates Executive's employment with the Company for a reason other than Cause, death or disability, or Executive resigns Executive's employment for Good Reason, Executive will be eligible to receive the following severance pay and benefits subject to Executive's continued compliance with the obligations set forth in Executive's nondisclosure and assignment agreement, dated [__________, 20__] (the "**NDAA**") and Sections 3 and 4 below:

(i) Cash-based Severance. A lump-sum severance payment equal to (x) the Monthly Factor multiplied by (y) Executive's base salary as in effect on the Executive's termination date, which amount will be paid on the first payroll period after the 60-day anniversary of Executive's termination date.

(ii) Continued Employee Benefits. If Executive elects group health insurance continuation coverage pursuant to Title X of the Consolidated Omnibus Budget Reconciliation Act of 1985, as amended ("**COBRA**"), within the time period prescribed pursuant to COBRA for Executive, including Executive's eligible and covered dependents, the Company will reimburse Executive for the premiums necessary to continue group health insurance benefits for Executive and Executive's eligible dependents, as applicable, until the earlier of (A) a period of [12] [6] [3] months from the date of Executive's termination of employment, (B) the date upon which Executive and Executive's eligible dependents, as applicable, become covered under similar plans of another employer, or (C) the date upon which Executive ceases to be eligible for coverage under COBRA (such reimbursements, the "**COBRA Premiums**"). If the Company, however, determines in its sole discretion that it cannot pay the COBRA Premiums without potentially violating applicable law (including, without limitation, Section 2716 of the Public Health Service Act), the Company will in lieu thereof provide to Executive a taxable monthly cash payment for [12] [6] [3] months, which will be payable on the last day of a given month in an amount equal to the monthly COBRA premium that Executive would be required to pay to continue Executive's group health coverage in effect on the date of Executive's termination of employment (which amount will be based on the premium for the first month of COBRA coverage), which payments will be made regardless of whether Executive elects COBRA continuation coverage and will commence on the month following Executive's termination of employment and will end on the date upon which Executive obtains other employment. For the avoidance of doubt, the taxable payments in lieu of COBRA Premiums may be used for any purpose, including, but not limited to, continuation coverage under COBRA, and will be subject to all applicable tax withholdings. Notwithstanding anything to the contrary under this Agreement, if at any time the Company determines in its sole discretion that it cannot provide the payments contemplated by the preceding sentence without violating applicable law (including, without limitation, Section 2716 of the Public Health Service Act), Executive will not receive such payment or any further reimbursements for COBRA premiums.

(b) Qualifying Termination Within Change in Control Period. If within the Change in Control Period the Company (or its successor) terminates Executive's employment with the Company for a reason other than Cause, death or disability, or Executive resigns Executive's employment for Good Reason, Executive will be eligible to receive the following benefits:

(i) Cash-based Severance. An amount equal to the sum of: (x) the product of (1) the Change In Control Monthly Factor multiplied by (2) Executive's base salary as in effect on the Executive's termination date PLUS (y) the product of (1) the Change in Control Monthly Factor multiplied by (2) Executive's base salary as in effect on the Executive's termination date multiplied by (3) Executive's target annual cash bonus percentage in the year of Executive's termination, which will be paid on the first payroll period after the 60-day anniversary of Executive's termination date.

(ii) Acceleration of Equity Awards. All outstanding and unvested Company equity awards that, in each case, are solely subject to time-based vesting will immediately accelerate as to 100% of the unvested portion of each such award immediately prior to Executive's termination.

(iii) Continued Employee Benefits. If Executive elects group health insurance continuation coverage pursuant to COBRA within the time period prescribed pursuant to COBRA for Executive, including Executive's eligible and covered dependents, the Company will reimburse Executive for the COBRA Premiums until the earlier of (A) a period of [18] [12] [6] months from the date of Executive's termination of employment, (B) the date upon which Executive and Executive's eligible dependents, as applicable, become covered under similar plans of another employer, or (C) the date upon which Executive ceases to be eligible for coverage under COBRA. If the Company, however, determines in its sole discretion that it cannot pay the COBRA Premiums without potentially violating applicable law (including, without limitation, Section 2716 of the Public Health Service Act), the Company will in lieu thereof provide to Executive a taxable monthly cash payment for [18] [12] [6] months, which will be payable on the last day of a given month in an amount equal to the monthly COBRA premium that Executive would be required to pay to continue Executive's group health coverage in effect on the date of Executive's termination of employment (which amount will be based on the premium for the first month of COBRA coverage), which payments will be made regardless of whether Executive elects COBRA continuation coverage and will commence on the month following Executive's termination of employment and will end on the date upon which Executive obtains other employment. For the avoidance of doubt, the taxable payments in lieu of COBRA Premiums may be used for any purpose, including, but not limited to, continuation coverage under COBRA, and will be subject to all applicable tax withholdings. Notwithstanding anything to the contrary under this Agreement, if at any time the Company determines in its sole discretion that it cannot provide the payments contemplated by the preceding sentence without violating applicable law (including, without limitation, Section 2716 of the Public Health Service Act), Executive will not receive such payment or any further reimbursements for COBRA premiums.

(c) Voluntary Resignation; Termination for Cause, Death or Disability. If Executive's employment with the Company terminates (i) voluntarily by Executive (other than for Good Reason), (ii) for Cause by the Company, or (iii) due to Executive's death or disability, then Executive will not be entitled to receive any severance pay or benefits.

(d) Accrued Compensation. For the avoidance of any doubt, in the event of a termination of Executive's employment with the Company, Executive will be entitled to receive all expense reimbursements, wages, and other benefits due to Executive under any Company-provided plans, policies, and arrangements.

(e) Exclusive Remedy. In the event of a termination of Executive's employment with the Company, except as otherwise set forth in a written agreement signed by Executive and by an authorized representative of the Company, the provisions of this Section 2 are intended to be and are exclusive and in lieu of any other rights or remedies to which Executive or the Company may otherwise be entitled, whether at law, tort or contract, in equity. Executive will be entitled to no benefits, compensation or other payments or rights upon termination of employment other than those benefits expressly set forth in this Section 2.

3. Conditions to Receipt of Severance.

(a) Separation Agreement and Release of Claims. The receipt of any severance pay and benefits pursuant to Section 2 hereof are subject to and conditioned upon:

(i) Executive resigning from all positions Executive may hold as an officer or director of the Company and all of its Affiliates, and executing all documents the Company determines, in its sole discretion, are necessary to effectuate such resignations prior to the Release Deadline (as defined below) (such resignation and execution of applicable documents, the "**Resignations**"), and

(ii) Executive signing and not revoking a separation agreement and release of claims on the Company's standard form of agreement for senior employees and executives (the "**Release**") that becomes effective and irrevocable no later than 60 days following the termination date (such deadline, the "**Release Deadline**"). If the Release does not become effective and irrevocable by the Release Deadline, Executive will forfeit any rights to severance pay and benefits under this Agreement. In no event will severance payments or benefits be paid or provided until the Release becomes effective and irrevocable. Except as required by Section 3(b), any installment payments that would have been made to Executive prior to the Release becoming effective and irrevocable but for the preceding sentence will be paid to Executive on the first regularly scheduled Company payroll date following the date the Release becomes effective and irrevocable, and the remaining payments will be made as provided in this Agreement.

(b) Section 409A.

(i) Notwithstanding anything to the contrary in this Agreement, no Deferred Payments will be paid or otherwise provided until Executive has a "separation from service" within the meaning of Section 409A. Similarly, no severance payable to Executive, if any, pursuant to this Agreement that otherwise would be exempt from Section 409A pursuant to Treasury Regulation Section 1.409A-1(b)(9) will be payable until Executive has a "separation from service" within the meaning of Section 409A.

(ii) Any severance payments or benefits under this Agreement that would be considered Deferred Payments will be paid on, or, in the case of installments, will not commence until, the 60th day following Executive's separation from service, or, if later, such time as required by Section 3(b)(iii). Except as required by Section 3(b)(iii), any installment payments that would have been made to Executive during the 60-day period immediately following Executive's separation from service but for the preceding sentence will be paid to Executive on the 60th day following Executive's separation from service and the remaining payments will be made as provided in this Agreement. In no event will Executive have discretion to determine the taxable year of payment for any Deferred Payments.

(iii) Notwithstanding anything to the contrary in this Agreement, if Executive is a "specified employee" within the meaning of Section 409A at the time of Executive's separation from service (other than due to death), then the Deferred Payments that are payable within the first 6 months following Executive's separation from service, will, to the extent required to be delayed pursuant to Section 409A(a)(2)(B) of the Code, become payable on the date 7 months and 1 day following the date of Executive's separation from service. All subsequent Deferred Payments, if any, will be payable in accordance with the payment schedule applicable to each payment or benefit. Notwithstanding anything herein to the contrary, if Executive dies following Executive's separation from service, but prior to the 6-month anniversary of the separation from service, then any payments delayed in accordance with this paragraph will be payable in a lump sum as soon as administratively practicable after the date of Executive's death and all other Deferred Payments will be payable in accordance with the payment schedule applicable to each payment or benefit. Each payment and benefit payable under this Agreement is intended to constitute a separate payment for purposes of Section 1.409A-2(b)(2) of the Treasury Regulations.

(iv) Any amount paid under this Agreement that satisfies the requirements of the "short-term deferral" rule set forth in Section 1.409A-1(b)(4) of the Treasury Regulations will not constitute Deferred Payments.

(v) Any amount paid under this Agreement that qualifies as a payment made as a result of an involuntary separation from service pursuant to Section 1.409A-1(b)(9)(iii) of the Treasury Regulations that does not exceed the Section 409A Limit (as defined below) will not constitute Deferred Payments.

(vi) The foregoing provisions and all compensation and benefits provided for under this Agreement are intended to comply with or be exempt from the requirements of Section 409A so that none of the severance payments and benefits to be provided hereunder will be subject to the additional tax imposed under Section 409A, and any ambiguities or ambiguous terms herein will be interpreted to be exempt or so comply. Notwithstanding anything herein to the contrary, the parties hereto acknowledge and agree that the severance pay provided under Section 2 of this Agreement may be considered "nonqualified deferred compensation" under Section 409A due to the terms and conditions previously set forth in Executive's Prior Employment Agreement, if applicable. The Company and Executive agree to work together in good faith to consider amendments to this Agreement and to take such reasonable actions which are necessary, appropriate, or desirable to avoid imposition of any additional tax or income recognition prior to actual payment to Executive under Section 409A. The Company makes no guarantee of any particular tax result with respect to the payments and benefits provided hereunder, and in no event will the Company reimburse Executive for any taxes that may be imposed on Executive as a result of Section 409A.

4. Limitation on Payments. In the event that any payment or benefit pursuant to this Agreement or otherwise that Executive would receive in connection with a change in control or ownership of the Company (a "**Transaction Payment**") would (a) constitute a "parachute payment" within the meaning of Section 280G of the Code, and (b) but for this sentence, be subject to the excise tax imposed by Section 4999 of the Code (the "**Excise Tax**"), then the Company shall cause the following:

(i) payment in full of the entire amount of the Transaction Payments (a "**Full Payment**"), or

(ii) payment of only a part of the Transaction Payments so that Executive receives the largest payment possible without the imposition of the Excise Tax (a "**Reduced Payment**"),

whichever amount results in Executive's receipt, on an after-tax basis, of the greater amount of the Transaction Payment notwithstanding that all or some portion of the Transaction Payment may be subject to the Excise Tax. For purposes of determining whether to make a Full Payment or a Reduced Payment, the Company shall cause to be taken into account all applicable federal, state and local income and employment taxes and the Excise Tax (all computed at the highest applicable marginal rate, net of the maximum reduction in federal income taxes which could be obtained from a deduction of such state and local taxes). If a Reduced Payment is made, (x) the Transaction Payment shall be paid only to the extent permitted under the Reduced Payment alternative, and Executive shall have no rights to any additional payments and/or benefits constituting the Transaction Payment, and (y) reduction in payments and/or benefits shall occur in the following order: (1) reduction of cash payments (if any); (2) cancellation of accelerated vesting of equity awards other than stock options; (3) cancellation of accelerated vesting of stock options; and (4) reduction of other benefits (if any) paid to Executive; provided that in each case, the reduction of payments and benefits shall be implemented in a manner that does not violate Section 409A of the Code. In the event that acceleration from Executive's equity awards is to be reduced, such acceleration of vesting shall be canceled in the reverse order of the date of grant. The Company shall appoint a nationally recognized independent registered public accounting firm, executive compensation consulting firm, or law firm to make the determinations required hereunder. The Company shall bear all expenses with respect to the determinations required to be made hereunder. The firm engaged to make the determinations hereunder shall provide its calculations, together with detailed supporting documentation, to the Company and Executive within fifteen (15) calendar days after the date on which Executive's right to a Transaction Payment is triggered (if requested at that time by the Company or Executive) or such other time as reasonably requested by the Company or Executive. If firm determines that no Excise Tax is payable with respect to the Transaction Payments, either before or after the application of the Reduced Amount, it shall furnish the Company with an opinion reasonably acceptable to the Company that no Excise Tax will be imposed with respect to such Transaction Payments. Any good faith determinations of the firm made hereunder shall be final, binding and conclusive upon Executive.

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

(a) Affiliate. "**Affiliate**" means any parent or subsidiary of the Company.

(b) Cause. "**Cause**" has the meaning set forth in Section 2.1(g) of the Company's 2019 Equity Incentive Plan, as amended.

(c) Change in Control. "**Change in Control**" has the meaning set forth in Section 2.1(h) of the Company's 2019 Equity Incentive Plan, as amended.

(d) Change in Control Monthly Factor. "**Change in Control Monthly Factor**" means [18][12][6], divided by 12. [As an example, if Executive has a base salary of $300,000 at the time of termination, a target bonus percentage of 40%, and a Change in Control Monthly Factor of 6/12, the Executive would be entitled to payment under Section 2(b)(i) of $210,000. ([6/12] * $300,000) + ([6/12] * $300,000 * 40%).]

(e) Change in Control Period. "**Change in Control Period**" means the 15-month period beginning 3 months prior to and ending 12 months following a Change in Control.

(f) Code. "**Code**" means the U.S. Internal Revenue Code of 1986, as amended.

(g) Deferred Payment. "**Deferred Payment**" means any severance pay or benefits to be paid or provided to Executive (or Executive's estate or beneficiaries) pursuant to this Agreement and any other severance payments or separation benefits, that in each case, when considered together, are considered nonqualified deferred compensation under Section 409A.

(h) Good Reason. "**Good Reason**" means, without Executive's written consent, (i) a material reduction in Executive's authority, duties or responsibilities with the Company relative to Executive's authority, duties or responsibilities in effect immediately prior to such reduction; provided, however, any change immediately following a Change in Control to a functionally comparable position with the Company's successor or within its group of controlled corporations shall not constitute Good Reason hereunder, (ii) a material reduction in the Executive's base compensation, other than in connection with simultaneous reductions in all other senior executives at the vice president level or above of equal or greater amount in percentage terms, (iii) a material change in the geographic location at which Executive must perform the his or her duties (which, for purposes of this Agreement, means a change of geographic location from which the Executive is principally employed to a location more than fifty (50) miles from the location of his or her principal employment immediately prior to the relocation); or (iv) a material breach by the Company of this Agreement or any other agreement between Executive and the Company; provided, however, that for "Good Reason" to be established under this Agreement, Executive must provide written notice to the Company's Board of Directors within 30 days immediately following such events described in (i) through (iv) hereof, the Company must fail to cure such event within 30 days after receipt of such notice, and Executive's resignation must be effective not later than 90 days after the expiration of such period to cure.

(i) Monthly Factor. "**Monthly Factor**" means [12][6][3], divided by 12. [As an example, if Executive has a base salary of $300,000 at the time of termination, and a Monthly Factor of 3/12, the Executive would be entitled to payment under Section 2(a)(i) of $75,000 ([3/12] * $300,000).]

(j) Section 409A. "**Section 409A**" means Section 409A of the Code and any final regulations and guidance thereunder and any applicable state law equivalent, as each may be amended or promulgated from time to time.

(k) Section 409A Limit. "**Section 409A Limit**" will mean two (2) times the lesser of: (i) Executive's annualized compensation based upon the annual rate of pay paid to Executive during the

Executive's taxable year preceding the Executive's taxable year of Executive's separation from service as determined under Treasury Regulation Section 1.409A-1(b)(9)(iii)(A)(1) and any Internal Revenue Service guidance issued with respect thereto; or (ii) the maximum amount that may be taken into account under a qualified plan pursuant to Section 401(a)(17) of the Code for the year in which Executive's separation from service occurred.

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

7. Integration. This Agreement (and the plans and agreements incorporated by reference) represents the entire agreement and understanding between the parties as to the subject matter herein and supersedes all prior or contemporaneous agreements whether written or oral regarding Executive's severance pay, severance benefits, equity award vesting acceleration rights, including without limitation as set forth in that certain [employment letter agreement, dated _______, 20__ and the Change in Control Agreement set forth in Exhibit __ thereof [and the severance letter agreement, dated _______, 20__] (the "**Prior Employment Agreement**")]. For the avoidance of any doubt, this Agreement does not modify Executive's NDAA in any respect. This Agreement may be modified only by agreement of the parties by a written instrument executed by the parties that is designated as an amendment to this Agreement.

8. Waiver of Breach. The waiver of a breach of any term or provision of this Agreement, which must be in writing, will not operate as or be construed to be a waiver of any other previous or subsequent breach of this Agreement.

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

10. Tax Withholding. All payments made pursuant to this Agreement will be subject to withholding of applicable taxes. Executive acknowledges and agrees that Executive is solely responsible for all individual taxes imposed on the payments and benefits made and provided under this Agreement, including taxes imposed under Section 409A.

11. Governing Law. This Agreement will be governed by the laws of the State of [Washington] (with the exception of its conflicts of law provisions).

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

13. Counterparts. This Agreement may be executed in counterparts and be delivered electronically, and each counterpart will have the same force and effect as an original and will constitute an effective, binding agreement on the part of each of the undersigned.

[*Signature Page Follows*]

IN WITNESS WHEREOF, each of the parties has executed this Agreement, in the case of the Company by their duly authorized officers, as of the day and year set forth below (the "**Effective Date**").

COMPANY:

ADAPTIVE BIOTECHNOLOGIES CORPORATION

By:

Name:

Title:

EXECUTIVE:

(Signature)

(Date)

[SIGNATURE PAGE TO EXECUTIVE SEVERANCE AGREEMENT]

Exhibit 31.1

**CERTIFICATION OF THE CHIEF EXECUTIVE OFFICER
PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002**

I, Chad Robins, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of Adaptive Biotechnologies Corporation;

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

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

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

    c) 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: August 10, 2020

By: /s/ Chad Robins

Chad Robins
Chief Executive Officer
(Principal Executive Officer)

Exhibit 31.2

**CERTIFICATION OF THE CHIEF FINANCIAL OFFICER
PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002**

I, Chad Cohen, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of Adaptive Biotechnologies Corporation;

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

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

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

    c) 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: August 10, 2020

By: /s/ Chad Cohen
Chad Cohen
Chief Financial Officer
(Principal Financial Officer and
Principal Accounting Officer)

Exhibit 32.1

CERTIFICATION 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 Adaptive Biotechnologies Corporation (the "Company") on Form 10-Q for the quarterly period ended June 30, 2020 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I certify, pursuant to 18 U.S.C. § 1350, as adopted pursuant to § 906 of the Sarbanes-Oxley Act of 2002, that to my knowledge:

1. The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended; and

2. The information contained in the Report fairly presents, in all material respects, the financial condition and result of operations of the Company.

Date: August 10, 2020

By: /s/ Chad Robins
Chad Robins
Chief Executive Officer
(Principal Executive Officer)

The foregoing certification is being furnished solely to accompany the Report pursuant to 18 U.S.C. § 1350, and is not being filed for purposes of Section 18 of the Securities Exchange Act of 1934, as amended, and is not to be incorporated by reference into any filing of the Company, whether made before or after the date hereof, regardless of any general incorporation language in such filing.

Exhibit 32.2

**CERTIFICATION 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 Adaptive Biotechnologies Corporation (the “Company”) on Form 10-Q for the quarterly period ended June 30, 2020 as filed with the Securities and Exchange Commission on the date hereof (the “Report”), I certify, pursuant to 18 U.S.C. § 1350, as adopted pursuant to § 906 of the Sarbanes-Oxley Act of 2002, that to my knowledge:

1. The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended; and

2. The information contained in the Report fairly presents, in all material respects, the financial condition and result of operations of the Company.

Date: August 10, 2020	By:	/s/ Chad Cohen
		Chad Cohen
		Chief Financial Officer
		(Principal Financial Officer and Principal Accounting Officer)

The foregoing certification is being furnished solely to accompany the Report pursuant to 18 U.S.C. § 1350, and is not being filed for purposes of Section 18 of the Securities Exchange Act of 1934, as amended, and is not to be incorporated by reference into any filing of the Company, whether made before or after the date hereof, regardless of any general incorporation language in such filing.