CODEXIS INC
Form 10-Q
August 09, 2018
UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549
FORM 10-Q
(Mark One)
x QUARTERLY REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
For the quarterly period ended June 30, 2018
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: 001-34705

Codexis, Inc.
(Exact name of registrant as specified in its charter)

Delaware (State or other jurisdiction of incorporation or organization)	71-0872999 (I.R.S. Employer Identification No.)
200 Penobscot Drive, Redwood City, California (Address of principal executive offices)	94063 (Zip Code)

(650) 421-8100
(Registrant's telephone number, including area code)
(Former name, former address and former fiscal year, if changed since last report)

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 ý No ¨

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate web site, if any, every Interactive Data File required to be submitted and posted 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 and post such files). Yes ý 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. (Check one):

Large accelerated filer	¨	Accelerated filer	x
Non-accelerated filer	¨(Do not check if a smaller reporting company)	Smaller reporting company	¨
		Emerging growth company	¨

If an emerging growth company, indicate by check mark if the registrant has elected not to use the 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 ý

As of July 31, 2018, there were 53,512,351 shares of the registrant's Common Stock, par value $0.0001 per share, outstanding.

Codexis, Inc.
Quarterly Report on Form 10-Q
For the Quarter Ended June 30, 2018

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PART I. FINANCIAL INFORMATION

Item 1. Financial Statements
Codexis, Inc.
Condensed Consolidated Balance Sheets
(Unaudited)
(In Thousands, Except Per Share Amounts)

	June 30, 2018	December 31, 2017
Assets		
Current assets:		
Cash and cash equivalents	$53,621	$ 31,219
Accounts receivable, net of allowances of $34 at June 30, 2018 and December 31, 2017	9,910	11,800
Inventories, net	1,036	1,036
Prepaid expenses and other current assets	1,162	984
Contract assets	554	—
Total current assets	66,283	45,039
Restricted cash	1,460	1,557
Marketable securities	676	671
Property and equipment, net	3,883	2,815
Goodwill	3,241	3,241
Other non-current assets	414	302
Total assets	$75,957	$ 53,625
Liabilities and Stockholders' Equity		
Current liabilities:		
Accounts payable	$3,082	$ 3,545
Accrued compensation	3,817	4,753
Other accrued liabilities	5,051	4,362
Deferred revenue	4,460	12,292
Total current liabilities	16,410	24,952
Deferred revenue, net of current portion	4,994	1,501
Lease incentive obligation, net of current portion	248	460
Financing obligation, net of current portion	183	302
Other long-term liabilities	1,592	1,863
Total liabilities	23,427	29,078
Commitments and Contingencies (Note 11)		
Stockholders' equity:		
Preferred stock, $0.0001 par value per share; 5,000 shares authorized; none issued and outstanding	—	—
Common stock, $0.0001 par value per share; 100,000 shares authorized; 53,508 shares and 48,365 shares issued and outstanding at June 30, 2018 and December 31, 2017, respectively	5	5
Additional paid-in capital	380,551	340,079
Accumulated other comprehensive loss	—	(472)
Accumulated deficit	(328,026)	(315,065)
Total stockholders' equity	52,530	24,547
Total liabilities and stockholders' equity	$75,957	$ 53,625

See accompanying notes to the unaudited condensed consolidated financial statements

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Codexis, Inc.
Condensed Consolidated Statements of Operations
(Unaudited)
(In Thousands, Except Per Share Amounts)

	Three Months Ended June 30,		Six Months Ended June 30,	
	2018	2017	2018	2017
Revenues:				
Product revenue	$3,723	$6,600	$9,886	$12,186
Research and development revenue	9,815	3,747	17,694	6,131
Total revenues	13,538	10,347	27,580	18,317
Costs and operating expenses:				
Cost of product revenue	2,611	3,790	6,436	6,792
Research and development	7,370	6,348	14,548	12,187
Selling, general and administrative	7,395	6,546	15,141	13,152
Total costs and operating expenses	17,376	16,684	36,125	32,131
Loss from operations	(3,838)	(6,337)	(8,545)	(13,814)
Interest income	174	49	245	68
Other expenses, net	(82)	(34)	(142)	(12)
Loss before income taxes	(3,746)	(6,322)	(8,442)	(13,758)
Benefit from income taxes	(11)	(42)	(13)	(18)
Net loss	$(3,735)	$(6,280)	$(8,429)	$(13,740)
Net loss per share, basic and diluted	$(0.07)	$(0.13)	$(0.17)	$(0.31)
Weighted average common stock shares used in computing net loss per share, basic and diluted	52,787	47,232	50,598	44,258

See accompanying notes to the unaudited condensed consolidated financial statements

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Codexis, Inc.
Condensed Consolidated Statements of Comprehensive Loss
(Unaudited)
(In Thousands)

	Three Months Ended June 30,		Six Months Ended June 30,	
	2018	2017	2018	2017
Net loss	$(3,735)	$(6,280)	$(8,429)	$(13,740)
Other comprehensive income				
Unrealized gain on marketable securities, net of tax [(1)]	—	194	—	102
Other comprehensive income	—	194	—	102
Total comprehensive loss	$(3,735)	$(6,086)	$(8,429)	$(13,638)

(1) No tax benefit (expense) for the three and six months ended June 30, 2018. Net of tax benefit of $60 for the three and six months ended June 30, 2017, respectively.

See accompanying notes to the unaudited condensed consolidated financial statements

Codexis, Inc.
Condensed Consolidated Statements of Cash Flows
(Unaudited)
(In Thousands)

	Six Months Ended June 30, 2018	2017
Operating activities:		
Net loss	$(8,429)	$(13,740)
Adjustments to reconcile net loss to net cash used in operating activities:		
Depreciation and amortization	503	554
Gain on disposal of property and equipment	1	(3)
Income tax benefit related to marketable securities	—	(60)
Stock-based compensation	4,437	3,379
Unrealized gain on investment in marketable securities	(5)	—
Changes in operating assets and liabilities:		
Accounts receivable, net	2,954	(1,879)
Inventories, net	—	19
Prepaid expenses and other current assets	(132)	(1,824)
Contract Assets	(554)	—
Other assets	79	(44)
Accounts payable	(530)	(446)
Accrued compensation	(936)	(1,394)
Other accrued liabilities	451	271
Long term lease incentive	(212)	(212)
Other long term liabilities	(302)	(56)
Deferred revenue	(9,466)	3,904
Net cash used in operating activities	(12,141)	(11,531)
Investing activities:		
Purchase of property and equipment	(1,472)	(680)
Proceeds from disposal of property and equipment	—	3
Net cash used in investing activities	(1,472)	(677)
Financing activities:		
Proceeds from exercises of stock options	1,858	142
Proceeds from issuance of common stock in connection with public offering, net of underwriting discounts and commission	37,497	23,782
Costs incurred in connection with public offering	(179)	(491)
Principal payments on capital lease obligations	(118)	(60)
Taxes paid related to net share settlement of equity awards	(3,140)	(1,636)
Net cash provided by financing activities	35,918	21,737
Net increase in cash, cash equivalents and restricted cash	22,305	9,529
Cash, cash equivalents and restricted cash at the beginning of the period	32,776	20,864
Cash, cash equivalents and restricted cash at the end of the period	$55,081	$30,393
Supplemental disclosure of cash flow information:		
Interest paid	$42	$117
Income taxes paid	$5	$5
Supplemental non-cash investing and financing activities:		

Equipment acquired under capital leases	$—	$840
Purchase of property and equipment recorded in accounts payable and accrued expenses	$67	$34

The following table provides a reconciliation of cash, cash equivalents and restricted cash reported within the unaudited condensed consolidated balance sheets to the total of the same such amounts shown above:

	Six Months Ended June 30,	
	2018	2017
Cash and cash equivalents	$53,621	$28,817
Restricted cash included in non-current assets	1,460	1,576
Total cash, cash equivalents and restricted cash at the end of the period	$55,081	$30,393

See accompanying notes to the unaudited condensed consolidated financial statements

Notes to Condensed Consolidated Financial Statements
(Unaudited)

Note 1. Description of Business

In these notes to the consolidated financial statements, the "Company," "we," "us," and "our" refers to Codexis, Inc. and its subsidiaries on a consolidated basis.

We discover, develop and sell proteins that deliver value to our clients in a growing set of industries. We view proteins as a vast untapped source of value-creating materials, and we are using our proven technologies, which we have been continuously improving over our sixteen-year history, to commercialize an increasing number of novel proteins, both as proprietary Codexis products and in partnership with our customers.

We are a pioneer in the harnessing of computational technologies to drive biology advancements. Since our inception in 2002, we have made substantial investments in the development of our CodeEvolver® protein engineering technology platform, the primary source of our competitive advantage. Our technology platform is powered by proprietary, artificial intelligence-based, computational algorithms that rapidly mine our large and continuously growing library of protein variants' performance attributes. These computational outputs enable increasingly reliable predictions for next generation protein variants to be engineered, enabling delivery of targeted performance enhancements in a time-efficient manner. In addition to its computational prowess, our CodeEvolver® protein engineering technology platform integrates additional modular competencies, including robotic high-throughput screening and genomic sequencing, organic chemistry and process development, which are all coordinated to create our novel protein innovations.

Our approach to develop commercially viable biocatalytic manufacturing processes begins by conceptually designing the most cost-effective and practical process for a targeted product. We then develop optimized protein catalysts to enable that process design, using our CodeEvolver® protein engineering platform technology. Engineered protein catalyst candidates - many thousands for each protein engineering project - are then rapidly screened and validated in high throughput under relevant manufacturing operating conditions. This approach results in an optimized protein catalyst enabling cost-efficient processes that typically are relatively simple to run in conventional manufacturing equipment. This also allows for the efficient technical transfer of our process to our manufacturing partners.

The successful embodiment of our CodeEvolver® protein engineering technology platform in commercial manufacturing processes requires well-integrated expertise in a number of technical disciplines. In addition to those directly involved in practicing our CodeEvolver® protein engineering platform technology, such as molecular biology, enzymology, microbiology, cellular engineering, metabolic engineering, bioinformatics, biochemistry and high throughput analytical chemistry, our process development projects also involve integrated expertise in organic chemistry, chemical process development, chemical engineering, fermentation process development and fermentation engineering. Our integrated, multi-disciplinary approach to biocatalyst and process development is a critical success factor for our company.

We initially commercialized our CodeEvolver® protein engineering technology platform and products in the pharmaceuticals market, which remains our primary business focus. Our customers, which include several large global pharmaceutical companies, use our technology, products and services in their manufacturing processes and process development.

We have also used the technology to develop protein catalysts for use in the fine chemicals market. The fine chemicals market consists of several large market verticals, including food and food ingredients, animal feed, flavors, fragrances and agricultural chemicals.

More recently, we have begun using the CodeEvolver® protein engineering technology platform to develop early stage, novel biotherapeutic product candidates, both for our customers and for our own business, most notably our lead program for the potential treatment of phenylketonuria ("PKU") disease in humans. PKU is an inherited metabolic disorder in which the enzyme that converts the essential amino acid phenylalanine into tyrosine is deficient. In October 2017, we entered into a Global Development, Option and License Agreement (the "Nestlé Agreement") with Nestec Ltd. ("Nestlé Health Science") and, solely for the purpose of the integration and the dispute resolution clauses of the Nestlé Agreement, Nestlé Health Science S.A., to advance CDX-6114, our enzyme biotherapeutic product candidate for the potential treatment of PKU disease.

In April 2018, we entered into a strategic collaboration (the "Porton Agreement") with Porton Pharma Solutions, Ltd. ("Porton") to license key elements of Codexis' biocatalyst technology to Porton's global custom intermediate and active pharmaceutical ingredients ("API") development and manufacturing business.

We also use our technology to develop enzymes for customers using next generation sequencing ("NGS") and polymerase chain reaction ("PCR/qPCR") for in vitro molecular diagnostic and genomic research applications.
Below are brief descriptions of our business segments (See Note 13, "Segment, Geographical and Other Revenue Information"):

Performance Enzymes

We initially commercialized our CodeEvolver® protein engineering technology platform and products in the pharmaceuticals market, and to date this continues to be our largest market served. Our customers, which include many large global pharmaceutical companies, use our technology, products and services in their manufacturing processes and process development. We have also used the technology to develop customized enzymes for use in other industrial markets. These markets consist of several large industrial verticals, including food and food ingredients, animal feed, flavors, fragrances, and agricultural chemicals. We also use our technology to develop enzymes for customers using NGS and PCR/qPCR for in vitro molecular diagnostic and molecular biology research applications. In April 2018, we entered into the Porton Agreement related to our strategic collaboration with Porton to license key elements of Codexis' world-leading biocatalyst technology for use in Porton's global custom intermediate and API development and manufacturing business.

Novel Biotherapeutics

We are also targeting new opportunities in the pharmaceutical industry to discover, improve, and/or develop biotherapeutic drug candidates. We believe that our CodeEvolver® protein engineering platform technology can be used to discover novel biotherapeutic drug candidates that will target human diseases that are in need of improved therapeutic interventions. Similarly, we believe that we can deploy our platform technology to improve specific characteristics of a customer's pre-existing biotherapeutic drug candidate, such as its activity, stability or immunogenicity. Most notable is our lead program for the potential treatment of PKU in humans. PKU is an inherited metabolic disorder in which the enzyme that converts the essential amino acid phenylalanine into tyrosine is deficient. In October 2017, we announced a strategic collaboration with Nestlé Health Science to advance CDX-6114, our own novel orally administrable enzyme therapeutic candidate for the potential treatment of PKU disease. We have also developed a pipeline of other biotherapeutic drug candidates in which we expect to continue to make additional investments with the aim of advancing additional product candidates targeting other therapeutic areas.

Note 2. Basis of Presentation and Summary of Significant Accounting Policies

Basis of Presentation and Principles of Consolidation

The accompanying unaudited condensed consolidated financial statements have been prepared in accordance with generally accepted accounting principles in the United States of America ("GAAP") and the applicable rules and regulations of the Securities and Exchange Commission ("SEC") for interim financial information. Accordingly, they do not include all of the information and notes required by GAAP for complete financial statements. These interim unaudited condensed consolidated financial statements should be read in conjunction with the consolidated financial statements and notes thereto contained in our Annual Report on Form 10-K for the year ended December 31, 2017. The condensed consolidated balance sheet at December 31, 2017 has been derived from the audited consolidated financial statements at that date, but does not include all disclosures, including notes, required by GAAP for complete financial statements.

The unaudited interim condensed consolidated financial statements have been prepared on the same basis as the audited consolidated financial statements and, in the opinion of management, reflect all adjustments of a normal recurring nature considered necessary to present fairly our financial position as of June 30, 2018 and results of our operations and comprehensive loss for the three and six months ended June 30, 2018 and 2017, and cash flows for the six months ended June 30, 2018 and 2017. The interim results are not necessarily indicative of the results for any future interim period or for the entire year. Certain prior period amounts have been reclassified to conform to current period presentation. In connection with the adoption of Accounting Standard Update ("ASU") 2016-01, "Financial Instruments-Overall: Recognition and Measurement of Financial Assets and Financial Liabilities," unrealized losses on equity investments in marketable securities, net of taxes, previously included in accumulated other comprehensive loss have been reclassified to beginning accumulated deficit. See "Recently Adopted Accounting Pronouncements" for details regarding the adoption of ASU 2016-01.

Comprehensive loss is equivalent to net loss during the three and six months ended June 30, 2018 because after adopting ASC 2016-01, we do not have any transactions recorded under comprehensive loss. Prior to our adoption of ASU 2016-01, and during the three and six months ended June 30, 2017, comprehensive loss included unrealized losses from our equity investments in marketable securities.

The unaudited interim condensed consolidated financial statements include the accounts of Codexis, Inc. and its wholly owned subsidiaries in the United States, India and the Netherlands. All significant intercompany balances and transactions have been eliminated in consolidation.

Use of Estimates

The preparation of financial statements in conformity with GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities, disclosures of contingent liabilities at the date of the condensed consolidated financial statements, and the reported amounts of revenue and expenses during the reporting period. We regularly assess these estimates which primarily affect revenue recognition, accounts receivable, inventories, the valuation of marketable securities, goodwill arising out of business acquisitions, accrued liabilities, stock awards, and the valuation allowances associated with deferred tax assets. Actual results could differ from those estimates and such differences may be material to the condensed consolidated financial statements.

Segment Reporting

We report two business segments, Performance Enzymes and Novel Biotherapeutics, which are based on our operating segments. Operating segments are defined as components of an enterprise about which separate financial information is available that is evaluated regularly by the chief operating decision maker ("CODM"), or decision making group, in deciding how to allocate resources, and in assessing performance. Our CODM is our Chief Executive Officer. Our business segments are primarily based on our organizational structure and our operating results as used by our CODM in assessing performance and allocating resources for our company. We do not allocate or evaluate assets by segment.

Previously, we had managed our business under one business segment. As our biotherapeutics business has emerged as a significant opportunity for us, effective in 2018, we formed Novel Biotherapeutics as a new business segment. The Novel Biotherapeutics segment focuses on new opportunities in the pharmaceutical industry to discover or improve novel biotherapeutic drug candidates that will target human diseases that are in need of improved therapeutic interventions. The Performance Enzymes segment consists of the existing protein catalyst products and services with focus on pharmaceutical, food, molecular diagnostics, and other industrial markets.

In the second quarter of 2018, we made a change in the segment measurement for allocating operating expenses between our two reporting segments: Performance Enzymes and Novel Biotherapeutics. This change in measurement only impacts our segment disclosures, and it has no impact on our overall consolidated financial statements. Segment results for the three and six months ended June 30, 2018 reflect the change in operating segment measurement. Refer to Note 13, "Segment, Geographical and Other Revenue Information" for more details.

Foreign Currency Translation

The United States dollar is the functional currency for our operations outside the United States. Accordingly, nonmonetary assets and liabilities originally acquired or assumed in other currencies are recorded in United States dollars at the exchange rates in effect at the date they were acquired or assumed. Monetary assets and liabilities denominated in other currencies are translated into United States dollars at the exchange rates in effect at the balance sheet date. Translation adjustments are recorded in other expense in the unaudited condensed consolidated statements of operations. Gains and losses realized from non-U.S. dollar transactions, including intercompany balances not considered as permanent investments, denominated in currencies other than an entity's functional currency are included in other expense in the accompanying unaudited condensed consolidated statements of operations.

Revenue Recognition

On January 1, 2018, we adopted the provisions of ASU 2014-09, "Revenue from Contracts with Customers (Topic 606) ("ASC 606"). The guidance provides a unified model to determine how revenue is recognized.

Our revenues are derived primarily from product revenue and collaborative research and development agreements. The majority of our contracts with customers typically contain multiple products and services. We account for individual products and services separately if they are distinct-that is, if a product or service is separately identifiable from other items in the contract and if a customer can benefit from it on its own or with other resources that are readily available to the customer.

In determining the appropriate amount of revenue to be recognized as we fulfill our obligations under our product revenue and collaborative research and development agreements, we perform the following steps: (i) identification of the promised goods or services in the contract; (ii) determination of whether the promised goods or services are performance obligations

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including whether they are distinct in the context of the contract; (iii) measurement of the transaction price, including the constraint on variable consideration; (iv) allocation of the transaction price to the performance obligations based on estimated selling prices; and (v) recognition of revenue when (or as) we satisfy each performance obligation.

The majority of our collaborative contracts contain multiple revenue streams such as up-front and/or annual license fees, fees for full time employee ("FTE") research and development services, contingent milestone payments upon achievement of contractual criteria, and royalty fees based on the licensees' product revenue or usage, among others. We determine the stand-alone selling price ("SSP") and allocate consideration to distinct performance obligations. Typically, we base our SSPs on our historical sales. If an SSP is not directly observable, then we estimate the SSP taking into consideration market conditions, forecasted sales, entity-specific factors and available information about the customer.

We account for a contract with a customer when there is approval and commitment from both parties, the rights of the parties are identified, payment terms are identified, the contract has commercial substance and collectability of consideration is probable. Non-cancellable purchase orders received from customers to deliver a specific quantity of product, when combined with our order confirmation, in exchange for future consideration, create enforceable rights and obligations on both parties and constitute a contract with a customer.

We measure revenue based on the consideration specified in the contract with each customer, net of any sales incentives and taxes collected on behalf of government authorities. We recognize revenue in a manner that best depicts the transfer of promised goods or services to the customer, when control of the product or service is transferred to a customer. We make significant judgments when determining the appropriate timing of revenue recognition.

The following is a description of principal activities from which we generate revenue:

Product Revenue

Product revenue consist of sales of protein catalysts, pharmaceutical intermediates and Codex® Biocatalyst Panels and Kits. A majority of our product revenue is made pursuant to purchase orders or supply agreements and is recognized at a point in time when the control of the product has been transferred to the customer typically upon shipment. For some of the products that we develop, we recognize revenue over time as we have a right to payment from the customer under a binding, non-cancellable purchase order, and there is no alternate use of the product for us as it is specifically made for the customer’s use.

Certain of our agreements provide options to customers which they can exercise at a future date, such as the option to purchase our product during the contract duration at discounted prices and an option to extend their contract, among others. In accounting for customer options, we determine whether an option is a material right and this requires us to exercise significant judgment. If a contract provides the customer an option to acquire additional goods or services at a discount that exceeds the range of discounts that we typically give for that product or service, or if the option provides the customer certain additional goods or services for free, the option may be considered a material right. If the contract gives the customer the option to acquire additional goods or services at their normal SSPs, we would likely determine that the option is not a material right and, therefore, account for it as a separate performance obligation when the customer exercises the option. We primarily account for options which provide material rights using the alternative approach available under ASC 606, as we concluded we meet the criteria for using the alternative approach. Therefore, the transaction price is calculated as the expected consideration to be received for all the goods and services we expect to provide. We update the transaction price for expected consideration, subject to constraint, each reporting period if our estimate of future goods to be ordered by customers change.

Research and Development Revenue

We perform research and development activities as specified in each respective customer agreement. We identify each performance obligation in our research and development agreements at contract inception. We allocate the consideration to each distinct performance obligation based on the estimated SSP of each performance obligation. Performance obligations included in our research and services agreements typically include research and development services for a specified term, periodic reports and small samples of enzyme produced.

The majority of our research and development agreements are based on a contractual rate per FTE working on the project. The underlying product that we develop for customers does not create an asset with an alternative use to us and the customer receives benefits as we perform the work towards completion. Thus, our performance obligations are generally satisfied over time as the service is performed. We utilize an appropriate method of measuring progress towards the completion of our performance obligations to determine the timing of revenue recognition. For each performance obligation that is satisfied over time, we recognize revenue using a single measure of progress, typically based on FTE hours incurred.

Our contracts frequently provide customers with rights to use or access our products or technology, along with other promises or performance obligations. Under ASC 606, we must first determine whether the license is distinct from other promises, such as our promise to manufacture a product. If we determine that the customer cannot benefit from the license without our manufacturing capability, the license will be accounted for as combined with the other performance obligations. If we determine that a license is distinct, we would recognize revenues from non-refundable, up-front license fees when the license is transferred to the customer, and the customer can use and benefit from it. We estimate the SSP for license rights by using an income approach model which includes the following key assumptions: the development timelines, revenue forecasts, commercialization expenses, discount rate, and the probability of technical and regulatory success. For licenses that have been previously sold to other customers, we use historical information to determine SSP.

At the inception of each arrangement that includes variable consideration such as development milestone payments, we evaluate whether the milestones are considered probable of being reached and estimate the amount to be included in the transaction price using the most likely amount method. If it is probable that a significant revenue reversal would not occur, the associated milestone value is included in the transaction price. Milestone payments that are not within our control or the licensee, such as regulatory approvals, are not considered probable of being achieved until those approvals are received. The transaction price is then allocated to each performance obligation on a relative stand-alone selling price basis, for which we recognize revenue as or when the performance obligations under the contract are satisfied. At the end of each subsequent reporting period, we re-evaluate the probability of achievement of such development milestones and any related constraint, and if necessary, adjust our estimate of the overall transaction price. Any such adjustments are recorded on a cumulative catch-up basis, which would affect license, collaboration and other revenues and earnings in the period of adjustment.

Our CodeEvolver® platform technology transfer collaboration agreements typically include license fees, upfront fees, and variable consideration in the form of milestone payments, and sales or usage-based royalties. We recognize revenues from our platform technology transfer agreements over time as our customer learns to use our technology. For agreements that include sales or usage-based royalty payments to us, we do not recognize revenue until the underlying sales of the product or usage has occurred. At the end of each reporting period, we estimate the royalty amount. We recognize revenue at the later of (i) when the related sale of the product occurs, or (ii) when the performance obligation to which some or all of the royalty has been allocated has been satisfied, or partially satisfied.

Contract Assets

Contract assets include amounts related to our contractual right to consideration for completed performance obligations not yet invoiced. The contract assets are reclassified to receivables when the rights become unconditional.

Contract Liabilities

Contract liabilities are recorded as deferred revenues and include payments received in advance of performance under the contract. Contract liabilities are realized when the development services are provided to the customer or control of the products has been transferred to the customer. A portion of our contract liabilities relate to supply arrangements that contain material rights that are recognized using the alternative method, under which the aggregate amount invoiced to the customer for shipped products, including annual fees, is higher than the amount of revenue recognized based on the transaction price allocated to the shipped products.

Contract Costs

ASC 606 requires the recognition of an asset for the incremental costs of obtaining a contract with a customer if the entity expects to recover such costs. Incremental costs are costs that would not have been incurred if the contract had not been obtained. Examples of contract costs are commissions paid to sales personnel. We do not typically incur significant incremental costs because the compensation of our salespeople are not based on contracts closed but on a mixture of company goals, individual goals, and sales goals. If a commission paid is directly related to obtaining a specific contract, our policy is to capitalize and amortize such costs over the estimated life of the contract.

Contract costs are reported in other non-current assets.

Cost of Product Revenue

Cost of product revenue comprises both internal and third party fixed and variable costs including materials and supplies, labor, facilities, and other overhead costs associated with our product sales. Shipping costs are included in our cost of product revenue. Such charges were not significant in any of the periods presented.

Fulfillment costs, such as shipping and handling, are recognized at a point in time and are included in cost of product sales.

Cost of Research and Development Services

Cost of research and development services related to FTE services under research and development agreements approximate the research funding over the term of the respective agreements and is included in research and development expense. Costs of services provided under license and platform technology transfer agreements are included in research and development expenses and are expensed in the periods in which such costs are incurred.

Research and Development Expenses

Research and development expenses consist of costs incurred for internal projects and partner-funded collaborative research and development activities, as well as license and platform technology transfer agreements, as mentioned above. These costs include our direct and research-related overhead expenses, which include salaries and other personnel-related expenses (including stock-based compensation), occupancy-related costs, supplies, depreciation of facilities and laboratory equipment and amortization of acquired technologies, as well as external costs, and are expensed as incurred. Costs to acquire technologies that are utilized in research and development and that have no alternative future use are expensed when incurred.

Advertising

Advertising costs are expensed as incurred and included in selling, general and administrative expenses in the unaudited condensed consolidated statements of operations. Advertising costs were $0.1 million for the three months ended June 30, 2018 and 2017 and $0.2 million for the six months ended June 30, 2018 and 2017.

Stock-Based Compensation

We use the Black-Scholes-Merton option pricing model to estimate the fair value of options granted under our equity incentive plans. The Black-Scholes-Merton option pricing model requires the use of assumptions, including the expected term of the award and the expected stock price volatility. The expected term is based on historical exercise behavior on similar awards, giving consideration to the contractual terms, vesting schedules and expectations of future employee behavior. We use historical volatility to estimate expected stock price volatility. The risk-free rate assumption is based on United States Treasury instruments whose terms are consistent with the expected term of the stock options. The expected dividend assumption is based on our history and expectation of dividend payouts.

Restricted Stock Units ("RSUs"), Restricted Stock Awards ("RSAs"), performance based options ("PBOs"), and performance-contingent restricted stock units ("PSUs") are measured based on the fair market values of the underlying stock on the dates of grant. The vesting of PBOs and PSUs awarded is conditioned upon the attainment of one or more performance objectives over a specified period and upon continued employment through the applicable vesting date. At the end of the performance period, shares of stock subject to the PBOs and PSUs vest based upon both the level of achievement of performance objectives within the performance period and continued employment through the applicable vesting date.

Stock-based compensation expense is calculated based on awards ultimately expected to vest and is reduced for estimated forfeitures at the time of grant and revised, if necessary, in subsequent periods if actual forfeitures differ from those estimates. The estimated annual forfeiture rates for stock options, RSUs, PSUs, PBOs, and RSAs are based on historical forfeiture experience.

The estimated fair value of stock options, RSUs, and RSAs are expensed on a straight-line basis over the vesting term of the grant and the estimated fair value of PSUs and PBOs are expensed using an accelerated method over the term of the award once management has determined that it is probable that the performance objective will be achieved. Compensation expense is recorded over the requisite service period based on management's best estimate as to whether it is probable that the shares awarded are expected to vest. Management assesses the probability of the performance milestones being met on a continuous basis.

Cash and Cash Equivalents

We consider all highly liquid investments with maturity dates of three months or less at the date of purchase to be cash equivalents. Our cash and cash equivalents consist of cash on deposit with banks and money market funds. The majority of cash and cash equivalents is maintained with major financial institutions in North America. Deposits with these financial institutions may exceed the amount of insurance provided on such deposits. Cash and cash equivalents totaled $53.6 million at June 30, 2018 and were comprised of cash of $22.7 million and money market funds of $30.9 million. At December 31, 2017, cash and cash equivalents totaled $31.2 million and were comprised of cash of $24.4 million and money market funds of $6.8 million.

Restricted Cash

In 2016, we began the process of liquidating our Indian subsidiary. The local legal requirements for liquidation required us to maintain our subsidiary's cash balance in an account managed by a legal trustee to satisfy our financial obligations. This balance is recorded as non-current restricted cash on the consolidated balance sheets and totaled $0.8 million at June 30, 2018 and December 31, 2017.

In addition, pursuant to the terms of the lease agreement for our Redwood City, CA facilities, our letters of credit are collateralized by deposit balances of $0.7 million as of June 30, 2018 and December 31, 2017, which is recorded as non-current restricted cash on the unaudited condensed consolidated balance sheets (see Note 11, "Commitments and Contingencies" for details).

Marketable Securities

We invest in equity securities that are carried at estimated fair value (see Note 6, "Cash Equivalents and Marketable Securities"), with changes in fair value recognized within earnings. Equity securities with remaining maturities of greater than one year or which we currently do not intend to sell are classified as long-term.

Unrealized holding gains and losses (the adjustment to fair value) and realized gains and losses are included in other income (expense) in the unaudited condensed consolidated statement of operations.

Fair Value Measurements

Fair value is defined as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. In determining fair value, we utilize valuation techniques that maximize the use of observable inputs and minimize the use of unobservable inputs to the extent possible and we consider counterparty credit risk in our assessment of fair value. Carrying amounts of financial instruments, including cash equivalents, marketable investments, accounts receivable, accounts payable, and accrued liabilities, approximate their fair values as of the balance sheet dates because of their short maturities.

The fair value hierarchy distinguishes between (1) market participant assumptions developed based on market data obtained from independent sources (observable inputs) and (2) an entity's own assumptions about market participant assumptions developed based on the best information available in the circumstances (unobservable inputs). The fair value hierarchy consists of three broad levels, giving the highest priority to unadjusted quoted prices in active markets for identical assets or liabilities (Level 1) and the lowest priority to unobservable inputs (Level 3). The three levels of the fair value hierarchy are described below:

- Level 1: Inputs that are unadjusted, quoted prices in active markets for identical assets or liabilities at the measurement date.
- Level 2: Inputs that are either directly or indirectly observable for the asset or liability through correlation with market data at the measurement date and for the duration of the instrument’s anticipated life.
- Level 3: Unobservable inputs that are supported by little or no market activity and that are significant to the fair value of the assets or liabilities and which reflect management’s best estimate of what market participants would use in pricing the asset or liability at the measurement date.

See Note 7, "Fair Value Measurements" to our unaudited condensed consolidated financial statements.

Concentrations of Credit Risk

Financial instruments that potentially subject us to significant concentrations of credit risk consist primarily of cash and cash equivalents, accounts receivable, marketable securities, and restricted cash. Cash that is not required for immediate operating needs is invested principally in money market funds. Cash and cash equivalents are invested through banks and other

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financial institutions in the United States, India, and the Netherlands. Such deposits in those countries may be in excess of insured limits.

Accounts Receivable and Allowance for Doubtful Accounts

We currently sell primarily to pharmaceutical and fine chemicals companies throughout the world by the extension of trade credit terms based on an assessment of each customer's financial condition. Trade credit terms are generally offered without collateral and may include a discount for prompt payment for specific customers. To manage our credit exposure, we perform ongoing evaluations of our customers' financial conditions. In addition, accounts receivable includes amounts owed to us under our collaborative research and development agreements. We recognize accounts receivable at invoiced amounts and we maintain a valuation allowance for doubtful accounts.

We estimate an allowance for doubtful accounts through specific identification of potentially uncollectible accounts receivable based on an analysis of our accounts receivable aging. Uncollectible accounts receivable are written off against the allowance for doubtful accounts when all efforts to collect them have been exhausted. Recoveries are recognized when they are received. Actual collection losses may differ from our estimates and could be material to our consolidated financial position, results of operations, and cash flows.

Inventories

Inventories are stated at the lower of cost or net realizable value. Cost is determined using a weighted-average approach, assuming full absorption of direct and indirect manufacturing costs, or based on cost of purchasing from our vendors. If inventory costs exceed expected net realizable value due to obsolescence or lack of demand, valuation adjustments are recorded for the difference between the cost and the expected net realizable value. These valuation adjustments are determined based on significant estimates.

Concentrations of Supply Risk

We rely on a limited number of suppliers for our products. We believe that other vendors would be able to provide similar products; however, the qualification of such vendors may require substantial start-up time. In order to mitigate any adverse impacts from a disruption of supply, we attempt to maintain an adequate supply of critical single-sourced materials. For certain materials, our vendors maintain a supply for us. We outsource the large scale manufacturing of our products to contract manufacturers with facilities in Austria and Italy.

Impairment of Long-Lived Assets

Our long-lived assets consist of property and equipment.

We evaluate the carrying value of long-lived assets, including property and equipment, whenever events, changes in business circumstances or our planned use of long-lived assets indicate that their carrying amounts may not be fully recoverable or that their useful lives are no longer appropriate. If these facts and circumstances exist, we assess for recovery by comparing the carrying values of long-lived assets with their future net undiscounted cash flows. If the comparison indicates that impairment exists, long-lived assets are written down to their respective fair values based on discounted cash flows. Significant management judgment is required in the forecast of future operating results that are used in the preparation of unexpected undiscounted cash flows.

As of June 30, 2018 and December 31, 2017, there were no events or changes in circumstances which indicated that the carrying amount of our long-lived assets might not be recoverable. No impairment charges for long-lived assets were recorded during the six months ended June 30, 2018 and 2017.

Goodwill

As of June 30, 2018 and December 31, 2017, the carrying amount of our goodwill was $3.2 million. All of our goodwill relates to the Performance Enzymes segment. There were no indicators of impairment identified related to our Performance Enzymes segment during the six months ended June 30, 2018 and 2017.

Income Taxes

We use the liability method of accounting for income taxes, whereby deferred tax asset or liability account balances are calculated at the balance sheet date using current tax laws and rates in effect for the year in which the differences are expected to affect taxable income. Valuation allowances are provided when necessary to reduce deferred tax assets to the amount that will more likely than not be realized.

We make certain estimates and judgments in determining income tax expense for financial statement purposes. These estimates and judgments occur in the calculation of tax credits, benefits and deductions and in the calculation of certain tax assets and liabilities, which arise from differences in the timing of recognition of revenue and expenses for tax and financial statement purposes. Significant changes to these estimates may result in an increase or decrease to our tax provision in a subsequent period.

In assessing the realizability of deferred tax assets, we consider whether it is more likely than not that some portion or all of the deferred tax assets will be realized on a jurisdiction by jurisdiction basis. The ultimate realization of deferred tax assets is dependent upon the generation of taxable income in the future. We have recorded a valuation allowance against these deferred tax assets in jurisdictions where ultimate realization of deferred tax assets is more likely than not to occur. As of June 30, 2018 and December 31, 2017, we maintained a full valuation allowance in all jurisdictions against the net deferred tax assets as we believe that it is more likely than not that the majority of deferred tax assets will not be realized.

We make estimates and judgments about our future taxable income that are based on assumptions that are consistent with our plans and estimates. Should the actual amounts differ from our estimates, the amount of our valuation allowance may be materially impacted. Any adjustment to the deferred tax asset valuation allowance would be recorded in the income statement for the periods in which the adjustment is determined to be required.

We account for uncertainty in income taxes as required by the provisions of ASC Topic 740, which clarifies the accounting for uncertainty in income taxes recognized in an enterprise’s financial statements. The first step is to evaluate the tax position for recognition by determining if the weight of available evidence indicates that it is more likely than not that the position will be sustained on audit, including resolution of related appeals or litigation processes, if any. The second step is to estimate and measure the tax benefit as the largest amount that is more than 50% likely of being realized upon ultimate settlement. It is inherently difficult and subjective to estimate such amounts, as this requires us to determine the probability of various possible outcomes. We consider many factors when evaluating and estimating our tax positions and tax benefits, which may require periodic adjustments and may not accurately anticipate actual outcomes.

The Tax Reform Act of 1986 and similar state provisions limit the use of net operating loss ("NOL") carryforwards in certain situations where equity transactions result in a change of ownership as defined by Internal Revenue Code Section 382. In the event we should experience such a change of ownership, utilization of our federal and state NOL carryforwards could be limited.

The adoption of ASC 606 primarily resulted in less revenue recognized as of January 1, 2018, which in turn generated a decrease in net deferred tax assets. As we fully reserve our net deferred tax assets in the jurisdictions impacted by the adoption of ASC 606, this impact was offset by a corresponding decrease to the valuation allowance.

We recognized income tax benefit of $11 thousand and $13 thousand for the three and six months ended June 30, 2018, respectively. We recognized income tax benefit of $42 thousand and $18 thousand for three and six months ended June 30, 2017, respectively. The income tax benefits were due to decreases in income from our foreign operations. We continue to maintain a full valuation allowance against our net deferred tax assets as we believe that it is more likely than not that the majority of our deferred tax assets will not be realized.

Changes to Tax Law

On December 22, 2017, the Tax Cuts and Jobs Act of 2017 (the "Tax Act") was signed into law making significant changes to the Internal Revenue Code. The Tax Act makes broad and complex changes to the U.S. tax code, including, but not limited to, (i) reducing the U.S. federal statutory tax rate from 35% to 21%; (ii) requiring companies to pay a one-time transition tax on certain un-repatriated earnings of foreign subsidiaries; (iii) generally eliminating U.S. federal income taxes on dividends from foreign subsidiaries; (iv) requiring a current inclusion in U.S. federal taxable income of certain earnings of controlled foreign corporations; (v) eliminating the corporate alternative minimum tax ("AMT") and changing how existing AMT credits can be realized; (vi) creating the base erosion anti-abuse tax ("BEAT"), a new minimum tax; (vii) creating a tax on global intangible low-taxed income ("GILTI") of foreign subsidiaries; (viii) creating a new limitation on deductible interest expense; (ix) changing rules related to uses and limitations of net operating loss carryforwards created in tax years beginning after December 31, 2017; and (x) modifying the officer’s compensation limitation.

In December 2017, the SEC issued Staff Accounting Bulletin No. 118 ("SAB 118"), which provided a measurement period of up to one year from the enactment date of the Tax Act for companies to complete the accounting for the Tax Act and its related impacts. The income tax effects of the Tax Act for which the accounting is incomplete include: the impact of the transition tax, the revaluation of deferred tax assets and liabilities to reflect the 21% corporate tax rate, and the impact to the aforementioned items on state income taxes. We have made reasonable provisional estimates for each of these items; however these estimates may be affected by other analyses related to the Tax Act, including but not limited to, any deferred adjustments related to the filing of our 2017 federal and state income tax returns and further guidance yet to be issued. As of June 30, 2018, we have not made any additional measurement period adjustments.

Because ASC 740-10-25-47 requires the effect of a change in tax laws or rates to be recognized as of the date of enactment, we remeasured our deferred tax assets and liabilities, and offsetting valuation allowance in the current period. There was no impact to tax expense as the remeasurement of net deferred tax assets was completely offset by a corresponding change in valuation allowance. The provisional reduction to U.S. deferred tax assets and the offsetting valuation allowance was $34.1 million. While we were able to make a reasonable estimate of the impact of the reduction in corporate rate, this estimate may be affected by other analyses related to the Tax Act, including, but not limited to, any deferred adjustments related to the filing of our 2017 federal and state tax returns and our calculation of the state tax effect of adjustments made to federal temporary differences. We have not yet completed our calculation of the total post-1986 foreign earnings and profits ("E&P") for our foreign subsidiaries as E&P will not be finalized until the federal income tax return is filed. However, we have prepared a provisional estimate and do not expect to incur a taxable income inclusion from the deemed repatriation of accumulated foreign earnings due to an accumulated deficit in foreign earnings and profits.

The GILTI provisions in the Tax Act will require us to include, in our U.S. income tax return, foreign subsidiary earnings in excess of an allowable return on the foreign subsidiary’s tangible assets. We are currently assessing the GILTI provisions and have not yet selected an accounting policy for its application; however, we do not anticipate that it will have a material impact on our future tax expense as the operations of our non-U.S. subsidiaries are not significant.

The BEAT provisions in the Tax Act eliminates the deduction of certain base-erosion payments made to related foreign corporations, and imposes a minimum base erosion anti-abuse tax if greater than regular tax. We do not expect to be subject to this tax based on our assessment of the BEAT provisions.

Recently Adopted Accounting Pronouncements

In May 2014, the FASB issued ASU 2014-09, "Revenue from Contracts with Customers (Topic 606)" ("ASC 606"), amending revenue recognition guidance and requiring more detailed disclosures to enable users of financial statements to understand the nature, amount, timing, and uncertainty of revenue and cash flows arising from contracts with customers is effective for annual and interim reporting periods beginning after December 15, 2017, with early adoption permitted for public companies effective for annual and interim reporting periods beginning after December 15, 2016. We have adopted ASC 606, effective January 1, 2018, using the modified retrospective transition method. We recognized the cumulative effect of applying the new revenue standard as an adjustment to the opening balance of retained earnings at the beginning of 2018. The comparative information has not been restated and continues to be reported under the accounting standards in effect for the period presented. See Note 3, "Revenue Recognition" for more details.

In January 2016, the FASB issued ASU No. 2016-01, "Financial Instruments-Overall: Recognition and Measurement of Financial Assets and Financial Liabilities." This guidance principally affects accounting standards for equity investments, financial liabilities where the fair value option has been elected, and the presentation and disclosure requirements for financial instruments. Upon the effective date of this new guidance, all equity investments in unconsolidated entities, other than those accounted for using the equity method of accounting, will generally be measured at fair value through earnings. There will no longer be an available-for-sale classification and therefore no changes in fair value will be reported in other comprehensive income (loss) for equity securities with readily determinable fair values. This new guidance primarily impacts our accounting for equity investments. In February

2018, the FASB issued ASU 2018-03, "Technical Corrections and Improvements to Financial Instruments—Overall (Subtopic 825-10): Recognition and Measurement of Financial Assets and Financial Liabilities, that clarifies the guidance in ASU No. 2016-01, Financial Instruments—Overall (Subtopic 825-10)." Prior to the adoption of ASU 2016-01, we recognized unrealized holding gains and losses from our equity investment in CO_2 Solutions in other comprehensive loss. We adopted ASU 2016-01 in the first quarter of 2018 using a modified retrospective approach by means of a cumulative-effect adjustment to accumulated deficit. Upon adoption of ASU 2016-01, we reclassified $0.5 million of unrealized loss (net of $0.6 million tax) from other accumulated comprehensive loss to beginning accumulated deficit. Any changes in the fair value of our equity investments, except those accounted for under the equity method, will be recognized in earnings on a prospective basis.

In August 2016, the FASB issued ASU 2016-15, "Statement of Cash Flows (Topic 230): Classification of Certain Cash Receipts and Cash Payments," which provides the FASB's guidance on certain cash flow statements items. ASU 2016-15 is effective for fiscal reporting periods beginning after December 15, 2017, including interim periods within those fiscal years. We adopted ASU 2016-15 in the first quarter of 2018, and the adoption had no impact on our unaudited condensed consolidated financial statements.

In November 2016, the FASB issued ASU No. 2016-18, "Statement of Cash Flows (Topic 230) Restricted Cash a consensus of the FASB Emerging Issues Task Force." The standard requires restricted cash and restricted cash equivalents to be included with cash and cash equivalents on the statement of cash flows. We adopted ASU 2016-18 in the first quarter of 2018 and the adoption had no material impact on our unaudited condensed consolidated financial statements. The effect of the adoption of ASU 2016-18 on our unaudited condensed consolidated statements of cash flows was to include restricted cash balances in the beginning and end of period balances of cash and cash equivalents and restricted cash. The change in restricted cash was previously disclosed in operating and investing activities in the unaudited condensed consolidated statements of cash flows.

In January 2017, the FASB issued ASU No. 2017-01 "Business Combinations (Topic 805): Clarifying the Definition of a Business." The guidance requires the use of a framework to determine whether a set of assets and activities constitutes an acquired or a sold business. The guidance is effective for fiscal reporting periods beginning after December 15, 2017, including interim periods within those fiscal years. The amendments should be applied prospectively as of the beginning of the period of adoption. We adopted ASU 2017-01 in the first quarter of 2018, and the adoption had no impact on our unaudited condensed consolidated financial statements.

In May 2017, the FASB issued ASU No. 2017-09, "Compensation-Stock Compensation (Topic 718): Scope of Modification Accounting." The amendments provide guidance on determining which changes to the terms and conditions of share-based payment awards require an entity to apply modification accounting under Topic 718. The new standard is effective for annual periods, including interim periods within those annual periods, beginning after December 15, 2017 with early adoption permitted. We adopted ASU 2017-09 in the first quarter of 2018 and the adoption had no impact on our unaudited condensed consolidated financial statements.

Recently Issued Accounting Pronouncements

From time to time, new accounting pronouncements are issued by the FASB or other standards setting bodies that are adopted by us as of the specified effective date. Unless otherwise discussed, we believe that the impact of recently issued standards that are not yet effective will not have a material impact on our consolidated financial statements upon adoption.

In February 2016, the FASB issued ASU 2016-02, "Leases (Topic 842)," which replaces prior lease guidance (Topic 840). This guidance establishes a right-of-use ("ROU") model that requires a lessee to record a ROU asset and lease liability on the balance sheet for all leases with terms longer than 12 months. Leases will be classified as either finance or operating, with classification affecting the pattern of expense recognition in the Consolidated Statement of Operations. The guidance also eliminates today’s real estate-specific provisions for all entities. For lessors, the guidance modifies the classification criteria and the accounting for sales-type and direct financing leases. Entities are required to use a modified retrospective approach for leases that exist or are entered into after the beginning of the earliest comparative period in the financial statements. Entities have the option to use certain practical expedients. Full retrospective application is prohibited. This ASU is effective for public business entities for fiscal years beginning after December 15, 2018, and interim periods within those fiscal years. Early adoption is permitted. We are currently evaluating the impact of this accounting standards update on our Consolidated Financial Statements. We expect that upon adoption, ROU assets and lease liabilities will be recognized in the balance sheet in amounts that will be material.

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 FASB's guidance on the impairment of financial instruments. The ASU adds to GAAP an impairment model (known as the "current expected credit loss model") that is based on expected losses rather than incurred losses. ASU 2016-13 is effective for annual reporting periods ending after December 15, 2019, including interim periods within those fiscal years. Early adoption is permitted for fiscal years beginning after December 15, 2018, including interim periods within those fiscal years. The adoption of ASU 2016-13 is not expected to have a material impact on our consolidated financial statements and related disclosures.

In January 2017, the FASB issued ASU No. 2017-04, "Intangibles - Goodwill and Other (Topic 350): Simplifying the Test for Goodwill Impairment." The amendments eliminate Step 2 from the goodwill impairment test. The annual, or interim, goodwill impairment test is performed by comparing the fair value of a reporting unit with its carrying amount. An impairment charge should be recognized for the amount by which the carrying amount exceeds the reporting unit's fair value; however, the loss recognized should not exceed the total amount of goodwill allocated to that reporting unit. In addition, income tax effects from any tax deductible goodwill on the carrying amount of the reporting unit should be considered when measuring the goodwill impairment loss, if applicable. The amendments also eliminate the requirements for any reporting unit with a zero or negative carrying amount to perform a qualitative assessment and, if it fails that qualitative test, to perform Step 2 of the goodwill impairment test. An entity still has the option to perform the qualitative assessment for a reporting unit to determine if the quantitative impairment test is necessary. The new standard is effective for fiscal years beginning after December 15, 2019, with early adoption permitted. We do not expect the adoption of ASU 2017-04 to have a material impact on our consolidated financial statements and related disclosures.

In February 2018, the FASB issued ASU No. 2018-02, Income Statement - Reporting Comprehensive Income (Topic 220) - Reclassification of Certain Tax Effects from Accumulated Other Comprehensive Income. This standard allows a reclassification from accumulated other comprehensive income to retained earnings for stranded tax effects resulting from the Tax Cuts and Jobs Act and requires certain disclosures about stranded tax effects. This standard will be effective for us beginning January 1, 2019 and should be applied either in the period of adoption or retrospectively. Early adoption is permitted.
We do not expect this standard to have any impact on our consolidated financial statements.

In June 2018, the FASB issued ASU 2018-07, "Compensation-Stock Compensation (Topic 718): Improvements to Nonemployee Share-Based Payment Accounting". These amendments expand the scope of Topic 718, Compensation—Stock Compensation (which currently only includes share-based payments to employees) to include share-based payments issued to nonemployees for goods or services. Consequently, the accounting for share-based payments to nonemployees and employees will be substantially aligned. The ASU supersedes Subtopic 505-50, Equity—Equity-Based Payments to Non-Employees. The new standard is effective for fiscal years beginning after December 15, 2018, with early adoption permitted. We do not expect the adoption of ASU 2018-07 to have a material impact on our consolidated financial statements and related disclosures.

Note 3. Revenue Recognition

On January 1, 2018, we adopted Topic 606, applying the modified retrospective method to all contracts that were not completed as of that date. Results for reporting periods beginning after January 1, 2018 are presented under Topic 606, while prior period results are not adjusted and continue to be reported under the accounting standards in effect for the prior period. We recorded an increase to opening accumulated deficit of $4.1 million as of January 1, 2018 due to the cumulative impact of adopting Topic 606. The impact on revenue for the three and six months ended June 30, 2018 was an increase of $1.6 million and $5.4 million, respectively, as a result of adopting Topic 606. The increase in revenues from the adoption of ASC 606 was primarily due to revenue from a product that was recognized over time as we have a right to payment from the customer under a binding, non-cancellable purchase order, and there is no alternate use of the product for us as it is specifically for the customer's use, and revenues from research and development contracts that were recognized when we had the right to invoice our customers for monthly services completed to date. Also revenue from a distinct, functional license granted on January 1, 2018 contributed to the increase in revenue from the adoption of ASC 606.

Disaggregation of Revenue

The following table provides information about disaggregated revenue from contracts with customers into the nature of the products and services, and geographic regions, and includes a reconciliation of the disaggregated revenue with reportable segments. The geographic regions that are tracked are the Americas (United States, Canada, Latin America), EMEA (Europe, Middle East, Africa), and APAC (Australia, New Zealand, Southeast Asia, China).

	Three months ended June 30, 2018			Three months ended June 30, 2017		
(in thousands)	Performance Enzymes	Novel Biotherapeutics	Total	Performance Enzymes	Novel Biotherapeutics	Total
Major products and service:						
Product Revenue	$3,723	$ —	$3,723	$6,600	$ —	$6,600
Research and development revenue	7,442	2,373	9,815	3,747	—	3,747
Total revenues	$11,165	$ 2,373	$13,538	$10,347	$ —	$10,347
Primary geographical markets:						
Americas	$6,058	$ —	$6,058	$4,401	$ —	$4,401
EMEA	1,435	2,373	3,808	1,959	—	1,959
APAC	3,672	—	3,672	3,987	—	3,987
Total revenues	$11,165	$ 2,373	$13,538	$10,347	$ —	$10,347

	Six months ended June 30, 2018			Six months ended June 30, 2017		
(in thousands)	Performance Enzymes	Novel Biotherapeutics	Total	Performance Enzymes	Novel Biotherapeutics	Total
Major products and service:						