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

FORM 10-Q

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

For the quarterly period ended June 30, 2021

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 000-14656

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

Delaware	**04-2729386**
(State or Other Jurisdiction of Incorporation or Organization)	**(I.R.S. Employer Identification No.)**
41 Seyon Street, Bldg. 1, Suite 100 Waltham, MA	**02453**
(Address of Principal Executive Offices)	**(Zip Code)**

(781) 250-0111
Registrant's Telephone Number, Including Area Code

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

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common Stock, par value $0.01 per share	**RGEN**	**The Nasdaq Global Select Market**

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 ☒

The number of shares outstanding of the registrant's common stock on July 23, 2021 was 54,977,179.

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PART I – FINANCIAL INFORMATION

ITEM 1. Financial Statements

REPLIGEN CORPORATION
CONSOLIDATED BALANCE SHEETS
(Unaudited, amounts in thousands, except share data)

	June 30, 2021	December 31, 2020
ASSETS		
Current assets:		
Cash and cash equivalents	$ 734,327	$ 717,292
Accounts receivable, net of reserves of $1,049 and $762 at June 30, 2021 and December 31, 2020, respectively	102,659	71,389
Inventories, net	135,509	95,025
Prepaid expenses and other current assets	11,335	18,676
Total current assets	983,830	902,382
Noncurrent assets:		
Property, plant and equipment, net	85,491	66,870
Intangible assets, net	276,549	287,100
Goodwill	617,593	618,305
Deferred tax assets	1,714	2,481
Operating lease right of use assets	50,178	25,176
Other noncurrent assets	610	573
Total noncurrent assets	1,032,135	1,000,505
Total assets	$ 2,015,965	$ 1,902,887
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Accounts payable	$ 24,903	$ 16,880
Operating lease liability	4,243	5,254
Accrued liabilities	53,773	53,085
Convertible Senior Notes, current portion, net	249,423	243,737
Total current liabilities	332,342	318,956
Noncurrent liabilities:		
Deferred tax liabilities	26,760	27,032
Noncurrent operating lease liability	52,323	26,425
Other noncurrent liabilities	1,471	1,324
Total noncurrent liabilities	80,554	54,781
Total liabilities	412,896	373,737
Commitments and contingencies (Note 9)		
Stockholders' equity:		
Preferred stock, $0.01 par value, 5,000,000 shares authorized, no shares issued or outstanding	—	—
Common stock, $0.01 par value; 80,000,000 shares authorized; 54,969,481 shares at June 30, 2021 and 54,760,837 shares at December 31, 2020 issued and outstanding	550	548
Additional paid-in capital	1,475,436	1,460,748
Accumulated other comprehensive (loss) income	(4,369)	2,085
Retained earnings	131,452	65,769
Total stockholders' equity	1,603,069	1,529,150
Total liabilities and stockholders' equity	$ 2,015,965	$ 1,902,887

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

REPLIGEN CORPORATION
CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME
(Unaudited, amounts in thousands, except per share data)

	Three Months Ended June 30,		Six Months Ended June 30,	
	2021	2020	2021	2020
Revenue:				
Products	$162,920	$87,432	$305,657	$163,492
Royalty and other revenue	40	30	140	60
Total revenue	162,960	87,462	305,797	163,552
Costs and operating expenses:				
Cost of product revenue	61,990	36,863	121,737	68,845
Research and development	8,389	4,336	16,001	9,038
Selling, general and administrative	44,341	26,726	83,436	54,226
Total costs and operating expenses	114,720	67,925	221,174	132,109
Income from operations	48,240	19,537	84,623	31,443
Other income (expenses):				
Investment income	41	253	93	1,617
Interest expense	(3,144)	(3,004)	(6,250)	(5,980)
Other expenses	(779)	(766)	(1,003)	(384)
Other expenses, net	(3,882)	(3,517)	(7,160)	(4,747)
Income before income taxes	44,358	16,020	77,463	26,696
Income tax provision	8,125	159	11,780	1,020
Net income	$ 36,233	$15,861	$ 65,683	$ 25,676
Earnings per share:				
Basic	$ 0.66	$ 0.30	$ 1.20	$ 0.49
Diluted	$ 0.64	$ 0.30	$ 1.16	$ 0.48
Weighted average common shares outstanding:				
Basic	54,931	52,381	54,868	52,260
Diluted	56,786	53,306	56,824	53,213
Net income	$ 36,233	$15,861	$ 65,683	$ 25,676
Other comprehensive income (loss):				
Foreign currency translation adjustment	3,125	6,493	(6,454)	914
Comprehensive income	$ 39,358	$22,354	$ 59,229	$ 26,590

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

REPLIGEN CORPORATION
CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY
(Unaudited, amounts in thousands, except share data)

	Six Months Ended June 30, 2021					
	Common Stock					
	Number of Shares	Par Value	Additional Paid-In Capital	Accumulated Other Comprehensive Income (Loss)	Retained Earnings	Total Stockholders' Equity
Balance at December 31, 2020	54,760,837	$ 548	$ 1,460,748	$ 2,085	$ 65,769	$ 1,529,150
Net income	—	—	—	—	65,683	65,683
Issuance of common stock for debt conversion	3	0	1	—	—	1
Exercise of stock options and vesting of stock units	208,641	2	858	—	—	860
Stock-based compensation expense	—	—	13,684	—	—	13,684
True up of costs related to the December 2020 issuance of common stock	—	—	145			145
Translation adjustment	—	—	—	(6,454)	—	(6,454)
Balance at June 30, 2021	54,969,481	$ 550	$ 1,475,436	$ (4,369)	$ 131,452	$ 1,603,069

	Three Months Ended June 30, 2021					
	Common Stock					
	Number of Shares	Par Value	Additional Paid-In Capital	Accumulated Other Comprehensive Loss	Retained Earnings	Total Stockholders' Equity
Balance at March 31, 2021	54,899,245	$ 549	$ 1,467,942	$ (7,494)	$ 95,219	$ 1,556,216
Net income	—	—	—	—	36,233	36,233
Exercise of stock options and vesting of stock units	70,236	1	351	—	—	352
Stock-based compensation expense	—	—	7,143	—	—	7,143
Translation adjustment	—	—	—	3,125	—	3,125
Balance at June 30, 2021	54,969,481	$ 550	$ 1,475,436	$ (4,369)	$ 131,452	$ 1,603,069

	Six Months Ended June 30, 2020					
	Common Stock					
	Number of Shares	Par Value	Additional Paid-In Capital	Accumulated Other Comprehensive Loss	Retained Earnings/ (Accumulated Deficit)	Total Stockholders' Equity
Balance at December 31, 2019	52,078,258	$ 521	$ 1,068,431	$ (15,027)	$ 5,843	$ 1,059,768
Net income	—	—	—	—	25,676	25,676
Exercise of stock options and vesting of stock units	416,626	4	5,398	—	—	5,402
Stock-based compensation expense	—	—	8,267	—	—	8,267
Translation adjustment	—	—	—	914	—	914
Balance as of June 30, 2020	52,494,884	$ 525	$ 1,082,096	$ (14,113)	$ 31,519	$ 1,100,027

	Three Months Ended June 30, 2020					
	Common Stock					
	Number of Shares	Par Value	Additional Paid-In Capital	Accumulated Other Comprehensive Loss	Retained Earnings	Total Stockholders' Equity
Balance at March 31, 2020	52,278,083	$ 523	$ 1,074,183	$ (20,606)	$ 15,658	$ 1,069,758
Net income	—	—	—	—	15,861	15,861
Exercise of stock options and vesting of stock units	216,801	2	3,811	—	—	3,813
Stock-based compensation expense	—	—	4,102	—	—	4,102
Translation adjustment	—	—	—	6,493	—	6,493
Balance as of June 30, 2020	52,494,884	$ 525	$ 1,082,096	$ (14,113)	$ 31,519	$ 1,100,027

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

REPLIGEN CORPORATION
CONSOLIDATED STATEMENTS OF CASH FLOWS
(Unaudited, amounts in thousands)

	Six Months Ended June 30,	
	2021	**2020**
Cash flows from operating activities:		
Net income	$ 65,683	$ 25,676
Adjustments to reconcile net income to net cash provided by operating activities:		
Inventory step-up charges	1,598	—
Depreciation and amortization	17,420	12,869
Amortization of debt discount and issuance costs	5,690	5,415
Stock-based compensation expense	13,684	8,267
Deferred income taxes, net	5,266	(1,912)
Other	103	143
Changes in operating assets and liabilities, excluding impact of acquisitions:		
Accounts receivable	(31,940)	(5,829)
Inventories	(42,773)	(14,964)
Prepaid expenses and other assets	(563)	(1,633)
Other assets	1,748	(76)
Accounts payable	8,317	2,884
Accrued expenses	4,467	(7,012)
Long-term liabilities	(1,787)	2,437
Total cash provided by operating activities	46,913	26,265
Cash flows from investing activities:		
Acquisitions, net of cash acquired	71	—
Additions to capitalized software costs	(2,191)	(2,226)
Purchases of property, plant and equipment	(24,078)	(7,291)
Total cash used in investing activities	(26,198)	(9,517)
Cash flows from financing activities:		
Proceeds from exercise of stock options	860	5,412
Payment of tax withholding obligation on vesting of restricted stock	—	(10)
Repayment of Convertible Senior Notes	(8)	—
Total cash provided by financing activities	852	5,402
Effect of exchange rate changes on cash, cash equivalents and restricted cash	(4,532)	807
Net increase in cash, cash equivalents and restricted cash	17,035	22,957
Cash, cash equivalents and restricted cash, beginning of period	717,292	537,407
Cash and cash equivalents, end of period	$734,327	$560,364
Supplemental disclosure of non-cash investing and financing activities:		
Assets acquired under operating leases	$ 28,605	$ 17

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

REPLIGEN CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(Unaudited)

1. Summary of Significant Accounting Policies

Basis of Presentation

The consolidated financial statements included herein have been prepared by Repligen Corporation (the "Company", "Repligen", "our" or "we") in accordance with generally accepted accounting principles in the United States ("GAAP") and pursuant to the rules and regulations of the Securities and Exchange Commission ("SEC"), for Quarterly Reports on Form 10-Q and Article 10 of Regulation S-X and do not include all of the information and footnote disclosures required by GAAP. These consolidated financial statements should be read in conjunction with the audited consolidated financial statements and accompanying notes thereto included in the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2020, which was filed with the SEC on February 24, 2021 ("Form 10-K").

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 and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. The business and economic uncertainty resulting from the novel coronavirus ("COVID-19") pandemic has made such estimates more difficult to calculate. Accordingly, actual results could differ from those estimates.

The consolidated financial statements include the accounts of the Company and its wholly-owned subsidiaries, Repligen Sweden AB, Repligen GmbH, Spectrum ® LifeSciences LLC and its subsidiaries ("Spectrum"), C Technologies, Inc. ("C Technologies"), Non-Metallic Solutions, Inc. ("NMS"), ARTeSYN Biosolutions Holdings Ireland Limited ("ARTeSYN") and Repligen Singapore Pte. Ltd. All significant intercompany accounts and transactions have been eliminated in consolidation.

The Company made no material changes in the application of its significant accounting policies that were disclosed in its Form 10-K. In the opinion of management, the accompanying unaudited consolidated financial statements include all adjustments, consisting of only normal, recurring adjustments necessary for a fair presentation of the financial position, results of operations and cash flows. The results of operations for the interim periods presented are not necessarily indicative of results to be expected for the entire year. Certain prior year balances have been reclassified to conform to current year presentation.

Recent Accounting Standards Updates

We consider the applicability and impact of all Accounting Standards Updates ("ASUs" or "ASU") on the Company's consolidated financial statements. Updates not listed below were assessed and determined to be either not applicable or are expected to have minimal impact on the Company's consolidated financial position or results of operations. Recently issued ASUs that we feel may be applicable to the Company are as follows:

Recently Issued Accounting Standard Updates – Not Yet Adopted

In August 2020, the Financial Accounting Standards Board ("FASB") issued ASU 2020-06, " *Debt—Debt with Conversion and Other Options (Subtopic 470-20) and Derivatives and Hedging—Contracts in Entity's Own Equity (Subtopic 815-40)."* ASU 2020-06 simplifies the accounting for convertible debt instruments and convertible preferred stock by reducing the number of accounting models and the number of embedded conversion features that could be recognized separately from the primary contract. ASU 2020-06 also enhances transparency and improves disclosures for convertible instruments and earnings per share guidance. ASU 2020-06 is effective for annual reporting periods beginning after December 15, 2021, including interim periods within those fiscal years. Early adoption is permitted, but no earlier than fiscal years beginning after December 15, 2020. This update permits the use of either the modified retrospective or fully retrospective method of transition. The Company is currently evaluating the impact of the adoption of ASU 2020-06 on the Company's consolidated financial statements.

2. Fair Value Measurements

The Company uses various valuation approaches in determining the fair value of its assets and liabilities. The Company employs a hierarchy for inputs used in measuring fair value that maximizes the use of observable inputs and minimizes the use of unobservable inputs by requiring that observable inputs be used when available. Observable inputs are inputs that market participants would use in pricing the asset or liability based on market data obtained from sources independent of the Company. Unobservable inputs are inputs that reflect the Company's assumptions about the inputs that market participants would use in pricing the asset or liability and are developed based on the best information available in the circumstances. The fair value hierarchy is broken down into three levels based on the source of inputs as follows:

Level 1 – Valuations based on unadjusted quoted prices in active markets for identical assets or liabilities that the Company has the ability to access.

Level 2 – Valuations based on quoted prices for similar assets or liabilities in active markets, quoted prices for identical or similar assets or liabilities in markets that are not active and models for which all significant inputs are observable, either directly or indirectly.

Level 3 – Valuations based on inputs that are unobservable and significant to the overall fair value measurement.

The availability of observable inputs can vary among the various types of financial assets and liabilities. To the extent that the valuation is based on models or inputs that are less observable or unobservable in the market, the determination of fair value requires more judgment. In certain cases, the inputs used to measure fair value may fall into different levels of the fair value hierarchy. In such cases, for financial statement disclosure purposes, the level in the fair value hierarchy within which the fair value measurement is categorized is based on the lowest level input that is significant to the overall fair value measurement.

As of June 30, 2021 and December 31, 2020, cash and cash equivalents on the Company's consolidated balance sheets included $483.9 million and $549.0 million, respectively, in money market accounts. These funds are valued on a recurring basis using Level 1 inputs.

In July 2019, the Company issued $287.5 million aggregate principal amount of the Company's 0.375% Convertible Senior Notes due July 15, 2024 (the "2019 Notes"). Interest is payable semi-annually in arrears on January 15 and July 15 of each year. The 2019 Notes will mature on July 15, 2024, unless earlier converted or repurchased in accordance with their terms. At June 30, 2021 and December 31, 2020, the carrying value of the 2019 Notes was $249.4 million and $243.7 million, respectively, net of unamortized discount, and the fair value of the 2019 Notes was $496.7 million and $501.0 million, respectively. The fair value of the 2019 Notes is a Level 1 valuation and was determined based on the most recent trade activity of the 2019 Notes as of June 30, 2021. The 2019 Notes are discussed in more detail in Note 12, *"Convertible Senior Notes"* to Part II, Item 8, " *Financial Statements and Supplementary Data"* to our 2020 Annual Report on Form 10-K ("Form 10-K), which was filed with the SEC on February 24, 2021.

During the six months ended June 30, 2021, there were no remeasurements to fair value of financial assets and liabilities that are not measured at fair value on a recurring basis.

3. Acquisitions

ARTeSYN Biosolutions Holdings Ireland Limited

On October 27, 2020, the Company entered into an Equity and Asset Purchase Agreement with ARTeSYN, a company organized under the laws of Ireland, Third Creek Holdings LLC, a Nevada limited liability company ("Third Creek"), Alphinity, LLC, a Nevada limited liability company ("Alphinity", and together with Third Creek the "ARTeSYN Sellers"), and Michael Gagne, solely in his capacity as the representative of the ARTeSYN Sellers, pursuant to which the Company acquired (i) all of the outstanding equity securities of ARTeSYN and (ii) certain assets from Alphinity related to the business of ARTeSYN (collectively, the "ARTeSYN Acquisition") for approximately $200 million, comprised of approximately $130 million in cash to the ARTeSYN Sellers and approximately $70 million in the Company's common stock to Third Creek. The transaction closed on December 3, 2020.

ARTeSYN is headquartered in Waterford, Ireland and conducts its operations in Ireland, the United States and Estonia. Its suite of single-use solutions has been created with the goal of enabling "abundance in medicine" by allowing greater efficiency in biologics manufacturing. The ARTeSYN team has created a number of solutions targeting the single-use space from single-use valves with fully disposable valve liners, XO® skeletal supports, a hybrid small parts offering for de-bottlenecking traditional facilities, and fully automated SU process systems that have quickly become leading solutions in the bioprocessing industry. ARTeSYN has established downstream processing leadership with a suite of state of the art single-use systems for chromatography, filtration, continuous manufacturing and media/buffer prep workflows. In addition, the Company has integrated unique flow path assemblies utilizing the Company's silicone extrusion and molding technology, to deliver highly differentiated, low hold-up volume systems that minimize product loss during processing. The ARTeSYN portfolio expands on the market success of the Company's hollow fiber systems and complements our chromatography and TFF filtration product lines.

Consideration Transferred

The ARTeSYN Acquisition was accounted for as a purchase of a business under ASC 805, *"Business Combinations"* . The ARTeSYN Acquisition was funded through payment of $130.7 million in cash, as well as issuance of 372,990 unregistered shares of the Company's common stock totaling $69.4 million, contingent consideration of approximately $1.5 million, and settlement of preexisting invoices with the Company of approximately $2.3 million, for a total purchase price of $204.0 million. Under the acquisition method of accounting, the assets acquired and liabilities assumed of ARTeSYN were recorded as of the acquisition date, at their respective fair values, and consolidated with those of the Company. The fair value of the net tangible assets acquired is estimated to be $8.0 million, the fair value of the intangible assets acquired is estimated to be $67.4 million, and the residual goodwill is estimated to be $128.6 million. The estimated consideration and preliminary purchase price information has been prepared using a preliminary valuation. Payment of the final consideration for working capital was made in April 2021.

The preparation of the valuation required the use of significant assumptions and estimates. Critical estimates included, but were not limited to, future expected cash flows, including projected revenues and expenses, and the applicable discount rates. These estimates were based on assumptions that the Company believes to be reasonable. However, actual results may differ from these estimates.

Total consideration transferred is as follows (amounts in thousands):

Cash consideration	$130,713
Equity consideration	69,422
Contingent consideration	1,548
Settlement of preexisting liabilities	2,310
Fair value of net assets acquired	**$203,993**

Acquisition related costs are not included as a component of consideration transferred but are expensed in the periods in which the costs are incurred. The Company incurred $4.0 million in transaction and integration costs associated with the ARTeSYN Acquisition from the date of acquisition to December 31, 2020, and an additional $2.0 million of transaction and integration costs during the first half of 2021. The transaction costs are included in selling, general and administrative ("SG&A") expenses in the consolidated statements of comprehensive income.

The consideration transferred includes approximately $1.5 million related to consideration that was deferred at the acquisition date, with payment to the ARTeSYN Sellers contingent upon recognizing revenue on a large-scale system within 120 days of the acquisition date. This consideration is recorded at its estimated fair value as of the acquisition date, which includes the assumption of high probability of such revenue being recognized.

Fair Value of Net Assets Acquired

The preliminary allocation of purchase price is based on the fair value of assets acquired and liabilities assumed as of the acquisition date, based on the preliminary valuation. As additional information becomes available, the Company may further revise its preliminary purchase price allocation during the remainder of the measurement period (which will not exceed 12 months from December 3, 2020). Any such revision or changes may be material. The final allocation may include changes to: (1) deferred revenue; (2) inventory; (3) deferred tax liabilities, net; (4) allocations to intangible assets such as tradenames, developed technology and customer relationships as well as goodwill; and (5) other assets and liabilities. Upon conclusion of the measurement period or final determination of the values of assets acquired or liabilities assumed, whichever comes first, any subsequent adjustments are recorded to our consolidated statements of comprehensive income. During 2021, the Company recorded net working capital adjustments of $0.1 million related to settlement of pre-acquisition liabilities, which offset goodwill in the tabl e below.

The components and estimated allocation of the purchase price consist of the following (amounts in thousands):

Cash and cash equivalents	$ 2,982
Accounts receivable	4,811
Inventory	8,592
Prepaid expenses and other current assets	5,561
Property and equipment	1,836
Operating lease right of use asset	1,611
Other noncurrent assets	26
Customer relationships	38,400
Developed technology	27,060
Trademark and tradename	1,630
Non-competition agreements	300
Goodwill	128,598
Accounts payable	(2,251)
Accrued liabilities	(8,706)
Deferred revenue	(3,583)
Deferred tax liabilities, net	(1,240)
Notes payable	(24)
Operating lease liability	(417)
Operating lease liability, long-term	(1,193)
Fair value of net assets acquired	**$203,993**

Acquired Goodwill

The goodwill of $128.6 million represents future economic benefits expected to arise from synergies from combining operations and commercial organizations to increase market presence and the extension of existing customer relationships. Substantially all of the goodwill recorded is expected to be deductible for income tax purposes.

Intangible Assets

The following table sets forth the components of the identified intangible assets associated with the ARTeSYN Acquisition and their estimated useful lives:

	Useful life	Fair Value (Amounts in thousands)
Customer relationships	17 years	$ 38,400
Developed technology	15 years	27,060
Trademark and tradename	21 years	1,630
Non-competition agreements	3 years	300
		$ 67,390

Non-Metallic Solutions, Inc.

On October 15, 2020, the Company entered into a Stock Purchase Agreement with NMS, a Massachusetts corporation, and each of William Malloneé and Derek Masser, the legal and beneficial owners of NMS, to purchase NMS, which transaction subsequently closed on October 20, 2020 (the "NMS Acquisition").

NMS, headquartered in Auburn, Massachusetts, is a manufacturer of fabricated plastics, custom containers, and related assemblies and components used in the manufacturing of biologic drugs. The acquisition of NMS allows Repligen to expand its line of single-use systems and associated integrated flow path assemblies and streamline the supply chain for current products, providing more flexibility to scale and expand Repligen's single-use and systems portfolios.

Consideration Transferred

The NMS Acquisition was accounted for as a purchase of a business under ASC 805, *"Business Combinations."* Total consideration paid was $16.1 million, which included $1.3 million deposited into an escrow account against which the Company may make claims for indemnification. The fair value of the net tangible assets acquired is $0.9 million, the fair value of the intangible assets acquired is $8.5 million, and the residual goodwill is $6.7 million. Acquisition-related costs are not included as a component of consideration transferred but are expensed in the periods in which costs are incurred. The Company incurred $0.2 million of transaction and integration costs associated with the NMS Acquisition from the date of acquisition to December 31, 2020, and $0.3 million for the six months ended June 30, 2021. The transaction costs are included in SG&A expenses in the consolidated statements of comprehensive income.

Fair Value of Net Assets Acquired

The preliminary allocation of purchase price is based on the fair value of assets acquired and liabilities assumed as of the acquisition date, based on the preliminary valuation. As additional information becomes available, the Company may further revise its preliminary purchase price allocation during the remainder of the measurement period (which will not exceed 12 months from October 20, 2020).

The components and estimated allocation of the purchase price consist of the following (amounts in thousands):

Cash and cash equivalents	$ 1,163
Accounts receivable	415
Inventory	334
Prepaid expenses and other current assets	13
Property and equipment	73
Operating lease right of use asset	194
Customer relationships	6,370
Developed technology	1,810
Trademark and tradename	190
Non-competition agreements	90
Goodwill	6,713
Deferred tax assets	24
Accounts payable	(96)
Accrued liabilities	(999)
Operating lease liability	(136)
Operating lease liability, long-term	(59)
Fair value of net assets acquired	**$16,099**

Acquired Goodwill

The goodwill of $6.7 million represents future economic benefits expected to arise from anticipated synergies from the integration of NMS. These synergies include certain cost savings, operating efficiencies and other strategic benefits projected to be achieved as a result of the NMS Acquisition. Substantially all of the goodwill recorded is expected to be deductible for income tax purposes. In February 2021, the Company recorded an adjustment to goodwill of $0.1 million related to the finalization of the working capital true-up .

Intangible Assets

The following table sets forth the components of the identified intangible assets associated with the NMS Acquisition and their estimated useful lives:

	Useful life	Fair Value (Amounts in thousands)
Customer relationships	14 years	$ 6,370
Developed technology	12 years	1,810
Trademark and tradename	15 years	190
Non-competition agreements	3 years	90
		$ 8,460

Engineered Molding Technology LLC

On July 13, 2020, the Company completed the acquisition of 100% of the membership interests of EMT, a New York limited liability company, pursuant to a Membership Interest Purchase Agreement, dated June 26, 2020, by and among the Company, EMT, and each of Michael Pandori and Todd Etesse, the legal and beneficial owners of EMT (such acquisition, the "EMT Acquisition").

EMT, headquartered in Clifton Park, New York, is an innovator and manufacturer of single-use silicone assemblies and components used in the manufacturing of biologic drugs. EMT's standard and custom molding as well as their over-molded connectors and silicone tubing products are key components in single-use filtration and chromatography systems. EMT's products complement and expand Repligen's single-use systems and consumable product offerings.

Effective July 11, 2021, EMT was absorbed into the Company by way of "short form" merger pursuant to New York and Delaware law, which did not require a vote of the Company's shareholders.

Consideration Transferred

The EMT Acquisition was accounted for as a purchase of a business under ASC 805, *"Business Combinations"*. Total consideration paid was $28.5 million, which included $2.2 million deposited into an escrow account against which the Company may make claims for indemnification. Under the acquisition method of accounting, the net assets of EMT were recorded as of the acquisition date, at their respective fair values, and consolidated with those of Repligen. The fair value of the net tangible assets acquired is approximately $1.5 million, the fair value of the intangible assets acquired is approximately $14.4 million, and the residual goodwill is approximately $12.6 million. The estimated consideration and preliminary purchase price information have been prepared using a preliminary valuation. The preparation of the valuation required the use of significant assumptions and estimates. Critical estimates included, but were not limited to, future expected cash flows, including projected revenues and expenses, and the applicable discount rates. These estimates were based on assumptions that Repligen believes to be reasonable.

Acquisition-related costs are not included as a component of consideration transferred but are expensed in the periods in which the costs are incurred. The Company incurred $1.2 million of transaction and integration costs associated with the EMT Acquisition in 2020 and $0.3 million for the six months ended June 30, 2021. The transaction costs are included in SG&A expenses in the consolidated statements of comprehensive income.

Fair Value of Net Assets Acquired

The allocation of purchase price is based on the fair value of assets acquired and liabilities assumed as of the acquisition date, based on the preliminary valuation. The Company obtained this information during due diligence and through other sources. In the months after the closing, the Company obtained additional information about these assets and liabilities as it learned more about EMT. The Company refined the estimates of fair value to more accurately allocate the purchase price. Only items identified as of the acquisition date were considered for subsequent adjustment. We have made appropriate adjustments to the purchase price allocation during the measurement period, which ended on July 13, 2021. The components and allocation of the purchase price consist of the following (amounts in thousands):

Cash and cash equivalents	$ 69
Accounts receivable	1,057
Inventory	449
Prepaid expenses and other current assets	7
Property and equipment	414
Operating lease right of use assets	1,050
Customer relationships	11,080
Developed technology	2,910
Trademark and tradename	320
Non-compete agreements	50
Goodwill	12,585
Deferred tax asset	46
Accounts payable	(283)
Accrued liabilities	(190)
Operating lease liability	(211)
Operating lease liability, long-term	(839)
Fair value of net assets acquired	**$28,514**

Acquired Goodwill

The goodwill of $12.6 million represents future economic benefits expected to arise from anticipated synergies from the integration of EMT. These synergies include certain cost savings, operating efficiencies and other strategic benefits projected to be achieved as a result of the EMT Acquisition. Substantially all of the goodwill recorded is expected to be deductible for income tax purposes.

Intangible Assets

The following table sets forth the components of the identified intangible assets associated with the EMT Acquisition and their estimated useful lives:

	Useful life	Fair Value (Amounts in thousands)
Customer relationships	14 years	$ 11,080
Developed technology	11 years	2,910
Trademark and tradename	14 years	320
Non-competition agreements	3 years	50
		$ 14,360

4. Revenue Recognition

The Company generates revenue from the sale of bioprocessing products, equipment devices, and related consumables used with these equipment devices to customers in the life science and biopharmaceutical industries. Under ASC 606, *"Revenue from Contracts with Customers,"* revenue is recognized when, or as, obligations under the terms of a contract are satisfied, which occurs when control of the promised products or services is transferred to customers.

Disaggregation of Revenue

Revenues for the three and six months ended June 30, 2021 and 2020 were as follows:

	Three Months Ended June 30,		Six Months Ended June 30,	
	2021	2020	2021	2020
	(Amounts in thousands)			
Product revenue	$162,920	$87,432	$305,657	$163,492
Royalty and other income	40	30	140	60
Total revenue	$162,960	$87,462	$305,797	$163,552

When disaggregating revenue, the Company considered all of the economic factors that may affect its revenues. Because all of its revenues are from bioprocessing customers, there are no differences in the nature, timing and uncertainty of the Company's revenues and cash flows from any of its product lines. However, given that the Company's revenues are generated in different geographic regions, factors such as regulatory and geopolitical factors within those regions could impact the nature, timing and uncertainty of the Company's revenues and cash flows. In addition, a significant portion of the Company's revenues are generated from a small number of customers; therefore, economic factors specific to these customers could impact the nature, timing and uncertainty of the Company's revenues and cash flows.

Disaggregated revenue from contracts with customers by geographic region can be found in Note 14, *"Segment Reporting,"* included in this report.

No revenue from customers represented 10% or more of the Company's total revenue for either the three or six months ended June 30, 2021. Revenue from significant customers that represented 10% or more of the Company's total revenue for the three and six months ended June 30, 2020 was as follows:

	Three Months Ended June 30, 2020	Six Months Ended June 30, 2020
	(Amounts in thousands)	
Cytiva	$ 10,479	$ 16,606
MilliporeSigma	$ 10,674	$ 21,566

For more information regarding our product revenue, see Note 5, *"Revenue Recognition"* included in Part II, Item 8, " *Financial Statements and Supplementary Data"* to our Form 10-K.

Contract Balances from Contracts with Customers

The following table provides information about receivables and deferred revenue from contracts with customers as of June 30, 2021 (amounts in thousands):

	2021
Balances from contracts with customers only:	
Accounts receivable, net of reserves	$102,659
Deferred revenue (included in accrued liabilities in the consolidated balance sheets)	$ 15,238
Revenue recognized during the six-month period ended June 30, 2021 relating to:	
The beginning deferred revenue balance	$ 12,093
Changes in pricing related to products or services satisfied in previous periods	$ —

The timing of revenue recognition, billings and cash collections results in the accounts receivable and deferred revenue balances on the Company's consolidated balance sheets.

A contract asset is created when the Company satisfies a performance obligation by transferring a promised good to the customer. Contract assets may represent conditional or unconditional rights to consideration. The right is conditional and recorded as a contract asset, if the Company must first satisfy another performance obligation in the contract before it is entitled to payment

from the customer. Contract assets are transferred to billed receivables once the right becomes unconditional. If the Company has the unconditional right to receive consideration from the customer, the contract asset is accounted for as a billed receivable and presented separately from other contract assets. A right is unconditional if nothing other than the passage of time is required before payment of that consideration is due.

When consideration is received, or such consideration is unconditionally due, from a customer prior to transferring goods or services to the customer under the terms of a contract, a contract liability is recorded. Contract liabilities are recognized as revenue after control of the products or services is transferred to the customer and all revenue recognition criteria have been met.

5. Goodwill and Intangible Assets

Goodwill

Goodwill represents the difference between the purchase price and the estimated fair value of identifiable assets acquired and liabilities assumed. Goodwill acquired in a business combination and determined to have an indefinite useful life is not amortized, but instead is tested for impairment at least annually in accordance with ASC 350, *"Intangibles – Goodwill and Other"* . The following table represents the change in the carrying value of goodwill for the six months ended June 30, 2021 (amounts in thousands):

Balance at December 31, 2020	$618,305
Measurement period adjustment - NMS	(71)
Measurement period adjustments - ARTeSYN	(60)
Cumulative translation adjustment	(581)
Balance at June 30, 2021	$617,593

During each of the fourth quarters of 2020, 2019 and 2018, the Company completed its annual impairment assessments and concluded that goodwill was not impaired in any of those years. The Company has not identified any "triggering" events which indicate an impairment of goodwill in the three and six months ended June 30, 2021.

Intangible Assets

Intangible assets with a definitive life are amortized over their useful lives using the straight-line method, and the amortization expense is recorded within cost of product revenue and SG&A expenses in the Company's statements of comprehensive income. Intangible assets and their related useful lives are reviewed at least annually to determine if any adverse conditions existed that would indicate the carrying value of these assets may not be recoverable. More frequent impairment assessments are conducted if certain conditions exist, including a change in the competitive landscape, any internal decisions to pursue new or different technology strategies, a loss of a significant customer, or a significant change in the marketplace, including changes in the prices paid for our products or changes in the size of the market for the Company's products. An impairment results if the carrying value of the asset exceeds the estimated fair value of the asset. If the estimate of an intangible asset's remaining useful life is changed, the remaining carrying amount of the intangible asset is amortized prospectively over the revised remaining useful life. The Company continues to believe that its intangible assets are recoverable at June 30, 2021.

Indefinite-lived assets are reviewed for impairment at least annually. There has been no impairment of the Company's intangible assets for the periods presented.

Intangible assets, net consisted of the following at June 30, 2021:

	June 30, 2021			
	Gross Carrying Value	Accumulated Amortization	Net Carrying Value	Weighted Average Useful Life (in years)
	(Amounts in thousands)			
Finite-lived intangible assets:				
Technology - developed	$114,121	$ (17,679)	$ 96,442	17
Patents	240	(240)	—	8
Customer relationships	217,407	(43,863)	173,544	16
Trademarks	5,892	(691)	5,201	20
Other intangibles	2,140	(1,478)	662	3
Total finite-lived intangible assets	339,800	(63,951)	275,849	16
Indefinite-lived intangible asset:				
Trademarks	700	—	700	—
Total intangible assets	$340,500	$ (63,951)	$276,549	

Intangible assets consisted of the following at December 31, 2020:

	December 31, 2020			
	Gross Carrying Value	Accumulated Amortization	Net Carrying Value	Weighted Average Useful Life (in years)
	(Amounts in thousands)			
Finite-lived intangible assets:				
Technology - developed	$114,217	$ (14,444)	$ 99,773	17
Patents	240	(240)	—	8
Customer relationships	217,790	(37,333)	180,457	16
Trademarks	5,893	(541)	5,352	20
Other intangibles	2,142	(1,324)	818	3
Total finite-lived intangible assets	340,282	(53,882)	286,400	16
Indefinite-lived intangible asset:				
Trademarks	700	—	700	—
Total intangible assets	$340,982	$ (53,882)	$287,100	

Amortization expense for finite-lived intangible assets was $5.2 million and $3.9 million for each of the three months ended June 30, 2021 and 2020, respectively, and $10.4 million and $7.8 million for each of the six months ended June 30, 2021 and 2020, respectively. As of June 30, 2021, the Company expects to record the following amortization expense in future periods (amounts in thousands):

For the Six Months Ended June 30,	Estimated Amortization Expense
2021 (remaining six months)	$ 10,375
2022	20,748
2023	20,631
2024	20,063
2025	19,797
2026 and thereafter	184,235
Total	$ 275,849

6. Consolidated Balance Sheet Detail

Inventories, net

Inventories, net consists of the following:

	June 30, 2021	December 31, 2020
	(Amounts in thousands)	
Raw materials	$ 87,435	$ 48,746
Work-in-process	7,631	8,084
Finished products	40,443	38,195
Total inventories, net	$ 135,509	$ 95,025

Property, Plant and Equipment

Property, plant and equipment consist of the following:

	June 30, 2021	December 31, 2020
	(Amounts in thousands)	
Land	$ 1,023	$ 1,023
Buildings	764	1,007
Leasehold improvements	49,666	31,331
Equipment	52,482	43,072
Furniture, fixtures and office equipment	7,830	8,714
Computer hardware and software	19,692	15,397
Construction in progress	7,942	14,927
Other	449	455
Total property, plant and equipment	139,848	115,926
Less - Accumulated depreciation	(54,357)	(49,056)
Total property, plant and equipment, net	$ 85,491	$ 66,870

Depreciation expenses totaled $3.8 million and $2.6 million for each of the three months ended June 30, 2021 and 2020, respectively, and $7.0 million and $5.1 million for each of the six months ended June 30, 2021 and 2020, respectively.

Accrued Liabilities

Accrued liabilities consist of the following:

	June 30, 2021	December 31, 2020
	(Amounts in thousands)	
Employee compensation	$25,915	$ 20,288
Income taxes payable	4,331	1,423
Royalty and license fees	1,209	466
Warranties	1,321	1,576
Professional fees	1,163	1,425
Deferred revenue	15,238	15,318
Other	4,596	12,589
Total accrued liabilities	$53,773	$ 53,085

7. Convertible Senior Notes

0.375% Convertible Senior Notes due 2024

On July 19, 2019, the Company issued $287.5 million aggregate principal pursuant to the 2019 Notes, which includes the underwriters' exercise in full of an option to purchase an additional $37.5 million aggregate principal amount of 2019 Notes (the "Notes Offering"). The net proceeds of the Notes Offering, after deducting underwriting discounts and commissions and other related offering expenses payable by the Company, were approximately $278.5 million. The 2019 Notes are senior, unsecured obligations of the Company, and bear interest at a rate of 0.375% per year. Interest is payable semi-annually in arrears on January 15 and July 15 of each year, beginning on January 15, 2020. The 2019 Notes will mature on July 15, 2024, unless earlier repurchased or converted in accordance with their terms.

During the second quarter of 2021, the closing price of the Company's common stock exceeded 130% of the conversion price of the 2019 Notes for more than 20 trading days of the last 30 consecutive trading days of the quarter. As a result, the 2019 Notes are convertible at the option of the holders of the 2019 Notes during the third quarter of 2021, the quarter immediately following the quarter when the conditions are met, as stated in the terms of the 2019 Notes. These conditions were also met during the fourth quarter of 2020 and the first quarter of 2021. As a result, the Company received notices from note holders that they would convert $5,000 aggregate principal amount of the 2019 Notes, of which $1,000 principal were settled during the first quarter of 2021 and $4,000 principal were settled during the second quarter of 2021. The conversion resulted in the issuance of a nominal number of shares of the Company's common stock to the note holders, and the Company recorded a loss of approximately $4,000 on the conversion of these notes, which is included in other expenses, net on our consolidated statements of comprehensive income for the three and six months ended June 30, 2021. The Company continues to classify the carrying value of the 2019 Notes as current liabilities on the Company's consolidated balance sheet at June 30, 2021.

The net carrying value of the liability component of the 2019 Notes is as follows:

	June 30, 2021	December 31, 2020
	(Amounts in thousands)	
0.375% Convertible Senior Notes due 2024:		
Principal amount	$287,495	$ 287,500
Unamortized debt discount	(33,334)	(38,317)
Unamortized debt issuance costs	(4,738)	(5,446)
Net carrying amount	$249,423	$ 243,737

Interest expense recognized on the 2019 Notes for the three months ended June 30, 2021 was $0.3 million, $2.5 million and $0.4 million for the contractual coupon interest, the accretion of the debt discount and the amortization of the debt issuance costs, respectively. Interest expense recognized on the 2019 Notes for the six months ended June 30, 2021 was $0.5 million, $5.0 million and $0.7 million for the contractual coupon interest, the accretion of the debt discount and the amortization of the debt issuance costs, respectively. The effective interest rate on the 2019 Notes is 5.1%, which included the interest on the 2019 Notes, amortization of the debt discount and debt issuance costs. At June 30, 2021 and December 31, 2020, the carrying value of the 2019 Notes was $249.4 million and $243.7 million, respectively, net of unamortized discount, and the fair value of the 2019 Notes was $496.7 million and $501.0 million, respectively. The fair value of the 2019 Notes was determined based on the most recent trade activity of the 2019 Notes at June 30, 2021.

8. Stockholders' Equity

Stock Option and Incentive Plans

Under the Company's current 2018 Stock Option and Incentive Plan (the "2018 Plan"), the number of shares of the Company's common stock that are reserved and available for issuance is 2,778,000, plus the number of shares of common stock available for issuance under the Company's previous plans. The shares of common stock underlying any awards under the 2018 Plan and previous plans (together, the "Plans") that are forfeited, canceled or otherwise terminated (other than by exercise) shall be added back to the shares of stock available for issuance under the 2018 Plan. At June 30, 2021, 2,159,922 shares were available for future grants under the 2018 Plan.

Stock-Based Compensation

For each of the three months ended June 30, 2021 and 2020, the Company recorded stock-based compensation expense of $7.1 million and $4.1 million, respectively, for share-based awards granted under the Plans. For the six months ended June 30, 2021 and 2020, the Company recorded stock-based compensation expense of $13.7 million and $8.3 million, respectively. The following table presents stock-based compensation expense in the Company's consolidated statements of comprehensive income:

	Three Months Ended June 30,		Six Months Ended June 30,	
	2021	2020	2021	2020
	(Amounts in thousands)			
Cost of product revenue	$ 449	$ 425	$ 955	$ 858
Research and development	795	394	1,511	766
Selling, general and administrative	5,899	3,283	11,218	6,643
Total stock-based compensation	$ 7,143	$ 4,102	$13,684	$8,267

The 2018 Plan allows for the granting of incentive and nonqualified options to purchase shares of common stock, restricted stock and other equity awards. Employee grants under the Plans generally vest over a three to five-year period, with 20%-33% vesting on the first anniversary of the date of grant and the remainder vesting in equal yearly installments thereafter. Nonqualified options issued to non-employee directors under the Plans generally vest over one year. In the first quarter of 2018, to create a longer-term retention incentive, the Company's Compensation Committee granted long-term incentive compensation awards to its Chief Executive Officer consisting of both stock options and restricted stock units ("RSUs") that are subject to time-based vesting over nine years. Options granted under the Plans have a maximum term of ten years from the date of grant and generally, the exercise price of the stock options equals the fair market value of the Company's common stock on the date of grant. At June 30, 2021, options to purchase 682,913 shares and 618,618 stock units were outstanding under the Plans.

The Company uses the Black-Scholes option pricing model to calculate the fair value of stock option awards on the grant date, and the Company uses the value of the common stock as of the grant date to value RSUs. The Company measures stock-based compensation costs at the grant date based on the estimated fair value of the award. The Company recognizes expense on awards with service-based vesting over the employee's requisite service period on a straight-line basis. Prior to 2020, the Company issued performance stock units to certain employees which are tied to the achievement of certain Company financial goal metrics and the passage of time. Since 2020, the Company has implemented formal programs that issue performance stock units to certain employees set to vest upon the achievement of individual goals and financial goals of the Company, as well as the passage of time. The Company recognizes expense on performance-based awards over the vesting period based on the probability that the performance metrics will be achieved. The Company recognizes stock-based compensation expense for options that are ultimately expected to vest, and accordingly, such compensation expense has been adjusted for estimated forfeitures.

Information regarding option activity for the six months ended June 30, 2021 under the Plans is summarized below:

	Shares	Weighted average exercise price	Weighted-Average Remaining Contractual Term (in Years)	Aggregate Intrinsic Value (in Thousands)
Options outstanding at December 31, 2020	696,711	$ 43.88	6.90	$ 102,958
Granted	28,824	$ 203.98		
Exercised	(36,622)	$ 23.35		
Forfeited/expired/cancelled	(6,000)	$ 48.05		
Options outstanding at June 30, 2021	682,913	$ 51.71	6.68	$ 101,356
Options exercisable at June 30, 2021	375,822	$ 37.61	6.04	$ 60,887
Vested and expected to vest at June 30, 2021 (1)	660,525		6.66	$ 98,143

(1) Represents the number of vested options as of June 30, 2021 plus the number of unvested options expected to vest as of June 30, 2021 based on the unvested outstanding options at June 30, 2021 adjusted for estimated forfeiture rates of 8% for awards granted to non-executive level employees and 3% for awards granted to executive level employees.

The aggregate intrinsic value in the table above represents the total pre-tax intrinsic value (the difference between the closing price of the common stock on June 30, 2021, the last business day of the second quarter of 2021, of $199.62 per share and the exercise price of each in-the-money option) that would have been received by the option holders had all option holders exercised their options on June 30, 2021. The aggregate intrinsic value of stock options exercised during the six months ended June 30, 2021 and 2020 was $6.0 million and $23.8 million, respectively.

The weighted average grant date fair value of options granted during the six months ended June 30, 2021 and 2020 was $86.96 and $46.56, respectively. The total fair value of stock options that vested during the six months ended June 30, 2021 and 2020 was $2.5 million during each period.

The fair value of stock units is calculated using the closing price of the Company's common stock on the date of grant. Information regarding stock unit activity, which includes activity for RSUs and performance stock units, for the six months ended June 30, 2021 under the Plans is summarized below:

	Shares	Weighted-Average Remaining Contractual Term (in Years)	Aggregate Intrinsic Value (in Thousands)
Unvested at December 31, 2020	665,540	3.32	$ 127,904
Awarded	140,291		
Vested	(171,519)		
Forfeited/expired/cancelled	(15,694)		
Unvested at June 30, 2021	618,618	2.98	$ 123,489
Unvested and expected to vest at June 30, 2021 (1)	619,320	2.81	$ 123,629

(1) Represents the number of vested stock units as of June 30, 2021 plus the number of unvested stock units expected to vest as of June 30, 2021 based on the unvested outstanding stock units at June 30, 2021 adjusted for estimated forfeiture rates of 8% for awards granted to non-executive level employees and 3% for awards granted to executive level employees.

The aggregate intrinsic value in the table above represents the total pre-tax intrinsic value (equal to the closing price of the common stock on June 30, 2021, the last business day of the second quarter of 2021, of $199.62 per share, as stock units do not have an exercise price) that would have been received by the stock unit holders had all holders exercised on June 30, 2021. The aggregate intrinsic value of stock units vested during the six months ended June 30, 2021 and 2020 was $35.8 million and $16.6 million, respectively.

The weighted average grant date fair value of stock units vested during the six months ended June 30, 2021 and 2020 was $56.06 and $42.96, respectively. The total fair value of stock units that vested during the six months ended June 30, 2021 and 2020 was $9.6 million and $7.3 million, respectively.

As of June 30, 2021, there was $62.4 million of total unrecognized compensation cost related to unvested share-based awards. This cost is expected to be recognized over a weighted average remaining requisite service period of 3.12 years. The Company expects 1,923,291 unvested options and stock units to vest over the next five years.

9. Commitments and Contingencies

In June 2018, the Company secured an agreement with Navigo Proteins ("Navigo") for the exclusive co-development of multiple affinity ligands for which Repligen holds commercialization rights. The Company is manufacturing and supplying the first of these ligands, NGL-Impact ®, exclusively to Purolite Life Sciences ("Purolite"), who is pairing the Company's high-performance ligand with Purolite's agarose jetting base bead technology used in their Jetted A50 Protein A resin product. The Company also signed a long-term supply agreement with Purolite for NGL-Impact and other potential additional affinity ligands that may advance from the Company's Navigo collaboration. In September 2020, the Company and Navigo successfully completed co-development of an affinity ligand targeting the SARS-CoV-2 spike protein, to be utilized in the purification of COVID-19 vaccines. The Company has proceeded with scaling up and manufacturing this ligand and the development and validation of the related affinity chromatography resin, which is marketed by the Company. The Navigo and Purolite agreements are supportive of the Company's strategy to secure and reinforce the Company's proteins business. The Company made royalty payments to Navigo of $ 0.3 million and $ 0.6 million for the three and six months ended June 30, 2021. No royalty payments were made to Navigo during the three and six months ended June 30, 2020.

10. Accumulated Other Comprehensive (Loss) Income

The following shows the changes in the components of accumulated other comprehensive (loss) income for the six months ended June 30, 2021 which consisted of only foreign currency translation adjustments for the perio d s shown (amounts in thousands):

	Foreign Currency Translation Adjustment
Balance as of December 31, 2020	$ 2,085
Other comprehensive loss	(6,454)
Balance at June 30, 2021	$ (4,369)

11. Income Taxes

For the three and six months ended June 30, 2021, we recorded an income tax provision of $8.1 million and $11.8 million, respectively. The Company's effective tax rate for the three and six months ended June 30, 2021 was 18.3% and 15.2%, respectively, compared to 1.0% and 3.8% for the corresponding periods in the prior year. The increase in effective tax rates was primarily due to higher income before income taxes, lower windfall benefits recognized on stock option exercises and the vesting of stock units partially offset by lower U.S. taxation of foreign earnings. The effective tax rates for the three and six months ended June 30, 2021 and 2020 were lower than the U.S. statutory rate of 21% primarily due to business tax credits and windfall benefits on stock option exercises and the vesting of stock units.

12. Earnings Per Share

The Company reports earnings per share in accordance with ASC 260, *"Earnings Per Share,"* which establishes standards for computing and presenting earnings per share. Basic earnings per share is computed by dividing net income available to common shareholders by the weighted average number of common shares outstanding during the period. Diluted earnings per share is computed by dividing net income available to common shareholders by the weighted-average number of common shares and dilutive common share equivalents then outstanding. Potential common share equivalents consist of RSUs, performance stock units and the incremental common shares issuable upon the exercise of stock options. Under the treasury stock method, unexercised "in-the-money" stock options and warrants are assumed to be exercised at the beginning of the period or at issuance, if later. The assumed proceeds are then used to purchase common shares at the average market price during the period. In periods when the Company has a net loss, stock awards are excluded from the calculation of earnings per share as their inclusion would have an antidilutive effect.

A reconciliation of basic and diluted weighted average shares outstanding is as follows:

	Three Months Ended June 30,		Six Months Ended June 30,	
	2021	2020	2021	2020
	(Amounts in thousands, except per share data)			
Net income	$ 36,233	$ 15,861	$ 65,683	$ 25,676
Weighted average shares used in computing net income per share - basic	54,931	52,381	54,868	52,260
Effect of dilutive shares:				
Options and stock units	843	925	903	953
Convertible Senior Notes	1,012	—	1,052	
Dilutive potential common shares	1,855	925	1,955	953
Weighted average shares used in computing net income per share - diluted	56,786	53,306	56,824	53,213
Earnings per share:				
Basic	$ 0.66	$ 0.30	$ 1.20	$ 0.49
Diluted	$ 0.64	$ 0.30	$ 1.16	$ 0.48

At June 30, 2021, there were outstanding options to purchase 682,913 shares of the Company's common stock at a weighted average exercise price of $51.71 per share and 618,618 shares of common stock issuable upon the vesting of stock units, which include RSUs and performance stock units. For the three and six months ended June 30, 2021, 69,388 shares of the Company's common stock were excluded from the calculation of diluted earnings per share because the exercise prices of the stock options were greater than or equal to the average price of the common shares and were therefore anti-dilutive.

At June 30, 2020, there were outstanding options to purchase 768,904 shares of the Company's common stock at a weighted average exercise price of $38.87 per share and 696,098 shares of common stock issuable upon the vesting of stock units, which include RSUs and performance stock units. For the three and six months ended June 30, 2020, 11,578 and 12,328 shares of the Company's common stock were excluded from the calculation of diluted earnings per share because the exercise prices of the stock options were greater than or equal to the average price of the common shares and were therefore anti-dilutive.

In July 2019, the Company issued $287.5 million aggregate principal amount of the 2019 Notes. As provided by the terms of the indenture underlying the 2019 Notes, conversion of the 2019 Notes will be settled in cash, shares of the Company's common stock or a combination thereof, at the Company's election. As of June 30, 2021, the 2019 Notes were convertible. The Company currently intends to settle the par value of the 2019 Notes in cash and any excess conversion premium in shares.

As provided by the terms of the indenture underlying the 2019 Notes, the Company has a choice to settle the conversion obligation for the 2019 Notes in cash, shares or any combination of the two. The Company currently intends to settle the par value of the 2019 Notes in cash and any excess conversion premium in shares. The Company applies the provisions of ASC 260, *"Earnings Per Share",* Subsection 10-45-44, to determine the diluted weighted average shares outstanding as it relates to the conversion spread on its convertible notes. Accordingly, the par value of the 2019 Notes is not included in the calculation of diluted income per share, but the dilutive effect of the conversion premium is considered in the calculation of diluted net income per share using the treasury stock method. The dilutive impact of the 2019 Notes is based on the difference between the Company's current period average stock price and the conversion price of the 2019 Notes, provided there is a premium. Pursuant to this accounting standard, there is no dilution from the accreted principal of the 2019 Notes. For the three and six months ended June 30, 2021, the dilutive effect of the conversion premium included in the calculation of diluted earnings was 1,011,993 shares and 1,052,337 shares, respectively. There was no dilutive effect of the conversion premium included in the calculation of diluted earnings per share for the three and six months ended June 30, 2020.

13. Related Party Transactions

Certain facilities leased by Spectrum are owned by Roy Eddleman, the former owner of Spectrum. As of June 30, 2021, Mr. Eddleman owned greater than 5% of the Company's outstanding shares and the Company considers him to be a related party. The lease amounts paid to this shareholder prior to the public offering were negotiated in connection with the acquisition of Spectrum. The Company incurred rent expense totaling $0.2 million for each of the three months ended June 30, 2021 and 2020 related to these leases and incurred rent expense of $0.4 million and $0.3 million for each of the six months ended June 30, 2021 and 2020, respectively.

14. Segment Reporting

The Company views its operations, makes decisions regarding how to allocate resources and manages its business as one reportable segment and one reporting unit. As a result, the financial information disclosed herein represents all of the material financial information related to the Company.

The following table represents the Company's total revenue by geographic area (based on the location of the customer):

	Three Months Ended June 30,		Six Months Ended June 30,	
	2021	2020	2021	2020
Revenue by customers' geographic locations:				
North America	41%	47%	42%	47%
Europe	40%	37%	39%	39%
APAC/Other	19%	16%	19%	14%
Total revenue	100%	100%	100%	100%

Concentrations of Credit Risk and Significant Customers

Financial instruments that subject the Company to significant concentrations of credit risk primarily consist of cash and cash equivalents, marketable securities and accounts receivable. Per the Company's investment policy, cash equivalents and marketable securities are invested in financial instruments with high credit ratings and credit exposure to any one issue, issuer (with the exception of U.S. Treasury obligations) and type of instrument is limited. At June 30, 2021 and December 31, 2020, the Company had no investments associated with foreign exchange contracts, options contracts or other foreign hedging arrangements.

Concentration of credit risk with respect to accounts receivable is limited to customers to whom the Company makes significant sales. While a reserve for the potential write-off of accounts receivable is maintained, the Company has not written off any significant accounts to date. To control credit risk, the Company performs regular credit evaluations of its customers' financial condition.

No revenue from customers represented 10% or more of the Company's total revenue for each of the three and six months ended June 30, 2021. Revenue from significant customers that represented 10% or more of the Company's total revenue for the three and six months ended June 30, 2020 is as follows:

	Three Months Ended June 30, 2020	Six Months Ended June 30, 2020
Cytiva	12%	10%
MilliporeSigma	12%	13%

Significant accounts receivable balances representing 10% or more of the Company's total trade accounts receivable and royalties and other receivable balances at June 30, 2021 and December 31, 2020 include the accounts receivable balance with Cytiva, which represented 12% and 11%, respectively, of the Company's total trade accounts receivable and royalties and other receivables.

15. Subsequent Event

Acquisition of Polymem S.A.

On June 22, 2021, the Company entered into a Stock Purchase Agreement with Polymem S.A. ("Polymem"), a company organized under the laws of France, and Jean-Michel Espenan and Franc Saux, acting together jointly and severally as the representatives of the sellers, which transaction subsequently closed on July 1, 2021 (the "Polymem Acquisition.").

Polymem, which is headquartered in, Toulouse, France, is a manufacturer of hollow fiber membranes, membrane modules and systems for industrial and bioprocessing applications. Polymem products will complement and expand the Company's portfolio of hollow fiber systems and consumables. The acquisition substantially increases Repligen's membrane and module manufacturing capacity and establishes a world-class center of excellence in Europe to address the accelerating global demand for these innovative products.

The Company will account for the Polymem Acquisition as a purchase of a business under the acquisition method of accounting and has engaged a third-party valuation firm to assist with the valuation of the business acquired. The estimated purchase price allocation for the Polymem Acquisition will be included in the Quarterly Report on Form 10-Q for the period ended September 30, 2021.

ITEM 2. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

Overview

Repligen and its subsidiaries, collectively doing business as Repligen Corporation ("Repligen", "we", "our", or the "Company") is a global life sciences company that develops and commercializes highly innovative bioprocessing technologies and systems that increase efficiencies and flexibility in the process of manufacturing biological drugs.

As the overall market for biologics continues to grow and expand, our customers – primarily large biopharmaceutical companies and contract development and manufacturing organizations – face critical production cost, capacity, quality and time pressures. Built to address these concerns, our products are helping to set new standards for the way biologics are manufactured. We are committed to inspiring advances in bioprocessing as a trusted partner in the production of critical biologic drugs – including monoclonal antibodies ("mAb"), recombinant proteins, vaccines and gene therapies – that are improving human health worldwide. For more information regarding our business, products and acquisitions, see Part I, Item 1, *"Business"* included in our 2020 Annual Report on Form 10-K ("Form 10-K"), which was filed with the Securities and Exchange Commission ("SEC") on February 24, 2021.

We currently operate as one bioprocessing business, with a comprehensive suite of products to serve both upstream and downstream processes in biological drug manufacturing. Building on over 35 years of industry expertise, we have developed a broad and diversified product portfolio that reflects our passion for innovation and the customer-first culture that drives our entire organization. We continue to capitalize on opportunities to maximize the value of our product platform through both organic growth initiatives (internal innovation and commercial leverage) and targeted acquisitions.

2021 Acquisitions

Acquisition of Polymem S.A.

On June 22, 2021, the Company entered into a Stock Purchase Agreement with Polymem S.A. ("Polymem"), a company organized under the laws of France, and Jean-Michel Espenan and Franc Saux, acting together jointly and severally as the representatives of the sellers, which transaction subsequently closed on July 1, 2021 (the "Polymem Acquisition.").

Polymem, which is headquartered in, Toulouse, France, is a manufacturer of hollow fiber membranes, membrane modules and systems for industrial and bioprocessing applications. Polymem products will complement and expand the Company's portfolio of hollow fiber systems and consumables. The acquisition substantially increases Repligen's membrane and module manufacturing capacity and establishes a world-class center of excellence in Europe to address the accelerating global demand for these innovative products.

2020 Acquisitions

ARTeSYN Biosolutions Holdings Ireland Limited

On October 27, 2020, we entered into an Equity and Asset Purchase Agreement with ARTeSYN Biosolutions Holdings Ireland Limited ("ARTeSYN"), a company organized under the laws of Ireland, Third Creek Holdings, LLC, a Nevada limited liability company ("Third Creek"), Alphinity, LLC, a Nevada limited liability company ("Alphinity", and together with Third Creek the "ARTeSYN Sellers"), and Michael Gagne, solely in his capacity as the representative of the ARTeSYN Sellers, pursuant to which the Company acquired (i) all of the outstanding equity securities of ARTeSYN and (ii) certain assets from Alphinity related to the business of ARTeSYN (collectively, the "ARTeSYN Acquisition") for approximately $200 million, comprised of approximately $130 million in cash to the ARTeSYN Sellers and approximately $70 million in our common stock to Third Creek. The transaction closed on December 3, 2020.

ARTeSYN is headquartered in Waterford, Ireland and conducts its operations in Ireland, the United States and Estonia. Its suite of single-use solutions has been created with the goal of enabling "abundance in medicine" by allowing greater efficiency in biologics manufacturing. The ARTeSYN team has created a number of solutions targeting the single-use space from single-use valves with fully disposable valve liners, XO ® skeletal supports, a hybrid small parts offering for de-bottlenecking traditional facilities, and fully automated SU process systems that have quickly become leading solutions in the bioprocessing industry. ARTeSYN has established downstream processing leadership with a suite of state of the art single-use systems for chromatography, filtration, continuous manufacturing and media/buffer prep workflows. In addition, the Company has integrated unique flow path assemblies utilizing the Company's silicone extrusion and molding technology, to deliver highly differentiated, low hold-up volume systems that minimize product loss during processing. The ARTeSYN portfolio expands on the market success of the Company's hollow fiber systems and complements our chromatography and TFF filtration product lines.

Non-Metallic Solutions, Inc.

On October 15, 2020, we executed a Stock Purchase Agreement with Non-Metallic Solutions, Inc. ("NMS"), a Massachusetts corporation, and each of William Malloneé and Derek Masser, the legal and beneficial owners of NMS, to purchase NMS, which transaction subsequently closed on October 20, 2020 (the "NMS Acquisition").

NMS, headquartered in Auburn, Massachusetts, is a manufacturer of fabricated plastics, custom containers, and related assemblies and components used in the manufacturing of biologic drugs. The acquisition of NMS strengthens the Company's portfolio of single-use integrated systems and flow path assemblies, streamlines our supply chain for current products, and provides greater flexibility to scale and expand single-use and systems portfolios.

Engineered Molding Technology LLC

On July 13, 2020, we completed the acquisition of 100% of the membership interests of EMT, a New York limited liability company, pursuant to a Membership Interest Purchase Agreement, dated June 26, 2020, by and among the Company, EMT, and each of Michael Pandori and Todd Etesse, the legal and beneficial owners of EMT (such acquisition, the "EMT Acquisition").

EMT, headquartered in Clifton Park, New York, is an innovator and manufacturer of single-use silicone assemblies and components used in the manufacturing of biologic drugs. EMT's standard and custom molding as well as their over-molded connectors and silicone tubing products are key components in single-use filtration and chromatography systems. EMT's products complement and expand our single-use product offerings.

Effective July 11, 2021, EMT was absorbed into the Company by way of "short-form" merger pursuant to New York and Delaware law, which did not require a vote of the Company's shareholders.

Critical Accounting Policies and Estimates

A "critical accounting policy" is one which is both important to the portrayal of our financial condition and results and requires management's most difficult, subjective or complex judgments, often as a result of the need to make estimates about the effect of matters that are inherently uncertain. For a description of our critical accounting policies that affect our more significant judgments and estimates used in the preparation of our consolidated financial statements, refer to Management's Discussion and Analysis of Financial Condition and Results of Operations and our significant accounting policies in Note 2 to the consolidated financial statements included in our Form 10-K.

Results of Operations

The following discussion of the financial condition and results of operations should be read in conjunction with the accompanying consolidated financial statements and the related footnotes thereto.

Revenues

Total revenue for the three and six months ended June 30, 2021 and 2020 were as follows:

	Three Months Ended June 30,		Increase/(Decrease)		Six Months Ended June 30,		Increase/(Decrease)	
	2021	2020	$ Change	% Change	2021	2020	$ Change	% Change
	(Amounts in thousands, except for percentage data)							
Revenue:								
Products	$162,920	$87,432	$ 75,488	86.3%	$305,657	$163,492	$142,165	87.0%
Royalty and other	40	30	10	33.3%	140	60	80	133.3%
Total revenue	$162,960	$87,462	$ 75,498	86.3%	$305,797	$163,552	$142,245	87.0%

Product revenues

Direct sales represented approximately 83% and 74% of our product revenue for each of the three months ended June 30, 2021 and 2020, respectively, and represented 82% and 75% of our product revenue for each of the six months ended June 30, 2021 and 2020, respectively. We expect that direct sales will continue to account for an increasing percentage of our product revenues, as the largest customer of our OEM products diversified its supply chain in 2020. Sales of our bioprocessing products can be impacted by the timing of large-scale production orders and the regulatory approvals for such antibodies, which may result in significant quarterly fluctuations.

Revenues from our filtration franchise include the sales of our XCell ATF ® systems and consumables, KrosFlo ® TFF and TFDF systems, TangenX ® flat sheet cassettes, ARTeSYN ® systems, and silicone-molded and plastic consumables offered by EMT and NMS. Revenues from our process analytics franchise includes the sale of our SoloVPE ® , FlowVPE ® and FlowVPX ® systems and associated consumables and service. Revenues from our chromatography franchise include the sales of our OPUS ® pre-packed columns, resins, ELISA test kits and ARTeSYN ® systems. Revenues from our proteins franchise include the sale of our Protein A ligands and cell culture growth factors. Other revenue primarily consists of sales of our operating room products to hospitals as well as freight revenue.

During the three and six months ended June 30, 2021, product revenue increased by $75.5 million, or 86.3% and $142.2 million, or 87.0%, as compared to the same periods of 2020, with exceptionally robust demand for our filtration products. Since the second quarter of 2020, we have experienced accelerated demand across all of our franchises due to the critical needs of customers working on the novel coronavirus ("COVID-19") vaccines and therapeutics. In addition, we saw an increase in demand for gene therapy and monoclonal antibody manufacturing.

Royalty revenues

Royalty revenues in the three and six months ended June 30, 2021 and 2020 relate to royalties received from a third-party systems manufacturer associated with our OPUS PD chromatography columns. Royalty revenues are variable and are dependent on sales generated by our partner.

Costs of product revenue and operating expenses

Total costs and operating expenses for the three and six months ended June 30, 2021 and 2020 were comprised of the following:

	Three Months Ended June 30,		Increase/(Decrease)		Six Months Ended June 30,		Increase/(Decrease)	
	2021	2020	$ Change	% Change	2021	2020	$ Change	% Change
	(Amounts in thousands, except for percentage data)							
Cost of product revenue	$ 61,990	$36,863	$ 25,127	68.2%	$121,737	$ 68,845	$ 52,892	76.8%
Research and development	8,389	4,336	4,053	93.5%	16,001	9,038	6,963	77.0%
Selling, general and administrative	44,341	26,726	17,615	65.9%	83,436	54,226	29,210	53.9%
Total costs and operating expenses	$114,720	$67,925	$ 46,795	68.9%	$221,174	$132,109	$ 89,065	67.4%

Cost of product revenue

Cost of product revenue increased 68.2% and 76.8% in the three and six months ended June 30, 2021, compared to the same periods of 2020, due primarily to the increase in product revenue mentioned above and costs associated with higher product volume. In addition, there was an increase in manufacturing headcount for the three and six months ended June 30, 2021, as compared to the same periods of 2020, which resulted in higher employee-related costs. We completed acquisitions during the second half of 2020, which resulted in an increase in costs of product revenue during these periods in 2021 as well, for which there were no comparable amounts during 2020.

Gross margin was 62.0% and 60.2% in the three and six months ended June 30, 2021. The gross margin for the six months ended June 30, 2021 includes $1.6 million of amortization of inventory step-up associated with the ARTeSYN Acquisition. The gross margin for the six months ended June 30, 2020 was 57.9%. Excluding the step-up amortization, gross margin for the six months ended June 30, 2021 was 60.7%. The increase in gross margin, excluding the inventory step-up amortization, in the six months ended June 30, 2021, as compared to the same period of 2020, is due primarily to the increase in revenue mentioned above, and favorable product mix, partially offset by an increase in manufacturing headcount subsequent to June 30, 2020. Gross margins may fluctuate in future quarters based on expected production volume and product mix.

Research and development expenses

Research and development ("R&D") expenses are related to bioprocessing products, which include personnel, supplies and other research expenses. Due to the size of the Company and the fact that these various programs share personnel and fixed costs, we do not track all of our expenses or allocate any fixed costs by program, and therefore, have not provided historical costs incurred by project.

R&D expenses increased 93.5% during the three months ended June 30, 2021, compared to the same period of 2020. The increase during the period is primarily due to the addition of $1.0 million of R&D expenses incurred by ARTeSYN during the period, for which there were not comparable costs in 2020, and due to the increase in employee related costs as the number of R&D employees has increased since June 30, 2020.

R&D expenses increased 77.0% during the six months ended June 30, 2021, compared to the same period of 2020. The increase during the period is due to the addition of $2.1 million in R&D expenses related to ARTeSYN's operations and increased costs associated with an increase in R&D headcount and the ramp up of project spending for new product development during the first half of 2021.

We expect our R&D expenses for the remainder of 2021 to gradually increase to support new product development.

Selling, general and administrative expenses

Selling, general and administrative ("SG&A") expenses include the costs associated with selling our commercial products and costs required to support our marketing efforts, including legal, accounting, patent, shareholder services, amortization of intangible assets and other administrative functions.

During the three and six months ended June 30, 2021, SG&A costs increased by $17.6 million, or 65.9%, and $29.2 million, or 53.9%, as compared to the same periods of 2020. The increase is partially due to the continued expansion of our customer-facing activities to drive sales of our bioprocessing products, and the continued buildout of our administrative infrastructure, primarily through increased headcount, to support expected future growth. Stock-based compensation expense and other employee-related costs increased during the three and six months ended June 30, 2021, as compared to the same period in 2020, resulting from an increase in headcount period over period. In addition, $3.6 million and $6.8 million of the increase in SG&A costs for the three and six months ended June 30, 2021, respectively, was related to the addition of EMT, NMS and ARTeSYN during the second half of 2020 for which there were no comparable amounts for the same periods of 2020.

Other expenses, net

The table below provides detail regarding our other expenses, net:

	Three Months Ended June 30,		Increase/(Decrease)		Six Months Ended June 30,		Increase/(Decrease)	
	2021	2020	$ Change	% Change	2021	2020	$ Change	% Change
	(Amounts in thousands, except for percentage data)							
Investment income	$ 41	$ 253	$ (212)	(83.8%)	$ 93	$ 1,617	$ (1,524)	(94.2%)
Interest expense	(3,144)	(3,004)	(140)	4.7%	(6,250)	(5,980)	(270)	4.5%
Other expenses	(779)	(766)	(13)	1.7%	(1,003)	(384)	(619)	161.2%
Total other expense, net	$(3,882)	$(3,517)	$ (365)	10.4%	$(7,160)	$(4,747)	$ (2,413)	50.8%

Investment income

Investment income includes income earned on invested cash balances. The decrease of $0.2 million and $1.5 million in the three and six months ended June 30, 2021, as compared to the same periods of 2020, was attributable to a decrease in interest rates on our invested cash balances. In March 2020, in response to the outbreak of COVID-19 and to stay ahead of disruptions and economic slowdown, the Federal Reserve reduced federal funds rates to a range of 0.0% to 0.25%, which will continue to affect our investment income in future periods. We expect investment income to vary based on changes in the amount of funds invested and fluctuation of interest rates.

Interest expense

Interest expense in the three and six months ended June 30, 2021 and 2020 is primarily from our 0.375% Convertible Senior Notes due 2024 (the "2019 Notes"), which were issued in July 2019. Interest expense, which includes the amortization of debt issuance costs and contractual coupon interest, increased $0.1 million and $0.3 million for the three and six months ended June 30, 2021, as compared to the same periods in 2020. This is a result of the decrease in the balance of debt issuance costs that are being amortized. As these costs decrease, the carrying value of the debt increases and interest calculated based on the carrying value increases as well.

Other expenses

The change in other expenses, net during the three and six months ended June 30, 2021, compared to the same period of 2020, is primarily attributable to realized foreign currency losses related to amounts due from non-Swedish krona-based customers and vendors.

Income tax provision

Income tax provision for the three and six months ended June 30, 2021 and 2020 was as follows:

	Three Months Ended June 30,		Increase/(Decrease)		Six Months Ended June 30,		Increase/(Decrease)	
	2021	2020	$ Change	% Change	2021	2020	$ Change	% Change
	(Amounts in thousands, except for percentage data)							
Income tax provision	$8,125	$159	$ 7,966	5010.1%	$11,780	$1,020	$ 10,760	1054.9%
Effective tax rate	18.3%	1.0%			15.2%	3.8%		

For the three and six months ended June 30, 2021, we recorded an income tax provision of $8.1 million and $11.8 million, respectively. The effective tax rate was 18.3% and 15.2% for the three and six months ended June 30, 2021 and is based upon the estimated income for the year ending December 31, 2021 and the composition of income in different jurisdictions. The increase in effective tax rates was primarily due to higher income before income taxes, lower windfall benefits recognized on stock option exercises and the vesting of stock units, partially offset by lower U.S. taxation of foreign earnings. The effective tax rate for the three and six months ended June 30, 2021 was lower than the U.S. statutory rate of 21% primarily due to business tax credits and windfall benefits on stock option exercises and the vesting of stock units. For the three and six months ended June 30, 2020, we recorded an income tax provision of $0.2 million and $1.0 million, respectively. The effective tax rate was 1.0% and 3.8% for the three and six months ended June 30, 2020 and is based upon the estimated income for the year ending December 31, 2020 and the composition of income in different jurisdictions. The effective tax rate for the three and six months ended June 30, 2020 was lower than the U.S. statutory rate of 21% primarily due to windfall benefits on stock option exercise and the vesting of stock units.

Non-GAAP Financial Measures

We provide non-GAAP adjusted income from operations; adjusted net income; and adjusted EBITDA as supplemental measures to GAAP measures regarding our operating performance. These financial measures exclude the items detailed below and, therefore, have not been calculated in accordance with GAAP. A detailed explanation and a reconciliation of each non-GAAP financial measure to its most comparable GAAP financial measure are provided below.

We include this financial information because we believe these measures provide a more accurate comparison of our financial results between periods and more accurately reflect how management reviews its financial results. We excluded the impact of certain acquisition-related items because we believe that the resulting charges do not accurately reflect the performance of our ongoing operations for the period in which such charges are incurred.

Non-GAAP adjusted income from operations

Non-GAAP adjusted income from operations is measured by taking income from operations as reported in accordance with GAAP and excluding inventory step-up charges, acquisition and integration costs, and intangible amortization booked through our consolidated statements of comprehensive income. The following is a reconciliation of income from operations in accordance with GAAP to non-GAAP adjusted income from operations for the three and six months ended June 30, 2021 and 2020:

	Three Months Ended June 30,		Six Months Ended June 30,	
	2021	2020	2021	2020
	(Amounts in thousands)			
GAAP income from operations	$48,240	$19,537	$ 84,623	$31,443
Non-GAAP adjustments to income from operations:				
Inventory step-up charges	—	—	1,598	—
Acquisition and integration costs	3,218	2,134	5,769	4,687
Intangible amortization	5,161	3,874	10,323	7,752
Non-GAAP adjusted income from operations	$56,619	$25,545	$102,313	$43,882

Non-GAAP adjusted net income

Non-GAAP adjusted net income is measured by taking net income as reported in accordance with GAAP and excluding acquisition and integration costs, intangible amortization, inventory step-up charges, loss on conversion of debt, non-cash interest expense and the tax effects of these items. The following are reconciliations of net income in accordance with GAAP to non-GAAP adjusted net income for the three and six months ended June 30, 2021 and 2020:

	Three Months Ended June 30,			
	2021		2020	
	Amount	Fully Diluted Earnings per Share	Amount	Fully Diluted Earnings per Share
	(Amounts in thousands, except per share data)			
GAAP net income	$36,233	$ 0.64	$15,861	$ 0.30
Non-GAAP adjustments to net income:				
Acquisition and integration costs	3,218	0.06	2,134	0.04
Intangible amortization	5,161	0.09	3,874	0.07
Loss on conversion of debt	4	—	—	—
Non-cash interest expense	2,862	0.05	2,724	0.05
Tax effect of non-GAAP charges	(2,615)	(0.05)	(2,085)	(0.04)
Non-GAAP adjusted net income	$44,863	$ 0.79	$22,508	$ 0.42

	Six Months Ended June 30,			
	2021		2020	
	Amount	Fully Diluted Earnings per Share	Amount	Fully Diluted Earnings per Share
	(Amounts in thousands, except per share data)			
GAAP net income	$65,683	$ 1.16	$25,676	$ 0.48
Non-GAAP adjustments to net income:				
Inventory step-up charges	1,598	0.03	—	—
Acquisition and integration costs	5,769	0.10	4,687	0.09
Intangible amortization	10,323	0.18	7,752	0.15
Loss on conversion of debt	4	—	—	—
Non-cash interest expense	5,690	0.10	5,415	0.10
Tax effect of non-GAAP charges	(5,437)	(0.10)	(4,262)	(0.08)
Non-GAAP adjusted net income	$83,630	$ 1.47	$39,268	$ 0.74

* Per share totals may not add due to rounding.

Adjusted EBITDA

Adjusted EBITDA is measured by taking net income as reported in accordance with GAAP, excluding investment income, interest expense, taxes, depreciation and amortization, acquisition and integration costs, inventory step-up charges and loss on conversion of debt booked through our consolidated statements of comprehensive income. The following is a reconciliation of net income in accordance with GAAP to adjusted EBITDA for the three and six months ended June 30, 2021 and 2020:

	Three Months Ended June 30,		Six Months Ended June 30,	
	2021	2020	2021	2020
	(Amounts in thousands)			
GAAP net income	$36,233	$15,861	$ 65,683	$25,676
Non-GAAP EBITDA adjustments to net income:				
Investment income	(41)	(253)	(93)	(1,617)
Interest expense	3,144	3,004	6,250	5,980
Tax provision	8,125	159	11,780	1,020
Depreciation	3,797	2,578	7,052	5,063
Amortization	5,190	3,902	10,379	7,807
EBITDA	56,448	25,251	101,051	43,929
Other non-GAAP adjustments:				
Inventory step-up charges	—	—	1,598	—
Acquisition and integration costs	3,218	2,134	5,769	4,687
Loss on conversion of debt	4	—	4	—
Adjusted EBITDA	$59,670	$27,385	$108,422	$48,616

Liquidity and Capital Resources

We have financed our operations primarily through revenues derived from product sales, the issuance of the 2019 Notes in July 2019 and the issuance of common stock in our December 2020, July 2019 and May 2019 public offerings (the "Offerings"). Our revenue for the foreseeable future will primarily be limited to our bioprocessing product revenue.

At June 30, 2021, we had cash and cash equivalents (excluding restricted cash) of $734.3 million compared to cash and cash equivalents (excluding restricted cash) of $717.3 million at December 31, 2020.

During the second quarter of 2021, the closing price of the Company's common stock exceeded 130% of the conversion price of the 2019 Notes for more than 20 trading days of the last 30 consecutive trading days of the quarter. As a result, the 2019 Notes are convertible at the option of the holders of the 2019 Notes during the third quarter of 2021, the quarter immediately following the quarter when the conditions are met, per the First Supplemental Indenture underlying the 2019 Notes. These conditions were also met during the fourth quarter of 2020 and the first quarter of 2021. As a result, the Company received notices from note holders that they would convert $6,000 aggregate principal amount of the 2019 Notes, of which $1,000 principal were settled during the first quarter of 2021, $4,000 principal were settled during the second quarter of 2021 and $1,000 principal will be settled during the third quarter of 2021. The conversions resulted in the issuance of a nominal number of shares of the Company's common stock to the holder, and the Company recorded a loss of approximately $4,000 on the conversion of these notes, which is included in other expenses, net on our consolidated statements of comprehensive income for the three and six months ended June 30, 2021. The 2019 Notes have a face value of $287.5 million and a carrying value and a carrying value of $249.4 million and continue to be classified as current liabilities on the Company's consolidated balance sheet as of June 30, 2021. It is the Company's policy and intent to settle the face value of the 2019 Notes in cash and any excess conversion premium in shares of our common stock.

In July 2020, the Company entered into a First Amendment to the lease agreement for its Marlborough, Massachusetts facility, expanding the leased space by 66,939 square feet. In December 2020, the Company signed the Second Amendment to the lease agreement, changing the commencement date from April 1, 2021 to January 1, 2021. As a result, under the amended lease agreement, the Company will pay an additional $5.7 million in base rent over the life of the lease, which expires on November 30, 2028.

In May 2021, the Company entered into an agreement to lease approximately 64,000 square feet of space at a site in Hopkinton, Massachusetts, which expires on August 15, 2034. This space will be used as an assembly center for our ProConnex ® single-use flow path products. Under the lease, the Company will pay $17.7 million in base rent over the term of the lease.

Cash flows

	Six Months Ended June 30,		Increase/ (Decrease)
	2021	2020	$ Change
	(Amounts in thousands)		
Operating activities	$ 46,913	$26,265	$ 20,648
Investing activities	(26,198)	(9,517)	(16,681)
Financing activities	852	5,402	(4,550)
Effect of exchange rate changes on cash, cash equivalents and restricted cash	(4,532)	807	(5,339)
Net increase in cash, cash equivalents and restricted cash	$ 17,035	$22,957	$ (5,922)

Operating activities

For the six months ended June 30, 2021, our operating activities provided cash of $46.9 million reflecting net income of $65.7 million and non-cash charges totaling $43.8 million primarily related to depreciation, amortization, deferred income taxes, amortization of debt discount and issuance costs, and stock-based compensation charges. An increase in accounts receivable consumed $31.9 million of cash and was primarily driven by the 87.0% year-to-date increase in revenues. An increase in inventory manufactured of $42.8 million supports expected increases in future revenue. The increases in accounts receivable and inventory manufactured are offset by an increase in accounts payable of $8.3 million, which was primarily due to increased inventory purchases to support customer orders, an increase in accrued liabilities of $4.5 million, which was due to an increase in the accrual for expected costs, and to a decrease in deferred revenue related to products shipped during the first half of 2021. The remaining cash used in operating activities resulted from unfavorable changes in various other working capital accounts.

For the six months ended June 30, 2020, our operating activities provided cash of $26.3 million reflecting net income of $25.7 million and non-cash charges totaling $24.8 million primarily related to depreciation, amortization, deferred income taxes, non-cash interest expense and stock-based compensation charges. An increase in accounts receivable consumed $6.0 million of cash and was primarily driven by the 24.5% year-to-date increase in revenues. An increase in inventory consumed $15.0 million to support future revenue. A decrease in accounts payable and accrued liabilities of $4.1 million was due primarily to the payment of the $9.0 million to employees during the second quarter of 2020 for C Technologies acquisition-related bonuses. The remaining cash provided by operating activities resulted from favorable changes in various other working capital accounts.

Investing activities

Our investing activities consumed $26.2 million of cash during the six months ended June 30, 2021, primarily related to the ongoing capital expenditures as we continue to increase our manufacturing capacity worldwide. Of these expenditures, $2.2 million represented capitalized costs related to our internal-use software.

Capital expenditures for the six months ended June 30, 2020 included $2.2 million for capitalized costs related to our internal-use software.

Financing activities

Cash provided by financing activities of $0.9 million for the six months ended June 30, 2021 included proceeds from stock option exercises during the period. Proceeds from stock option exercises during the six months ended June 30, 2020 were $5.4 million.

Working capital increased by $68.1 million to $651.5 million at June 30, 2021 from $583.4 million at December 31, 2020 due to the various changes noted above.

Our future capital requirements will depend on many factors, including the following:

- the expansion of our bioprocessing business;
- the ability to sustain sales and profits of our bioprocessing products;
- our ability to acquire additional bioprocessing products;
- the scope of and progress made in our R&D activities;
- the extent of any share repurchase activity; and
- the success of any proposed financing efforts.

Absent acquisitions of additional products, product candidates or intellectual property, we believe our current cash balances are adequate to meet our cash needs for at least the next 24 months from the date of this filing. We expect operating expenses for the rest of the year to increase as we continue to expand our bioprocessing business. We expect to incur continued spending related to the development and expansion of our bioprocessing product lines and expansion of our commercial capabilities for the foreseeable future. Our future capital requirements may include, but are not limited to, purchases of property, plant and equipment, the acquisition of additional bioprocessing products and technologies to complement our existing manufacturing capabilities, and continued investment in our intellectual property portfolio.

We plan to continue to invest in our bioprocessing business and in key R&D activities associated with the development of new bioprocessing products. We actively evaluate various strategic transactions on an ongoing basis, including licensing or acquiring complementary products, technologies or businesses that would complement our existing portfolio. We continue to seek to acquire such potential assets that may offer us the best opportunity to create value for our shareholders. In order to acquire such assets, we may need to seek additional financing to fund these investments. If our available cash balances and anticipated cash flow from operations are insufficient to satisfy our liquidity requirements, including because of any such acquisition-related financing needs or lower demand for our products, we may seek to sell common or preferred equity or convertible debt securities, enter into a credit facility or another form of third-party funding, or seek other debt funding. The sale of equity and convertible debt securities may result in dilution to our shareholders, and those securities may have rights senior to those of our common shares. If we raise additional funds through the issuance of preferred stock, convertible debt securities or other debt financing, these securities or other debt could contain covenants that would restrict our operations. Any other third-party funding arrangement could require us to relinquish valuable rights. We may require additional capital beyond our currently anticipated amounts. Additional capital may not be available on reasonable terms, if at all.

Off-Balance Sheet Arrangements

We do not have any special purpose entities or off-balance sheet financing arrangements as of June 30, 2021.

Net Operating Loss Carryforwards

At December 31, 2020, we had net operating loss carryforwards of $6.4 million remaining. We had business tax credits carryforwards of $9.4 million available to reduce future federal income taxes, if any. The business tax credits carryforwards will continue to expire at various dates through December 2039. Net operating loss carryforwards and available tax credits are subject to review and possible adjustment by the Internal Revenue Service, state and foreign jurisdictions and may be limited in the event of certain changes in the ownership interest of significant shareholders.

Effects of Inflation

Our assets are primarily monetary, consisting of cash, cash equivalents and marketable securities. Because of their liquidity, these assets are not directly affected by inflation. Since we intend to retain and continue to use our equipment, furniture and fixtures and leasehold improvements, we believe that the incremental inflation related to replacement costs of such items will not materially affect our operations. However, the rate of inflation affects our expenses, such as those for employee compensation and contract services, which could increase our level of expenses and the rate at which we use our resources.

Cautionary Statement Regarding Forward-Looking Statements

This Quarterly Report on Form 10-Q contains forward-looking statements which are made pursuant to the safe harbor provisions of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended (the "Exchange Act"). The forward-looking statements in this Quarterly Report on Form 10-Q do not constitute guarantees of future performance. Investors are cautioned that statements in this Quarterly Report on Form 10-Q which are not strictly historical statements, including, without limitation, express or implied statements or guidance regarding current or future financial performance and position, potential impairment of future earnings, management's strategy, plans and objectives for future operations or acquisitions, product development and sales, product candidate research, development and regulatory approval, SG&A expenditures, intellectual property, development and manufacturing plans, availability of materials and product and adequacy of capital resources, our financing plans, and the projected impact of, and response to, the COVID-19 coronavirus pandemic and the related downturn of the U.S. and global economies constitute forward-looking statements. These forward-looking statements are based on current expectations, estimates, forecasts and projections about the industry and markets in which the Company operates, and management's beliefs and assumptions. The Company undertakes no obligation to publicly update or revise the statements in light of future developments. In addition, other written and oral statements that constitute forward-looking statements may be made by the Company or on the Company's behalf. Words such as "expect," "seek," "anticipate," "intend," "plan," "believe," "could," "estimate," "may," "target," "project," or variations of such words and similar expressions are intended to identify forward-looking statements. Such forward-looking statements are subject to a number of risks and uncertainties that could cause actual results to differ materially from those anticipated, including, without limitation, risks associated with the following: the ultimate impact of the coronavirus pandemic on our business or financial results; the success of current and future collaborative or supply relationships, including our agreements with Cytiva, MilliporeSigma and Purolite; our ability to successfully grow our bioprocessing business, including as a result of acquisitions, commercialization or partnership opportunities, and our ability to develop and commercialize products; our ability to obtain required regulatory approvals; our compliance with all U.S. Food and Drug Administration regulations, our ability to obtain, maintain and protect intellectual property rights for our products; the risk of litigation regarding our patent and other intellectual property rights; the risk of litigation with collaborative partners; our limited manufacturing capabilities and our dependence on third-party manufacturers and value-added resellers; the effect of the COVID-19 coronavirus pandemic, including mitigation efforts and economic effects, on our business operations and the operations of our customers and suppliers; our ability to hire and retain skilled personnel; the market acceptance of our products, reduced demand for our products that adversely impacts our future revenues, cash flows, results of operations and financial condition; our ability to integrate Non-Metallic Solutions, Inc., ARTe SYN Biosolutions Holding Ireland Limited and Polymem S.A. businesses successfully into our business and achieve the expected benefits of the acquisitions ; our ability to compete with larger, better financed life sciences companies; our history of losses and expectation of incurring losses; our ability to generate future revenues; our ability to successfully integrate our recently acquired businesses; our ability to raise additional capital to fund potential acquisitions; our volatile stock price; and the effects of our anti-takeover provisions. Further information on potential risk factors that could affect our financial results are included in the filings made by us from time to time with the SEC including under the sections entitled "Risk Factors" in our Form 10-K.

ITEM 3. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

Interest Rate Risk

We have historically held investments in commercial paper, U.S. Government and agency securities as well as corporate bonds and other debt securities. As a result, we have been exposed to potential loss from market risks that may occur as a result of changes in interest rates, changes in credit quality of the issuer or otherwise. We do not have any such investments as of June 30, 2021. As a result, a hypothetical 100 basis point increase in interest rates would have no effect on our cash position as of June 30, 2021.

We generally place our marketable security investments in high quality credit instruments, as specified in our investment policy guidelines. We believe that the conservative nature of our investments mitigates our interest rate exposure, and our investment policy limits the amount of our credit exposure to any one issue, issuer (with the exception of U.S. agency obligations) and type of instrument. We do not expect any material losses from our marketable security investments and therefore believe that our potential interest rate exposure is limited.

Foreign Exchange Risk

The reporting currency of the Company is U.S. dollars, and the functional currency of each of our foreign subsidiaries is its respective local currency. Our foreign currency exposures include the Swedish krona, Euro, British pound, Chinese yuan, Japanese yen, Singapore dollar, South Korean won and Indian rupee; of these, the primary foreign currency exposures are the Swedish krona, Euro and British pound. Exchange gains or losses resulting from the translation between the transactional currency and the functional currency are included in net income. Fluctuations in exchange rates may adversely affect our results of operations, financial position and cash flows. We currently do not seek to hedge this exposure to fluctuations in exchange rates.

ITEM 4. CONTROLS AND PROCEDURES

Disclosure Controls and Procedures

The Company's management, with the participation of the principal executive officer and the principal financial officer, has evaluated the effectiveness of the Company's disclosure controls and procedures (as defined in Rules 13a-15(e) or 15d-15(e) under the Exchange Act) as of the end of the period covered by this report. Based on such evaluation, the principal executive officer and principal financial officer have concluded that, as of the end of such period, the Company's disclosure controls and procedures were effective at the reasonable assurance level.

Changes in Internal Control

In connection with our initiative to integrate and enhance our global information technology systems and business processes, we continued the phased implementation of a new enterprise resource planning ("ERP") system. The ERP system is being implemented in phases through 2022. The third phase was completed during the second quarter of 2021. In addition, we completed the implementation of a consolidation system during the second quarter of 2021. The implementation of that system is expected to, among other things, automate a number of accounting and reporting processes and activities, thereby decreasing the amount of manual processes previously required. As a result of these implementations, we modified certain existing internal controls over financial reporting as well as implemented new controls and procedures related to the new ERP system and consolidation system as of June 30, 2021.

Other than the foregoing, there have been no changes in our internal control over financial reporting identified in connection with the evaluation required by paragraph (d) of Securities Exchange Act Rule 13a-15 or Rule 15d-15 that occurred in the three months ended June 30, 2021 that have materially affected, or are 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 and claims in the ordinary course of business. We are not currently aware of any such proceedings or claims that we believe will have, individually or in the aggregate, a material adverse effect on our business, financial condition or results of operations.

ITEM 1A. RISK FACTORS

The matters discussed in this Quarterly Report on Form 10-Q include forward-looking statements that involve risks or uncertainties. These statements are neither promises nor guarantees, but are based on various assumptions by management regarding future circumstances, over many of which Repligen has little or no control. A number of important risks and uncertainties, including those identified under the caption *"Risk Factors"* in Part I, Item 1A of our Form 10-K for the period ended December 31, 2020 and in subsequent filings, could cause our actual results to differ materially from those in the forward-looking statements. There are no material changes to the risk factors described in our Form 10-K for the period ended December 31, 2020.

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

None.

ITEM 3. DEFAULTS UPON SENIOR SECURITIES

None.

ITEM 4. MINE SAFETY DISCLOSURES

Not applicable.

ITEM 5. OTHER INFORMATION

None.

ITEM 6. EXHIBITS

(a) Exhibits

Exhibit Number	Document Description
3.1	Restated Certificate of Incorporation, dated June 30, 1992 and amended September 17, 1999 (filed as Exhibit 3.1 to Repligen Corporation's Quarterly Report on Form 10-Q for the quarter ended September 30, 1999 and incorporated herein by reference).
3.2	Certificate of Amendment to the Certificate of Incorporation of Repligen Corporation, effective as of May 16, 2014 (filed as Exhibit 3.1 to Repligen Corporation's Current Report on Form 8-K filed on May 19, 2014 and incorporated herein by reference).
3.3	Third Amended and Restated Bylaws (filed as Exhibit 3.1 to Repligen Corporation's Current Report on Form 8-K filed on January 28, 2021 and incorporated herein by reference).
10.1 +#	Repligen Corporation 2018 Stock Option and Incentive Plan, Sub-Plan for French-Qualified Restricted Stock Units.
31.1 +	Rule 13a-14(a)/15d-14(a) Certification.
31.2 +	Rule 13a-14(a)/15d-14(a) Certification.
32.1*	Certification pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
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.
101.SCH+	Inline XBRL Taxonomy Extension Schema Document.
101.CAL+	Inline XBRL Taxonomy Extension Calculation Linkbase Document.
101.DEF+	Inline XBRL Taxonomy Extension Definition Linkbase Document.
101.LAB+	Inline XBRL Taxonomy Extension Label Linkbase Document.
101.PRE+	Inline XBRL Taxonomy Extension Presentation Linkbase Document.
104+	Cover Page Interactive Data File (formatted as Inline XBRL with applicable taxonomy extension information contained in Exhibits 101.*).

Management contract or compensatory plan or arrangement.
\+ Filed herewith.
* Furnished herewith.

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.

REPLIGEN CORPORATION

Date: July 27, 2021

By: /s/ TONY J. HUNT

Tony J. Hunt
President and Chief Executive Officer
(Principal executive officer)
Repligen Corporation

Date: July 27, 2021

By: /s/ JON S NODGRES

Jon Snodgres
Chief Financial Officer
(Principal financial officer)
Repligen Corporation

EXHIBIT 10.1

REPLIGEN CORPORATION

2018 STOCK OPTION AND INCENTIVE PLAN

SUB-PLAN FOR FRENCH-QUALIFIED RESTRICTED STOCK UNITS

This appendix (the "*Sub-Plan for French-Qualified Restricted Stock Units*") amends and supplements certain terms and conditions of the Repligen Corporation 2018 Stock Option and Incentive Plan (the "*Plan*"), in accordance with Section 2(g) of the Plan. All capitalized terms used herein and not otherwise defined shall have the respective meanings set forth in the Plan.

SECTION 1. GENERAL PURPOSE; DEFINITIONS; INTERPRETATION

(a) General Purpose. The purpose of this Sub-Plan for French-Qualified Restricted Stock Units is to permit certain Restricted Stock Units granted under the Plan to qualify for the specific French tax and social security regime applicable to *actions gratuites* granted under articles L225-197-1 to L255-197-6 of the French *Code de commerce*.

(b) Definitions. The following terms shall be defined as set forth below:

"Dealing Day" means any day the regulated securities exchange on which the Company's capital stock is admitted to quotation is open for business transactions.

"Disability" means a state of disability (*invalidité*) of second or third category as defined in article L341-4 of the French *Code de la sécurité sociale*.

"*Eligible French Grantee*" means any French Resident who, on the relevant grant date, is;

- employed by the Company or a Subsidiary under a contract that qualifies as employment contract (*contrat de travail*) under French labor laws; or
- serving as corporate director or officer (*mandataire social*) with executive management functions of the Company; or
- serving as corporate director or officer (*mandataire social*) with executive management functions of a Subsidiary, provided that (i) the Company's capital stock is admitted to quotation on a regulated securities exchange and (ii) the specific provisions set forth in article L225-197-6 of the French *Code de commerce* are complied with.

"French Participant" means any Eligible French Grantee who holds French-Qualified Restricted Stock Units or shares of Stock issued upon settlement of French-Qualified Restricted Stock Units or, if the context so requires, his or her legal representative, guardian or estate.

"*French Resident*" means any natural person who is a French resident for income tax purposes and/or who falls within the scope of the French social security regulation.

For the avoidance of doubt, the above list is limitative and excludes in particular, without limitation, corporate directors and officers with executive management functions of any Subsidiary (if the Company's capital stock is not admitted to quotation on a regulated securities exchange) and Consultants.

"French-Qualified Restricted Stock Unit" means any Restricted Stock Unit awarded to an Eligible French Grantee under this Sub-Plan for French-Qualified Restricted Stock Units.

(c) Interpretation.

(i) French-Qualified Restricted Stock Units represent conditional rights to be issued for free a certain number of shares of Stock if certain conditions specified in the relevant Award Certificates are satisfied.

(ii) A French Participant shall have no rights as a stockholder as to the shares of Stock underlying his or her French-Qualified Restricted Stock Units until such French-Qualified Restricted Stock Units are vested and actually settled in shares of Stock. For the avoidance of doubt, a French Participant may not be credited with Dividend Equivalent Rights with respect to the shares of Stock underlying his or her French-Qualified Restricted Stock Units.

(iii) The Service Relationship of a French Participant with the Company or the relevant Subsidiary, to the extent this relationship is governed by French labor law, shall be considered terminated:

- (in case of dismissal (*licenciement*)) on the date of receipt by (or of first presentation to) the French Participant of the dismissal letter (*lettre de notification de licenciement*); or
- (in case of contractual termination (*rupture conventionnelle*)) on the date on which the termination agreement (*convention de rupture*) is executed between the French Participant and the Company or relevant Subsidiary; or
- (in case of resignation (*démission*)) on the date of receipt by (or of first presentation to) the Company or relevant Subsidiary of the resignation letter (*lettre de démission*) or, if such resignation letter specifies a term, on the date of such term.

SECTION 2. GRANT OF FRENCH-QUALIFIED RESTRICTED STOCK UNITS; ADJUSTMENTS

(a) No Restricted Stock Units shall be granted to a French Resident if that French Resident does not qualify as an Eligible French Grantee on the relevant grant date. Awards of Restricted Stock Units granted to an Eligible French Grantee shall relate exclusively to French-Qualified Restricted Stock Units, and this shall be specified in the relevant Award Certificate.

(b) No French-Qualified Restricted Stock Units shall be granted to an Eligible French Grantee who owns more than 10% of the share capital of the Company on the relevant grant date or would own more than 10% of the share capital of the Company upon settlement of such French-Qualified Restricted Stock Units.

(c) If a transaction or event affects the Company's capital stock, there shall be no adjustments made to French-Qualified Restricted Stock Units granted to French Participants except:

(i) if the outstanding shares of Stock are exchanged for different shares as a result of a merger (*fusion*) or demerger (*scission*), in which case such different shares may be substituted for the shares of Stock underlying French-Qualified Restricted Stock Units that do not forfeit upon completion of the transaction; and

(ii) if the Company's capital stock is affected as a result of an event similar to one of those listed in article L225-181 of the French *Code de commerce*, in which case adjustments similar to those prescribed in articles R.225-137 and following of the French *Code de commerce* may be made to Awards granted to French Participants (including in particular any adjustment to the number or nature of shares underlying the relevant French-Qualified Restricted Stock Units),

in each case provided that (x) the substitution or adjustments shall not provide any additional benefit or gain to the French Participants and the purpose and effects of such substitution or adjustments shall only be to preserve the rights of the French Participants unaffected and (y) the French Participants shall not receive, or be entitled to receive, any cash payment as a result thereof (including for the avoidance of doubt as indemnification for fractions of shares or otherwise).

SECTION 3. VESTING; SETTLEMENT OF FRENCH-QUALIFIED RESTRICTED STOCK UNITS

(a) Subject to the provisions of paragraphs (b) and (c) of this Section 3, the vesting date in respect of any French-Qualified Restricted Stock Units shall in no event occur before the first anniversary of the relevant grant date.

(b) In case of death of a French Participant, his or her estate may, within the six months following the death of the French Participant, require the immediate settlement of that French Participant's vested French-Qualified Restricted Stock Units; failing that the French-Qualified Restricted Stock Units of the deceased French Participant shall automatically and without notice terminate and be forfeited.

(c) In case of Disability of a French Participant, the Administrator may in its sole discretion accelerate the vesting of that French Participant's French-Qualified Restricted Stock Units.

(d) French-Qualified Restricted Stock Units shall be settled exclusively in shares of Stock (and not in cash or a mix of shares of Stock and cash).

(e) All shares of Stock issued to French Participants upon settlement of French-Qualified Restricted Stock Units shall have a nominative form (*titres nominatifs*) or shall be registered in specific "mentioned by name accounts" (*comptes-titres nominatifs*) in the Company's registers.

SECTION 4. RESTRICTIONS ON TRANSFER

(a) Subject to the provisions of paragraphs (b) and (c) of this Section 4, shares of Stock issued upon settlement of French-Qualified Restricted Stock Units shall not be sold, exchanged or otherwise disposed of (including for the avoidance of doubt in case of occurrence of a Sale Event), before the second anniversary of the relevant grant date.

(b) In case of Disability or death of a French Participant, transfer restrictions imposed with respect to shares of Stock issued upon settlement of that French Participant's French-Qualified Restricted Stock Units shall be immediately and automatically waived.

(c) Shares of Stock issued upon settlement of French-Qualified Restricted Stock Units may be exchanged in the context of a merger (*fusion*), demerger (*scission*), public offering (*offre publique*), stock split (*division*) or stock regrouping (*regroupement*) affecting the Company's capital stock, provided that (i) the French Participants are obliged to participate in the relevant transaction or event, (ii) the exchange shall not provide any additional benefit or gain to the French Participants and the purpose and effects of such exchange shall only be to preserve the rights of the French Participants unaffected and (iii) the French Participants shall not receive, or be entitled to receive, any cash payment as a result thereof (including for the avoidance of doubt as indemnification for fractions of shares or otherwise). In this case, shares received by French Participants in exchange for shares of Stock issued upon settlement of French-Qualified Restricted Stock Units shall remain subject to the provisions of the Plan (including this Sub-Plan for French-Qualified Restricted Stock Units) and shall in particular, without limitation, not be sold, exchanged or otherwise disposed of (including for the avoidance of doubt in case of occurrence of a Sale Event) before the second anniversary of the relevant grant date.

(d) So long as the Company's capital stock is admitted to quotation on a regulated securities exchange, and unless the laws applicable to the Company contain similar provisions and offer equivalent warranties, no shares of Stock issued upon settlement of French-Qualified Restricted Stock Units shall be sold, exchanged or otherwise disposed of during (i) the 10 Dealing Days preceding and the 3 Dealing Days following the publication of the consolidated accounts of the Company or, failing that, of its annual accounts and (ii) the period comprised between the date on which the Company's representatives (*organes sociaux*) become aware of information that, should it become public, could significantly influence the market price of the Company's capital stock, and the 10th Dealing Day following the date on which such information becomes public.

(e) Award Certificates relating to French-Qualified Restricted Stock Units granted to Eligible French Grantees who serve as directors or officers (*mandataires sociaux*) with executive management functions of the Company or of a Subsidiary on the relevant grant date shall contain specific additional transfer restrictions in compliance with the last paragraph of section II of article L225-197-1 of the French *Code de commerce*.

SECTION 5. TAXES

(a) In the case where French-Qualified Restricted Stock Units would be cancelled or terminated in exchange for a cash payment, any amounts due to the relevant French Participant shall be deemed to include, to the extent relevant, any income tax, social insurance, payroll tax, fringe benefits tax, payment on account or other tax-related items related to such French Participant's participation in the Plan and legally applicable to that French Participant.

(b) The Company or the relevant Subsidiary shall have the right, but no obligation, to contact, exchange information with or seek guidance or approval from, any tax and social security administrations in order to clarify or secure the tax and social security consequences of any award of French-Qualified Restricted Stock Units.

(c) It is intended that the French-Qualified Restricted Stock Units granted under this Sub-Plan for French-Qualified Restricted Stock Units shall qualify for the specific French tax and social security regime applicable to *actions gratuites* granted under articles L225-197-1 to L255-197-6 of the French *Code de commerce*. However, the Company shall not be deemed making any undertaking or representation that such qualified status will not be questioned or will be maintained, and the Company assumes no responsibility in this respect.

SECTION 6. FULL FORCE; EFFECT

(a) This Sub-Plan for French-Qualified Restricted Stock Units shall be considered as part of the Plan as if fully set forth in the Plan. Except as provided in this Sub-Plan for French-Qualified Restricted Stock Units, all terms and conditions of the Plan shall continue in full force and effect without regard to this Sub-Plan for French-Qualified Restricted Stock Units. To the extent there is any conflict between the terms and provisions of the Plan and the Sub-Plan for French-Qualified Restricted Stock Units, the Sub-Plan for French-Qualified Restricted Stock Units shall control.

(b) The Sub-Plan for French-Qualified Restricted Stock Units shall become effective upon approval by the Board in accordance with applicable state law, the Company's certificate of incorporation and bylaws and the provisions of the Plan. No French-Qualified Restricted Stock Units may be granted to Eligible French Grantees hereunder prior to such approval. French-Qualified Restricted Stock Units may be granted to Eligible French Grantees hereunder within the 76 months following such approval.

DATE ADOPTED BY THE BOARD OF DIRECTORS: June 17, 2021

Exhibit 31.1

CERTIFICATION OF PRINCIPAL EXECUTIVE OFFICER PURSUANT TO RULE 13a-14(a) / RULE 15d-14(a) OF THE SECURITIES EXCHANGE ACT OF 1934, AS AMENDED

I, Tony J. Hunt, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of Repligen 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)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

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

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

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

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

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

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

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

Date: July 27, 2021

/s/ TONY J. HUNT

Tony J. Hunt
President and Chief Executive Officer
(Principal executive officer)

Exhibit 31.2

CERTIFICATION OF PRINCIPAL FINANCIAL OFFICER PURSUANT TO RULE 13a-14(a) / RULE 15d-14(a) OF THE SECURITIES EXCHANGE ACT OF 1934, AS AMENDED

I, Jon Snodgres, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of Repligen 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)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

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

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

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

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

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

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

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

Date: July 27, 2021

/s/ JON SNODGRES

Jon Snodgres
Chief Financial Officer
(Principal financial 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 Repligen Corporation (the "Company") on Form 10-Q for the period ending June 30, 2021 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), the undersigned officers of the Company hereby certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, to my knowledge, that:

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

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

Date: July 27, 2021

By: /s/ TONY J. HUNT

Tony J. Hunt
Chief Executive Officer and President
(Principal executive officer)

Date: July 27, 2021

By: /s/ JON SNODGRES

Jon Snodgres
Chief Financial Officer
(Principal financial officer)

* This certification shall not be deemed "filed" for purposes of Section 18 of the Securities Exchange Act of 1934, or otherwise subject to the liability of that section, nor shall it be deemed to be incorporated by reference into any filing under the Securities Act of 1933 or the Securities Exchange Act of 1934.