UNITED STATES

SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM 10-Q

(Mark One)

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

FOR THE QUARTERLY PERIOD ENDED March 28, 2020

OR

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

FOR THE TRANSITION PERIOD FROM TO

Commission File No. 001-15943

charles river

CHARLES RIVER LABORATORIES INTERNATIONAL, INC.

(Exact Name of Registrant as Specified in Its Charter)

Delaware			**06-1397316**
(State or Other Jurisdiction of Incorporation or Organization)			(I.R.S. Employer Identification No.)
251 Ballardvale Street	**Wilmington**	**Massachusetts**	**01887**
(Address of Principal Executive Offices)			(Zip Code)

(Registrant's telephone number, including area code): **(781) 222-6000**

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

Title of each class	**Ticker symbol(s)**	**Name of each exchange on which registered**
Common stock, $0.01 par value	CRL	New York Stock Exchange

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

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

As of April 24, 2020, there were 49,487,437 shares of the Registrant’s common stock outstanding.

CHARLES RIVER LABORATORIES INTERNATIONAL, INC.

QUARTERLY REPORT ON FORM 10-Q
FOR THE QUARTERLY PERIOD ENDED MARCH 28, 2020

TABLE OF CONTENTS

Special Note on Factors Affecting Future Results

This Quarterly Report on Form 10-Q contains forward-looking statements regarding future events and the future results of Charles River Laboratories International, Inc. that are based on our current expectations, estimates, forecasts and projections about the industries in which we operate and the beliefs and assumptions of our management. Words such as “expect,” “anticipate,” “target,” “goal,” “project,” “intend,” “plan,” “believe,” “seek,” “estimate,” “will,” “likely,” “may,” “designed,” “would,” “future,” “can,” “could,” and other similar expressions which are predictions of, indicate future events and trends or which do not relate to historical matters, are intended to identify such forward-looking statements. These statements are based on our current expectations and beliefs and involve a number of risks, uncertainties and assumptions that are difficult to predict.

For example, we may use forward-looking statements when addressing topics such as: the COVID-19 pandemic, its duration, its impact on our business, results of operations, financial condition, liquidity, use of our borrowings, business practices, operations, suppliers, third party service providers, customers, employees, industry, ability to meet future performance obligations, ability to efficiently implement advisable safety precautions, and internal controls over financial reporting; the COVID-19 pandemic’s impact on demand, the global economy and financial markets; goodwill and asset impairments still under review; changes and uncertainties in the global economy; future demand for drug discovery and development products and services, including the outsourcing of these services; our expectations regarding stock repurchases, including the number of shares to be repurchased, expected timing and duration, the amount of capital that may be expended and the treatment of repurchased shares; the impact of unauthorized access into our information systems, including the timing and effectiveness of any enhanced security and monitoring; present spending trends and other cost reduction activities by our clients; future actions by our management; the outcome of contingencies; changes in our business strategy, business practices and methods of generating revenue; the development and performance of our services and products; market and industry conditions, including competitive and pricing trends; our strategic relationships with leading pharmaceutical and biotechnology companies, venture capital investments, and opportunities for future similar arrangements; our cost structure; the impact of acquisitions, including HemaCare; our expectations with respect to revenue growth and operating synergies (including the impact of specific actions intended to cause related improvements); the impact of specific actions intended to improve overall operating efficiencies and profitability (and our ability to accommodate future demand with our infrastructure), including gains and losses attributable to businesses we plan to close, consolidate, divest or repurpose; changes in our expectations regarding future stock option, restricted stock, performance share units, and other equity grants to employees and directors; expectations with respect to foreign currency exchange; assessing (or changing our assessment of) our tax positions for financial statement purposes; and our liquidity. In addition, these statements include the impact of economic and market conditions on us and our clients; the effects of our cost saving actions and the steps to optimize returns to shareholders on an effective and timely basis; and our ability to withstand the current market conditions.

Forward-looking statements are predictions and are subject to risks, uncertainties and assumptions that are difficult to predict. Therefore, actual results may differ materially and adversely from those expressed in any forward-looking statements. You are cautioned not to place undue reliance on these forward-looking statements, which speak only as of the date of this document, or in the case of statements incorporated by reference, on the date of the document incorporated by reference.

Factors that might cause or contribute to such differences include, but are not limited to, those discussed in our Annual Report on Form 10-K for the year ended December 28, 2019, under the sections entitled “Our Strategy,” “Management’s Discussion and Analysis of Financial Condition and Results of Operations,” and in this Quarterly Report on Form 10-Q, under the sections entitled “Management’s Discussion and Analysis of Financial Condition and Results of Operations” and “Risk Factors,” in our press releases, and other financial filings with the Securities and Exchange Commission. We have no obligation to publicly update or revise any forward-looking statements, whether as a result of new information, future events, or risks. New information, future events, or risks may cause the forward-looking events we discuss in this report not to occur.

PART I. FINANCIAL INFORMATION

Item 1. Financial Statements

CHARLES RIVER LABORATORIES INTERNATIONAL, INC.
CONDENSED CONSOLIDATED STATEMENTS OF INCOME (UNAUDITED)
(in thousands, except per share amounts)

	Three Months Ended	
	March 28, 2020	March 30, 2019
Service revenue	$ 546,592	$ 450,942
Product revenue	160,467	153,627
Total revenue	707,059	604,569
Costs and expenses:		
Cost of services provided (excluding amortization of intangible assets)	372,824	316,800
Cost of products sold (excluding amortization of intangible assets)	82,174	75,992
Selling, general and administrative	129,901	122,574
Amortization of intangible assets	27,879	19,411
Operating income	94,281	69,792
Other income (expense):		
Interest income	316	179
Interest expense	(15,067)	(9,987)
Other (expense) income, net	(24,071)	6,306
Income from operations, before income taxes	55,459	66,290
Provision for income taxes	4,622	10,602
Net income	50,837	55,688
Less: Net income attributable to noncontrolling interests	68	555
Net income attributable to common shareholders	$ 50,769	$ 55,133
Earnings per common share		
Net income attributable to common shareholders:		
Basic	$ 1.03	$ 1.14
Diluted	$ 1.02	$ 1.11
Weighted-average number of common shares outstanding:		
Basic	49,189	48,458
Diluted	49,966	49,462

See Notes to Unaudited Condensed Consolidated Financial Statements.

CHARLES RIVER LABORATORIES INTERNATIONAL, INC.
CONDENSED CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME (UNAUDITED)
(in thousands)

	Three Months Ended	
	March 28, 2020	March 30, 2019
Net income	$ 50,837	$ 55,688
Other comprehensive income (loss):		
Foreign currency translation adjustment and other	(44,855)	9,885
Amortization of net loss and prior service benefit included in net periodic cost for pension and other post-retirement benefit plans	1,374	374
Comprehensive income, before income taxes	7,356	65,947
Less: Income tax benefit related to items of other comprehensive income	(2,039)	(102)
Comprehensive income, net of income taxes	9,395	66,049
Less: Comprehensive income (loss) related to noncontrolling interests, net of income taxes	(476)	1,013
Comprehensive income attributable to common shareholders, net of income taxes	$ 9,871	$ 65,036

See Notes to Unaudited Condensed Consolidated Financial Statements.

CHARLES RIVER LABORATORIES INTERNATIONAL, INC.
CONDENSED CONSOLIDATED BALANCE SHEETS (UNAUDITED)
(in thousands, except per share amounts)

	March 28, 2020	December 28, 2019
Assets		
Current assets:		
Cash and cash equivalents	$ 372,433	$ 238,014
Trade receivables, net	542,390	514,033
Inventories	162,938	160,660
Prepaid assets	68,826	52,588
Other current assets	61,694	56,030
Total current assets	1,208,281	1,021,325
Property, plant and equipment, net	1,033,409	1,044,128
Operating lease right-of-use assets, net	155,568	140,085
Goodwill	1,731,837	1,540,565
Client relationships, net	752,516	613,573
Other intangible assets, net	80,347	75,840
Deferred tax assets	42,753	44,659
Other assets	197,079	212,615
Total assets	$ 5,201,790	$ 4,692,790
Liabilities, Redeemable Noncontrolling Interests and Equity		
Current liabilities:		
Current portion of long-term debt and finance leases	$ 47,667	$ 38,545
Accounts payable	102,697	111,498
Accrued compensation	113,620	158,617
Deferred revenue	178,829	171,805
Accrued liabilities	139,163	139,118
Other current liabilities	108,920	90,598
Total current liabilities	690,896	710,181
Long-term debt, net and finance leases	2,326,770	1,849,666
Operating lease right-of-use liabilities	133,440	116,252
Deferred tax liabilities	197,094	167,283
Other long-term liabilities	173,924	182,933
Total liabilities	3,522,124	3,026,315
Commitments and contingencies (Notes 2, 9, 11, 12, 16 and 17)		
Redeemable noncontrolling interests	24,039	28,647
Equity:		
Preferred stock, $0.01 par value; 20,000 shares authorized; no shares issued and outstanding	—	—
Common stock, $0.01 par value; 120,000 shares authorized; 49,630 shares issued and 49,486 shares outstanding as of March 28, 2020, and 48,936 shares issued and 48,936 shares outstanding as of December 28, 2019	496	489
Additional paid-in capital	1,562,982	1,531,785
Retained earnings	331,098	280,329
Treasury stock, at cost, 144 and 0 shares, as of March 28, 2020 and December 28, 2019, respectively	(23,675)	—
Accumulated other comprehensive loss	(218,917)	(178,019)
Total equity attributable to common shareholders	1,651,984	1,634,584
Noncontrolling interest	3,643	3,244
Total equity	1,655,627	1,637,828
Total liabilities, redeemable noncontrolling interests and equity	$ 5,201,790	$ 4,692,790

See Notes to Unaudited Condensed Consolidated Financial Statements.

CHARLES RIVER LABORATORIES INTERNATIONAL, INC.
CONDENSED CONSOLIDATED STATEMENTS OF CASH FLOWS (UNAUDITED)
(in thousands)

	Three Months Ended	
	March 28, 2020	**March 30, 2019**
Cash flows relating to operating activities		
Net income	$ 50,837	$ 55,688
Adjustments to reconcile net income to net cash provided by operating activities:		
Depreciation and amortization	57,260	45,358
Stock-based compensation	10,960	12,899
Deferred income taxes	(2,973)	7,781
Loss (gain) on venture capital and other investments	12,035	(10,575)
Other, net	10,495	(380)
Changes in assets and liabilities:		
Trade receivables, net	(32,136)	(23,127)
Inventories	4,076	(2,520)
Accounts payable	(10,003)	10,245
Accrued compensation	(45,245)	(55,114)
Deferred revenue	6,065	(14,405)
Customer contract deposits	4,454	(5,866)
Other assets and liabilities, net	2,765	(5,125)
Net cash provided by operating activities	68,590	14,859
Cash flows relating to investing activities		
Acquisition of businesses and assets, net of cash acquired	(382,250)	(989)
Capital expenditures	(25,721)	(16,731)
Purchases of investments and contributions to venture capital investments	(7,121)	(2,419)
Proceeds from sale of investments	2,504	15
Other, net	(1,097)	(689)
Net cash used in investing activities	(413,685)	(20,813)
Cash flows relating to financing activities		
Proceeds from long-term debt and revolving credit facility	1,409,793	290,111
Proceeds from exercises of stock options	22,608	21,832
Payments on long-term debt, revolving credit facility, and finance lease obligations	(925,109)	(360,658)
Purchase of treasury stock	(23,675)	(17,760)
Other, net	(4,405)	(2,608)
Net cash provided by (used in) financing activities	479,212	(69,083)
Effect of exchange rate changes on cash, cash equivalents, and restricted cash	290	6,025
Net change in cash, cash equivalents, and restricted cash	134,407	(69,012)
Cash, cash equivalents, and restricted cash, beginning of period	240,046	197,318
Cash, cash equivalents, and restricted cash, end of period	$ 374,453	$ 128,306
Supplemental cash flow information:		
Cash and cash equivalents	$ 372,433	$ 126,316
Restricted cash included in Other current assets	444	491
Restricted cash included in Other assets	1,576	1,499
Cash, cash equivalents, and restricted cash, end of period	$ 374,453	$ 128,306

See Notes to Unaudited Condensed Consolidated Financial Statements.

CHARLES RIVER LABORATORIES INTERNATIONAL, INC.
CONDENSED CONSOLIDATED STATEMENTS OF CHANGES IN EQUITY (UNAUDITED)
(in thousands)

	Common Stock		Additional Paid-In Capital	Retained Earnings	Accumulated Other Comprehensive Income (Loss)	Treasury Stock		Total Equity Attributable to Common Shareholders	Noncontrolling Interest	Total Equity
	Shares	Amount				Shares	Amount			
December 28, 2019	**48,936**	**$ 489**	**$ 1,531,785**	**$ 280,329**	**$ (178,019)**	**—**	**$ —**	**$ 1,634,584**	**$ 3,244**	**$ 1,637,828**
Net income	—	—	—	50,769	—	—	—	50,769	399	51,168
Other comprehensive income	—	—	—	—	(40,898)	—	—	(40,898)	—	(40,898)
Buy-out and contingent consideration recognition in connection with redeemable noncontrolling interest	—	—	(2,379)	—	—	—	—	(2,379)	—	(2,379)
Issuance of stock under employee compensation plans	694	7	22,616	—	—	—	—	22,623	—	22,623
Acquisition of treasury shares	—	—	—	—	—	144	(23,675)	(23,675)	—	(23,675)
Stock-based compensation	—	—	10,960	—	—	—	—	10,960	—	10,960
March 28, 2020	**49,630**	**$ 496**	**$ 1,562,982**	**$ 331,098**	**$ (218,917)**	**144**	**$ (23,675)**	**$ 1,651,984**	**$ 3,643**	**$ 1,655,627**

	Common Stock		Additional Paid-In Capital	Retained Earnings	Accumulated Other Comprehensive Income (Loss)	Treasury Stock		Total Equity Attributable to Common Shareholders	Noncontrolling Interest	Total Equity
	Shares	Amount				Shares	Amount			
December 29, 2018	**48,210**	**$ 482**	**$ 1,447,512**	**$ 42,096**	**$ (172,703)**	**1**	**$ (55)**	**$ 1,317,332**	**$ 2,446**	**$ 1,319,778**
Net income	—	—	—	55,133	—	—	—	55,133	469	55,602
Other comprehensive income	—	—	—	—	9,903	—	—	9,903	—	9,903
Adjustment of redeemable noncontrolling interest to redemption value	—	—	(1,451)	—	—	—	—	(1,451)	—	(1,451)
Issuance of stock under employee compensation plans	674	7	22,051	—	—	—	—	22,058	—	22,058
Acquisition of treasury shares	—	—	—	—	—	136	(17,760)	(17,760)	—	(17,760)
Stock-based compensation	—	—	12,899	—	—	—	—	12,899	—	12,899
March 30, 2019	**48,884**	**$ 489**	**$ 1,481,011**	**$ 97,229**	**$ (162,800)**	**137**	**$ (17,815)**	**$ 1,398,114**	**$ 2,915**	**$ 1,401,029**

See Notes to Unaudited Condensed Consolidated Financial Statements.

1. BASIS OF PRESENTATION

The accompanying condensed consolidated financial statements are unaudited and have been prepared by Charles River Laboratories International, Inc. (the Company) in accordance with accounting principles generally accepted in the United States (U.S. GAAP) and pursuant to the rules and regulations of the Securities and Exchange Commission (SEC). The year-end condensed consolidated balance sheet data was derived from the Company's audited consolidated financial statements, but does not include all disclosures required by U.S. GAAP. These unaudited condensed consolidated financial statements should be read in conjunction with the Company's Annual Report on Form 10-K for fiscal year 2019. The unaudited condensed consolidated financial statements, in the opinion of management, reflect all normal and recurring adjustments necessary for a fair statement of the Company's financial position and results of operations.

Use of Estimates

The preparation of unaudited condensed consolidated financial statements in accordance with U.S. GAAP requires that the Company make estimates and judgments that may affect the reported amounts of assets, liabilities, revenues, expenses and related disclosure of contingent assets and liabilities. On an on-going basis, the Company evaluates its estimates, judgments, and methodologies. The Company bases its estimates on historical experience and on various other assumptions that are believed to be reasonable, the results of which form the basis for making judgments about the carrying values of assets and liabilities. Actual results may differ from these estimates under different assumptions or conditions. Changes in estimates are reflected in reported results in the period in which they become known.

On March 11, 2020, the World Health Organization declared the outbreak of a strain of novel coronavirus disease, COVID-19, a global pandemic. The COVID-19 pandemic is dynamic and expanding, and its ultimate scope, duration and effects are uncertain. This pandemic has and continues to result in, and any future epidemic or pandemic crises may potentially result in, direct and indirect adverse effects on the Company's industry and customers, which in turn has (with respect to COVID-19) and may (with respect to future epidemics or crises) impact the Company's business, results of operations and financial condition. Further, the COVID-19 pandemic may also affect the Company's operating and financial results in a manner that is not presently known to the Company or that the Company currently does not expect to present significant risks to its operations or financial results. As of the date of issuance of these unaudited condensed consolidated financial statements, the Company is not aware of any specific event or circumstance that would require the Company to update estimates, judgments or revise the carrying value of any assets or liabilities. These estimates may change, as new events occur and additional information is obtained, and are recognized in the condensed consolidated financial statements as soon as they become known. Actual results could differ from those estimates and any such differences may be material to the Company's condensed consolidated financial statements.

Consolidation

The Company's unaudited condensed consolidated financial statements reflect its financial statements and those of its subsidiaries in which the Company holds a controlling financial interest. For consolidated entities in which the Company owns or is exposed to less than 100% of the economics, the Company records net income (loss) attributable to noncontrolling interests in its consolidated statements of income equal to the percentage of the economic or ownership interest retained in such entities by the respective noncontrolling parties. Intercompany balances and transactions are eliminated in consolidation.

The Company's fiscal year is typically based on 52-weeks, with each quarter composed of 13 weeks ending on the last Saturday on, or closest to, March 31, June 30, September 30, and December 31.

Segment Reporting

The Company reports its results in three reportable segments: Research Models and Services (RMS), Discovery and Safety Assessment (DSA), and Manufacturing Support (Manufacturing). The Company's RMS reportable segment includes the Research Models, Research Model Services, and Research Products businesses. Research Models includes the commercial production and sale of small research models, as well as the supply of large research models. Research Model Services includes: Genetically Engineered Models and Services (GEMS), which performs contract breeding and other services associated with genetically engineered models; Research Animal Diagnostic Services (RADS), which provides health monitoring and diagnostics services related to research models; and Insourcing Solutions (IS), which provides colony management of its clients' research operations (including recruitment, training, staffing, and management services). Research Products supplies controlled, consistent, customized primary cells and blood components derived from normal and mobilized peripheral blood, bone marrow, and cord blood. The Company's DSA reportable segment includes services required to take a drug through the early development process including discovery services, which are non-regulated services to assist clients with the identification, screening, and selection of a lead compound for drug development, and regulated and non-regulated (GLP and non-GLP) safety assessment services. The Company's Manufacturing reportable segment includes Microbial Solutions, which provides *in vitro* (non-animal) lot-release testing products, microbial detection products, and species identification

services; Biologics Testing Services (Biologics), which performs specialized testing of biologics; and Avian Vaccine Services (Avian), which supplies specific-pathogen-free chicken eggs and chickens.

Summary of Significant Accounting Policies

The Company's significant accounting policies are described in Note 1, "Description of Business and Summary of Significant Accounting Policies" in the Company's Annual Report on Form 10-K for fiscal year 2019.

Newly Adopted Accounting Pronouncements

In August 2018, the Financial Accounting Standards Board (FASB) issued ASU 2018-15, "Intangibles - Goodwill and Other - Internal-Use Software (Subtopic 350-40): Customer's Accounting for Implementation Costs Incurred in a Cloud Computer Arrangement that is a Service Contract." ASU 2018-15 aligns the requirements for capitalizing implementation costs incurred in a hosting arrangement that is a service contract with the requirements for capitalizing implementation costs incurred to develop or obtain internal-use software (and hosting arrangements that include an internal-use software license). This standard became effective for the Company in the three months ended March 28, 2020 and did not have a significant impact on the unaudited condensed consolidated financial statements and related disclosures.

In August 2018, the FASB issued ASU 2018-13, "Fair Value Measurement (Topic 820) - Disclosure Framework - Changes to the Disclosure Requirements for Fair Value Measurement." ASU 2018-13 removes the disclosure requirement for the amount and reasons for transfers between Level 1 and Level 2 fair value measurements as well as the process for Level 3 fair value measurements. In addition, the ASU adds the disclosure requirements for changes in unrealized gains and losses included in Other comprehensive income (loss) for recurring Level 3 fair value measurements held at the end of the reporting period as well as the range and weighted average of significant unobservable inputs used to develop Level 3 fair value measurements. This standard became effective for the Company in the three months ended March 28, 2020 and did not have a significant impact on the unaudited condensed consolidated financial statements and related disclosures.

In August 2018, the FASB issued ASU 2018-14, "Compensation Retirement Benefits - Defined Benefit Plans -General (Subtopic 715-20)." ASU 2018-14 removes the requirements to disclose the amounts in Accumulated other comprehensive income (loss) expected to be recognized as components of net periodic benefit cost over the next fiscal year and the related party disclosures about the amount of future annual benefits covered by insurance contracts. In addition, the ASU adds the requirement to disclose an explanation for any significant gains and losses related to changes in the benefit obligation for the period. This standard became effective for the Company in the three months ended March 28, 2020 and did not have a significant impact on the unaudited condensed consolidated financial statements and related disclosures.

In January 2017, the FASB issued ASU 2017-04, "Simplifying the Test for Goodwill Impairment." The standard simplifies the accounting for goodwill impairment by removing Step 2 of the goodwill impairment test, which requires a hypothetical purchase price allocation. This standard became effective for the Company in the three months ended March 28, 2020 and did not have an impact on the unaudited condensed consolidated financial statements and related disclosures. The Company performs its annual impairment test during the fourth quarter of a fiscal year and does not expect any significant impact on the consolidated financial statements and related disclosures.

In June 2016, the FASB issued ASU 2016-13, "Financial Instruments - Credit Losses". The standard, including subsequently issued amendments, requires a financial asset measured at amortized cost basis, such as trade and notes receivables, to be presented at the net amount expected to be collected based on relevant information about past events, including historical experience, current conditions, and reasonable and supportable forecasts that affect the collectability of the reported amount. This standard became effective for the Company in the three months ended March 28, 2020 and did not have a significant impact on the unaudited condensed consolidated financial statements and related disclosures.

Newly Issued Accounting Pronouncements

In March 2020, the FASB issued ASU 2020-04, "Reference Rate Reform (Topic 848): Facilitation of the Effects of Reference Rate Reform on Financial Reporting." The ASU offers temporary optional expedients and exceptions for applying U.S. GAAP to modifications to agreements such as loans, debt securities, derivatives, and borrowings which reference LIBOR or another reference rate that is expected to be discontinued by December 31, 2021. The expedients and exceptions provided by the standard do not apply to modifications made and hedging relationships entered into or evaluated after December 31, 2022, except for hedging relationships existing as of December 31, 2022 that an entity has elected certain optional expedients for and are retained through the end of the hedging relationship. The ASU is effective until December 31, 2022 when the replacement for LIBOR is expected to be completed. The interest rate on the Company's senior credit facility, which matures in fiscal year 2023, is linked to LIBOR. The Company is in the process of evaluating options for transitioning away from the senior credit facility's use of LIBOR and expects to be completed by the time LIBOR is phased out. The Company is still evaluating the impact this standard will have on its consolidated financial statements and related disclosures and has yet to elect an adoption date.

In January 2020, the FASB issued ASU 2020-01, "Investments-Equity Securities (Topic 321), Investments-Equity Method and Joint Ventures (Topic 323), and Derivatives and Hedging (Topic 815)." ASU 2020-01 states any equity security transitioning

from the alternative method of accounting under Topic 321 to the equity method, or vice versa, due to an observable transaction will be remeasured immediately before the transition. In addition, the ASU clarifies the accounting for certain non-derivative forward contracts or purchased call options to acquire equity securities stating such instruments will be measured using the fair value principles of Topic 321 before settlement or exercise. The ASU is effective for fiscal years beginning after December 15, 2020, and will be applied on a prospective basis. Early adoption is permitted. The Company is still evaluating the impact this standard will have on its consolidated financial statements and related disclosures, but does not believe there will be a material impact upon adoption.

In December 2019, the FASB issued ASU 2019-12, “Income Taxes (Topic 740): Simplifying the Accounting for Income Taxes.” ASU 2019-12 simplifies the accounting for income taxes by removing exceptions within the general principles of Topic 740 regarding the calculation of deferred tax liabilities, the incremental approach for intraperiod tax allocation, and calculating income taxes in an interim period. In addition, the ASU adds clarifications to the accounting for franchise tax (or similar tax), which is partially based on income, evaluating tax basis of goodwill recognized from a business combination, and reflecting the effect of any enacted changes in tax laws or rates in the annual effective tax rate computation in the interim period that includes the enactment date. The ASU is effective for fiscal years beginning after December 15, 2020, and will be applied either retrospectively or prospectively based upon the applicable amendments. Early adoption is permitted. The adoption of this standard is not expected to have a material impact on the Company’s consolidated financial statements and related disclosures.

2. BUSINESS COMBINATIONS

HemaCare Corporation

On January 3, 2020, the Company acquired HemaCare Corporation (HemaCare), a business specializing in the production of human-derived cellular products for the cell therapy market. The acquisition of HemaCare expands the Company’s comprehensive portfolio of early-stage research and manufacturing support solutions to encompass the production and customization of high-quality, human derived cellular products to better support clients’ cell therapy programs. The purchase price of HemaCare was $379.8 million in cash. The acquisition was funded through a combination of cash on hand and proceeds from the Company’s Credit Facility under the multi-currency revolving facility. See Note 9, “Long-Term Debt and Finance Leases.” This business is reported as part of the Company’s RMS reportable segment.

The preliminary purchase allocation of $376.7 million, net of $3.1 million of cash acquired was as follows:

	January 3, 2020 (in thousands)
Trade receivables	$ 6,451
Inventories	8,468
Other current assets (excluding cash)	3,527
Property, plant and equipment	10,033
Goodwill	209,104
Definite-lived intangible assets	183,540
Other long-term assets	5,920
Current liabilities	(5,188)
Deferred tax liabilities	(37,470)
Other long-term liabilities	(7,664)
Total purchase price allocation	$ 376,721

The purchase price allocation is subject to change as additional information becomes available concerning the fair value and tax basis of the assets acquired and liabilities assumed, including certain contracts and obligations. Any additional adjustments to the purchase price allocation will be made as soon as practicable but no later than one year from the date of acquisition.

The breakout of definite-lived intangible assets acquired was as follows:

	Definite-Lived Intangible Assets	Weighted Average Amortization Life
	(in thousands)	(in years)
Client relationships	$ 170,390	19
Trade name	7,330	10
Other intangible assets	5,820	3
Total definite-lived intangible assets	$ 183,540	18

The goodwill resulting from the transaction is primarily attributable to the potential growth of the Company's RMS business from customers introduced through HemaCare and the assembled workforce of the acquired business. The goodwill attributable to HemaCare is not deductible for tax purposes.

The Company incurred transaction and integration costs in connection with the acquisition of $5.7 million for the three months ended March 28, 2020, which were primarily included in Selling, general and administrative expenses within the unaudited condensed consolidated statements of income.

Beginning on January 3, 2020, HemaCare has been included in the operating results of the Company. HemaCare revenue and operating loss for the three months ended March 28, 2020 was $12.3 million and $2.2 million, respectively.

The following selected unaudited pro forma consolidated results of operations are presented as if the HemaCare acquisition had occurred as of the beginning of the period immediately preceding the period of acquisition, which is December 30, 2018, after giving effect to certain adjustments. For the three months ended March 28, 2020, these adjustments included additional amortization of intangible assets and depreciation of fixed assets of $0.2 million, elimination of intercompany activity and other one-time costs, and the tax impacts of these adjustments. For the three months ended March 30, 2019, these adjustments included additional amortization of intangible assets and depreciation of fixed assets of $3.2 million, additional interest expense on borrowings of $2.8 million, elimination of intercompany activity and other one-time costs, and the tax impacts of these adjustments.

	Three Months Ended	
	March 28, 2020	March 30, 2019
	(in thousands) (unaudited)	
Revenue	$ 707,077	$ 613,456
Net income attributable to common shareholders	55,705	52,186

These unaudited pro forma results of operations have been prepared for comparative purposes only, and they do not purport to be indicative of the results of operations that actually would have resulted had the acquisition occurred on the dates indicated or that may result in the future. No effect has been given for synergies, if any, that may be realized through the acquisition.

Citoxlab

On April 29, 2019, the Company acquired Citoxlab, a non-clinical CRO, specializing in regulated safety assessment services, non-regulated discovery services, and medical device testing. With operations in Europe and North America, the acquisition of Citoxlab further strengthens the Company's position as a leading, global, early-stage CRO by expanding its scientific portfolio and geographic footprint, which enhances the Company's ability to partner with clients across the drug discovery and development continuum. The purchase price for Citoxlab was $527.1 million in cash. The acquisition was funded through a combination of cash on hand and proceeds from the Company's Credit Facility under the multi-currency revolving facility. This business is reported as part of the Company's DSA reportable segment.

The purchase allocation of $490.4 million, net of $36.7 million of cash acquired was as follows:

	April 29, 2019
	(in thousands)
Trade receivables	$ 35,405
Inventories	5,282
Other current assets (excluding cash)	13,917
Property, plant and equipment	88,605
Goodwill	280,161
Definite-lived intangible assets	162,400
Other long-term assets	20,063
Deferred revenue	(15,278)
Current liabilities	(46,081)
Deferred tax liabilities	(27,458)
Other long-term liabilities	(22,624)
Redeemable noncontrolling interest	(4,035)
Total purchase price allocation	$ 490,357

From the date of the acquisition through March 28, 2020, the Company recorded measurement-period adjustments related to the acquisition that resulted in an immaterial change to the purchase price allocation on a consolidated basis. No further adjustments will be made to the purchase price allocation.

The breakout of definite-lived intangible assets acquired was as follows:

	Definite-Lived Intangible Assets	Weighted Average Amortization Life
	(in thousands)	(in years)
Client relationships	$ 134,600	13
Developed technology	19,900	3
Backlog	7,900	1
Total definite-lived intangible assets	$ 162,400	12

The goodwill resulting from the transaction, $7.2 million of which is deductible for tax purposes due to a prior asset acquisition, is primarily attributable to the potential growth of the Company's DSA business from customers introduced through Citoxlab and the assembled workforce of the acquired business.

The Company incurred transaction and integration costs in connection with the acquisition of $1.4 million and $5.2 million for the three months ended March 28, 2020 and March 30, 2019, respectively, which were primarily included in Selling, general and administrative expenses within the unaudited condensed consolidated statements of income.

Beginning on April 29, 2019, Citoxlab has been included in the operating results of the Company. Citoxlab revenue and operating income for the three months ended March 28, 2020 was $45.3 million and $2.5 million, respectively.

The following selected unaudited pro forma consolidated results of operations are presented as if the Citoxlab acquisition had occurred as of the beginning of the period immediately preceding the period of acquisition, which is December 31, 2017, after giving effect to certain adjustments. For the three months ended March 30, 2019, these adjustments included additional amortization of intangible assets and depreciation of fixed assets of $2.6 million, additional interest expense on borrowings of $1.2 million, elimination of intercompany activity and other one-time costs, and the tax impacts of these adjustments.

	Three Months Ended March 30, 2019
	(in thousands) (unaudited)
Revenue	$ 650,875
Net income attributable to common shareholders	61,028

These unaudited pro forma results of operations have been prepared for comparative purposes only, and they do not purport to be indicative of the results of operations that actually would have resulted had the acquisition occurred on the dates indicated or that may result in the future. No effect has been given for synergies, if any, that may be realized through the acquisition.

Other Acquisition

On August 28, 2019, the Company acquired an 80% ownership interest in a supplier that supports the Company's DSA reportable segment. The remaining 20% interest is a redeemable non-controlling interest. See Note 10, "Equity and Noncontrolling Interests." The purchase price was $23.4 million, net of a $4.0 million pre-existing relationship for a supply agreement settled upon acquisition. The acquisition was funded through a combination of cash on hand and proceeds from the Company's Credit Facility under the multi-currency revolving facility. The business is reported as part of the Company's DSA reportable segment.

The purchase allocation of $23.1 million, net of $0.3 million of cash acquired was as follows:

	August 28, 2019
	(in thousands)
Trade receivables	$ 189
Inventories	7,644
Property, plant and equipment	1,462
Goodwill	12,669
Other long-term assets	11,849
Current liabilities	(441)
Deferred tax liabilities	(1,331)
Other long-term liabilities	(238)
Redeemable noncontrolling interest	(8,740)
Total purchase price allocation	$ 23,063

The purchase price allocation is subject to change as additional information becomes available concerning the fair value and tax basis of the assets acquired and liabilities assumed, including certain contracts and obligations. Any additional adjustments to the purchase price allocation will be made as soon as practicable but no later than one year from the date of acquisition. From the date of the acquisition through March 28, 2020, the Company recorded measurement-period adjustments related to the acquisition that resulted in an immaterial change to the purchase price allocation on a consolidated basis.

No significant integration costs were incurred with the acquisition for the three months ended March 28, 2020.

Pro forma financial information as well as the disclosure of actual results have not been included because these financial results are not significant when compared to the Company's consolidated financial results.

3. REVENUE FROM CONTRACTS WITH CUSTOMERS

Disaggregation of Revenue

The following tables disaggregate the Company's revenue by major business line and timing of transfer of products or services:

	Three Months Ended	
	March 28, 2020	March 30, 2019
	(in thousands)	
Major Products/Service Lines:		
RMS	$ 145,996	$ 137,172
DSA	438,683	354,197
Manufacturing	122,380	113,200
Total revenue	$ 707,059	$ 604,569

	Three Months Ended	
	March 28, 2020	March 30, 2019
	(in thousands)	
Timing of Revenue Recognition:		
RMS		
Services and products transferred over time	$ 60,041	$ 54,813
Services and products transferred at a point in time	85,955	82,359
DSA		
Services and products transferred over time	438,564	354,078
Services and products transferred at a point in time	119	119
Manufacturing		
Services and products transferred over time	37,314	31,896
Services and products transferred at a point in time	85,066	81,304
Total revenue	$ 707,059	$ 604,569

RMS

The RMS business generates revenue through the commercial production and sale of research models, research products, and the provision of services related to the maintenance and monitoring of research models and management of clients' research operations. Revenue from the sale of research models and products is recognized at a point in time when the customer obtains control of the product, which may be upon shipment or upon delivery based on the shipping terms of a contract. Revenue generated from research models services is recognized over time and is typically based on a right-to-invoice measure of progress (output method) as invoiced amounts correspond directly to the value of the Company's performance to date.

DSA

The Discovery and Safety Assessment business provides a full suite of integrated drug discovery services directed at the identification, screening and selection of a lead compound for drug development and offers a full range of safety assessment services including bioanalysis, drug metabolism, pharmacokinetics, toxicology and pathology. Discovery and Safety Assessment services revenue is generally recognized over time using the cost-to-cost or right to invoice measures of progress, primarily representing fixed fee service contracts and per unit service contracts, respectively.

Manufacturing

The Manufacturing business includes Microbial Solutions, which provides *in vitro* (non-animal) lot-release testing products, microbial detection products, and species identification services; Biologics Testing Services (Biologics), which performs specialized testing of biologics; and Avian Vaccine Services (Avian), which supplies specific-pathogen-free chicken eggs and chickens. Species identification service revenue is generally recognized at a point in time as identifications are completed by the Company. Biologics service revenue is generally recognized over time using the cost-to-cost measure of progress. Microbial Solutions and Avian product sales are generally recognized at a point in time when the customer obtains control of the product, which may be upon shipment or upon delivery based on the contractual shipping terms of a contract.

Transaction Price Allocated to Future Performance Obligations

The Company discloses the aggregate amount of transaction price that is allocated to performance obligations that have not yet been satisfied as of March 28, 2020. Excluded from the disclosure is the value of unsatisfied performance obligations for (i) contracts with an original expected length of one year or less and (ii) contracts for which revenue is recognized at the amount to which the Company has the right to invoice for services performed. The Company has assessed future performance obligations with respect to the COVID-19 pandemic uncertainties and believes there is an insignificant impact on the ability to meet future performance obligations and the amount of revenue to be recognized.

The following table includes estimated revenue expected to be recognized in the future related to performance obligations that are unsatisfied (or partially satisfied) as of March 28, 2020:

	Revenue Expected to be Recognized in Future Periods				
	Less than 1 Year	1 to 3 Years	4 to 5 Years	Beyond 5 Years	Total
	(in thousands)				
DSA	$ 195,192	$ 92,180	$ 4,861	$ 639	$ 292,872
Manufacturing	10,241	8,825	32	21	19,119
Total	$ 205,433	$ 101,005	$ 4,893	$ 660	$ 311,991

Contract Balances from Contracts with Customers

The timing of revenue recognition, billings and cash collections results in billed receivables (client receivables), contract assets (unbilled revenue), and contract liabilities (current and long-term deferred revenue and customer contract deposits) on the unaudited condensed consolidated balance sheets. The Company's payment terms are generally 30 days in the United States and consistent with prevailing practice in international markets. A contract asset is recorded when a right to consideration in exchange for goods or services transferred to a customer is conditioned other than the passage of time. Client receivables are recorded separately from contract assets since only the passage of time is required before consideration is due. A contract liability is recorded 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. 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. The following table provides information about client receivables, contract assets, and contract liabilities from contracts with customers:

	March 28, 2020	December 28, 2019
	(in thousands)	
Balances from contracts with customers:		
Client receivables	$ 415,359	$ 395,740
Contract assets (unbilled revenue)	131,660	121,957
Contract liabilities (current and long-term deferred revenue)	194,907	192,788
Contract liabilities (customer contract deposits)	37,319	33,080

When the Company does not have the unconditional right to advanced billings, both advanced client payments and unpaid advanced client billings are excluded from deferred revenue, with the advanced billings also being excluded from client receivables. The Company excluded approximately $19 million and $27 million of unpaid advanced client billings from both client receivables and deferred revenue in the accompanying unaudited condensed consolidated balance sheets as of March 28, 2020 and December 28, 2019, respectively. Advanced client payments of approximately $37 million and $33 million have been presented as customer contract deposits within other current liabilities in the accompanying unaudited condensed consolidated balance sheets as of March 28, 2020 and December 28, 2019, respectively.

Other changes in the contract asset and the contract liability balances during the three months ended March 28, 2020 were as follows:

(i) Changes due to business combinations:

See Note 2. "Business Combinations" for client receivables, contract assets, and contract liabilities that were acquired as part of the HemaCare acquisition on January 3, 2020.

(ii) Cumulative catch-up adjustments to revenue that affect the corresponding contract asset or contract liability, including adjustments arising from a change in the measure of progress, a change in an estimate of the transaction price (including any changes in the assessment of whether an estimate of variable consideration is constrained), or a contract modification:

During the three months ended March 28, 2020, an immaterial cumulative catch-up adjustment to revenue was recorded.

(iii) A change in the time frame for a right to consideration to become unconditional (that is, for a contract asset to be recorded as a client receivable):

Approximately 60% of unbilled revenue as of December 28, 2019 was billed during the three months ended March 28, 2020.

(iv) A change in the time frame for a performance obligation to be satisfied (that is, for the recognition of revenue arising from a contract liability):

Approximately 60% of contract liabilities as of December 28, 2019 were recognized as revenue during the three months ended March 28, 2020.

4. SEGMENT INFORMATION

The Company's three reportable segments are RMS, DSA, and Manufacturing. The following table presents revenue and other financial information by reportable segment:

	Three Months Ended	
	March 28, 2020	March 30, 2019
	(in thousands)	
RMS		
Revenue	$ 145,996	$ 137,172
Operating income	27,373	37,832
Depreciation and amortization	8,752	4,322
Capital expenditures	5,412	4,112
DSA		
Revenue	$ 438,683	$ 354,197
Operating income	72,283	46,705
Depreciation and amortization	41,330	33,784
Capital expenditures	14,729	8,848
Manufacturing		
Revenue	$ 122,380	$ 113,200
Operating income	41,112	31,499
Depreciation and amortization	6,366	5,805
Capital expenditures	5,161	3,606

Reconciliations of segment operating income, depreciation and amortization, and capital expenditures to the respective consolidated amounts are as follows:

	Operating Income		Depreciation and Amortization		Capital Expenditures	
	March 28, 2020	March 30, 2019	March 28, 2020	March 30, 2019	March 28, 2020	March 30, 2019
	(in thousands)					
Three Months Ended:						
Total reportable segments	$ 140,768	$ 116,036	$ 56,448	$ 43,911	$ 25,302	$ 16,566
Unallocated corporate	(46,487)	(46,244)	812	1,447	419	165
Total consolidated	$ 94,281	$ 69,792	$ 57,260	$ 45,358	$ 25,721	$ 16,731

Revenue for each significant product or service offering is as follows:

	Three Months Ended	
	March 28, 2020	March 30, 2019
	(in thousands)	
RMS	$ 145,996	$ 137,172
DSA	438,683	354,197
Manufacturing	122,380	113,200
Total revenue	$ 707,059	$ 604,569

A summary of unallocated corporate expense consists of the following:

	Three Months Ended	
	March 28, 2020	March 30, 2019
	(in thousands)	
Stock-based compensation	$ 6,704	$ 8,274
Compensation, benefits, and other employee-related expenses	21,980	22,038
External consulting and other service expenses	2,469	3,810
Information technology	3,716	2,723
Depreciation	812	1,447
Acquisition and integration	6,983	5,472
Other general unallocated corporate	3,823	2,480
Total unallocated corporate expense	$ 46,487	$ 46,244

Other general unallocated corporate expense consists of costs associated with departments such as senior executives, corporate accounting, legal, tax, human resources, treasury, and investor relations.

Revenue by geographic area is as follows:

	U.S.	Europe	Canada	Asia Pacific	Other	Consolidated
	(in thousands)					
Three Months Ended:						
March 28, 2020	$ 406,712	$ 190,262	$ 76,633	$ 31,829	$ 1,623	$ 707,059
March 30, 2019	350,176	166,365	53,979	33,179	870	604,569

Included in the Other category above are operations located in Brazil and Israel. Revenue represents sales originating in entities physically located in the identified geographic area.

5. SUPPLEMENTAL BALANCE SHEET INFORMATION

The composition of trade receivables, net is as follows:

	March 28, 2020	December 28, 2019
	(in thousands)	
Client receivables	$ 415,359	$ 395,740
Unbilled revenue	131,660	121,957
Total	547,019	517,697
Less: Allowance for doubtful accounts	(4,629)	(3,664)
Trade receivables, net	$ 542,390	$ 514,033

The composition of inventories is as follows:

	March 28, 2020	December 28, 2019
	(in thousands)	
Raw materials and supplies	$ 24,708	$ 24,613
Work in process	30,418	35,852
Finished products	107,812	100,195
Inventories	$ 162,938	$ 160,660

The composition of other current assets is as follows:

	March 28, 2020	December 28, 2019
	(in thousands)	
Prepaid income tax	$ 60,016	$ 54,358
Short-term investments	934	941
Restricted cash	444	431
Other	300	300
Other current assets	$ 61,694	$ 56,030

The composition of other assets is as follows:

	March 28, 2020	December 28, 2019
	(in thousands)	
Venture capital investments	$ 98,405	$ 108,983
Other investments	18,659	13,996
Life insurance policies	31,617	38,207
Other long-term income tax assets	20,534	20,570
Restricted cash	1,576	1,601
Other	26,288	29,258
Other assets	$ 197,079	$ 212,615

The composition of other current liabilities is as follows:

	March 28, 2020	December 28, 2019
	(in thousands)	
Current portion of operating lease right-of-use liabilities	$ 22,469	$ 20,357
Accrued income taxes	25,706	26,066
Customer contract deposits	37,319	33,080
Other	23,426	11,095
Other current liabilities	$ 108,920	$ 90,598

The composition of other long-term liabilities is as follows:

	March 28, 2020	December 28, 2019
	(in thousands)	
U.S. Transition Tax	$ 50,057	$ 52,066
Long-term pension liability, accrued executive supplemental life insurance retirement plan and deferred compensation plan	78,272	80,833
Long-term deferred revenue	16,078	20,983
Other	29,517	29,051
Other long-term liabilities	$ 173,924	$ 182,933

6. VENTURE CAPITAL AND OTHER INVESTMENTS

Venture capital investments were $98.4 million and $109.0 million as of March 28, 2020 and December 28, 2019, respectively. The Company's total commitment to the venture capital funds as of March 28, 2020 was $128.4 million, of which the Company funded $82.9 million through that date. The Company received dividends totaling $0.9 million and $0.8 million for the three months ended March 28, 2020 and March 30, 2019, respectively. The Company recognized losses of $12.2 million and gains of $10.6 million related to the venture capital investments for the three months ended March 28, 2020 and March 30, 2019, respectively.

The Company also invests, with minority positions, directly in equity of predominantly privately-held companies. Other investments were $18.7 million and $14.0 million as of March 28, 2020 and December 28, 2019, respectively. The Company recognized an insignificant amount of gains and losses related to these investments for the three months ended March 28, 2020 and March 30, 2019.

7. FAIR VALUE

The Company has certain assets and liabilities recorded at fair value, which have been classified as Level 1, 2, or 3 within the fair value hierarchy:

- Level 1 - Fair values are determined utilizing prices (unadjusted) in active markets for identical assets or liabilities that the Company has the ability to access,
- Level 2 - Fair values are determined by utilizing quoted prices for identical or similar assets and liabilities in active markets or other market observable inputs such as interest rates, yield curves, and foreign currency spot rates,
- Level 3 - Prices or valuations that require inputs that are both significant to the fair value measurement and unobservable.

The fair value hierarchy level is determined by asset and class based on the lowest level of significant input. The observability of inputs may change for certain assets or liabilities. This condition could cause an asset or liability to be reclassified between levels. The Company recognizes transfers between levels within the fair value hierarchy, if any, at the end of each quarter. During the three months ended March 28, 2020 and March 30, 2019, there were no transfers between levels.

Valuation methodologies used for assets and liabilities measured or disclosed at fair value are as follows:

- Cash equivalents - Valued at market prices determined through third-party pricing services;
- Foreign currency forward contracts - Valued using market observable inputs, such as forward foreign exchange points and foreign exchanges rates;
- Life insurance policies - Valued at cash surrender value based on the fair value of underlying investments;
- Debt instruments - The book value of the Company’s term and revolving loans, which are variable rate loans carried at amortized cost, approximates the fair value based on current market pricing of similar debt. The book value of the Company’s 5.5% Senior Notes due in 2026 and the 4.25% Senior Notes due in 2028 (Senior Notes), which are fixed rate debt, are carried at amortized cost. Fair value of the Senior Notes is based on quoted market prices and on borrowing rates available to the Company; and
- Contingent consideration - Valued based on a probability weighting of the future cash flows associated with the potential outcomes.

Assets and liabilities measured at fair value on a recurring basis are summarized below:

	March 28, 2020			
	Level 1	Level 2	Level 3	Total
	(in thousands)			
Cash equivalents	$ —	$ 186,599	$ —	$ 186,599
Other assets:				
Life insurance policies	—	23,834	—	23,834
Total assets measured at fair value	$ —	$ 210,433	$ —	$ 210,433
Other current liabilities measured at fair value:				
Contingent consideration	$ —	$ —	$ 2,563	$ 2,563
Total liabilities measured at fair value	$ —	$ —	$ 2,563	$ 2,563

	December 28, 2019			
	Level 1	Level 2	Level 3	Total
	(in thousands)			
Cash equivalents	$ —	$ 55,278	$ —	$ 55,278
Other assets:				
Life insurance policies	—	30,454	—	30,454
Total assets measured at fair value	$ —	$ 85,732	$ —	$ 85,732
Other current liabilities measured at fair value:				
Contingent consideration	$ —	$ —	$ 712	$ 712
Foreign currency forward contract	—	876	—	876
Total liabilities measured at fair value	$ —	$ 876	$ 712	$ 1,588

Contingent Consideration

The following table provides a rollforward of the contingent consideration related to previous business acquisitions. See Note 2, “Business Combinations.”

	Three Months Ended	
	March 28, 2020	March 30, 2019
	(in thousands)	
Beginning balance	$ 712	$ 3,033
Additions	2,131	2,000
Payments	(218)	(2,610)
Foreign currency	(62)	74
Ending balance	$ 2,563	$ 2,497

The unobservable inputs used in the fair value measurement of the Company’s contingent consideration are the probabilities of successful achievement of certain financial targets and a discount rate. Increases or decreases in any of the probabilities of success would result in a higher or lower fair value measurement, respectively. Increases or decreases in the discount rate would result in a lower or higher fair value measurement, respectively.

Debt Instruments

The book value of the Company’s term and revolving loans, which are variable rate loans carried at amortized cost, approximates the fair value based on current market pricing of similar debt. As the fair value is based on significant other observable inputs, including current interest and foreign currency exchange rates, it is deemed to be Level 2 within the fair value hierarchy.

The book value of the Company’s 2026 and 2028 Senior Notes is a fixed rate obligation carried at amortized cost. Fair value is based on quoted market prices as well as borrowing rates available to the Company. As the fair value is based on significant other observable outputs, it is deemed to be Level 2 within the fair value hierarchy. The book value and fair value of the Company’s 2026 and 2028 Senior Notes is summarized below:

	March 28, 2020		December 28, 2019	
	Book Value	Fair Value	Book Value	Fair Value
2026 Senior Notes	$ 500,000	$ 508,050	$ 500,000	$ 537,500
2028 Senior Notes	500,000	475,000	500,000	510,000

8. GOODWILL AND INTANGIBLE ASSETS

Goodwill

The following table provides a rollforward of the Company's goodwill:

	December 28, 2019	Adjustments to Goodwill: Acquisitions	Adjustments to Goodwill: Foreign Exchange	March 28, 2020
		(in thousands)		
RMS	$ 56,586	$ 209,104	$ (219)	$ 265,471
DSA	1,345,223	(550)	(13,865)	1,330,808
Manufacturing	138,756	—	(3,198)	135,558
Goodwill	$ 1,540,565	$ 208,554	$ (17,282)	$ 1,731,837

The increase in goodwill during the three months ended March 28, 2020 related primarily to the acquisition of HemaCare in the RMS reportable segment, which was partially offset by the impact of foreign exchange.

Intangible Assets, Net

The following table displays intangible assets, net by major class:

	March 28, 2020			December 28, 2019		
	Gross	Accumulated Amortization	Net	Gross	Accumulated Amortization	Net
			(in thousands)			
Backlog	$ 28,558	$ (27,133)	$ 1,425	$ 28,865	$ (26,895)	$ 1,970
Technology	123,647	(62,307)	61,340	122,106	(57,737)	64,369
Trademarks and trade names	15,504	(4,983)	10,521	8,430	(4,901)	3,529
Other	19,874	(12,813)	7,061	18,279	(12,307)	5,972
Other intangible assets	187,583	(107,236)	80,347	177,680	(101,840)	75,840
Client relationships	1,085,540	(333,024)	752,516	934,668	(321,095)	613,573
Intangible assets	$ 1,273,123	$ (440,260)	$ 832,863	$ 1,112,348	$ (422,935)	$ 689,413

The increase in intangible assets, net during the three months ended March 28, 2020 related primarily to the acquisition of HemaCare.

9. LONG-TERM DEBT AND FINANCE LEASE OBLIGATIONS

Long-term debt, net and finance leases consists of the following:

	March 28, 2020	December 28, 2019
	(in thousands)	
Term loans	$ 184,375	$ 193,750
Revolving facility	1,168,096	676,134
2026 Senior Notes	500,000	500,000
2028 Senior Notes	500,000	500,000
Other debt	10,227	5,781
Finance leases (Note 16)	28,808	30,527
Total debt and finance leases	2,391,506	1,906,192
Less:		
Current portion of long-term debt	44,738	35,548
Current portion of finance leases (Note 16)	2,929	2,997
Current portion of long-term debt and finance leases	47,667	38,545
Long-term debt and finance leases	2,343,839	1,867,647
Debt discount and debt issuance costs	(17,069)	(17,981)
Long-term debt, net and finance leases	$ 2,326,770	$ 1,849,666

As of March 28, 2020 and December 28, 2019, the weighted average interest rate on the Company's debt was 3.03% and 3.46%, respectively.

Term Loans and Revolving Facility

The Company has a $2.8 billion credit facility (Credit Facility), consisting of a $750 million term loan and a $2.05 billion multi-currency revolving facility. The term loan facility matures in 19 quarterly installments with the last installment due March 26, 2023. On October 23, 2019, the Company prepaid $500.0 million of the term loan with proceeds from a $500.0 million unregistered private offering (see 2028 Senior Notes Offering below). The revolving facility matures on March 26, 2023, and requires no scheduled payment before that date.

Under specified circumstances, the Company has the ability to increase the term loan and/or revolving facility by up to $1.0 billion in the aggregate.

The interest rates applicable to the term loan and revolving facility under the Credit Facility are, at the Company's option, equal to either the base rate (which is the higher of (1) the prime rate, (2) the federal funds rate plus 0.50%, or (3) the one-month adjusted LIBOR rate plus 1.0%) or the adjusted LIBOR rate, plus an interest rate margin based upon the Company's leverage ratio.

The Credit Facility includes certain customary representations and warranties, events of default, notices of material adverse changes to the Company's business and negative and affirmative covenants. These covenants include (1) maintenance of a ratio of consolidated earnings before interest, taxes, depreciation and amortization (EBITDA) less capital expenditures to consolidated cash interest expense, for any period of four consecutive fiscal quarters, of no less than 3.50 to 1.0 as well as (2) maintenance of a ratio of consolidated indebtedness to consolidated EBITDA for any period of four consecutive fiscal quarters, of no more than 4.00 to 1.0. As of March 28, 2020, the Company was compliant with all covenants.

The obligations of the Company under the Credit Facility are collateralized by substantially all of the assets of the Company.

During the three months ended March 28, 2020 and March 30, 2019, the Company had multiple U.S. dollar denominated loans borrowed by a non-U.S. Euro functional currency entity under the Company's Credit Facility, which ranged from $300 million to $400 million. This resulted in foreign currency losses recognized in Other income, net of $4.2 million and $6.4 million during the three months ended March 28, 2020 and March 30, 2019, respectively, related to the remeasurement of the underlying debt. The Company entered into foreign exchange forward contracts to limit its foreign currency exposures related to these borrowings and recognized gains of $6.1 million and $8.9 million during the three months ended March 28, 2020 and March 30, 2019, respectively, within Interest expense. As of March 28, 2020, the Company did not have any outstanding borrowings in a currency different than its respective functional currency. See Note 14, "Foreign Currency Contracts", for further discussion.

Base Indenture for Senior Notes

The Company has an indenture (Base Indenture) with MUFG Union Bank, N.A., (Trustee). The purpose of the Indenture was to allow the Company the ability to issue senior notes. The Company has entered into two supplemental indentures in connection with the senior notes described below.

2026 Senior Notes

In fiscal year 2018, the Company entered into the first supplemental indenture (First Supplemental Indenture) with the Trustee in connection with an offering of $500 million in aggregate principal amount of the Company's 5.5% Senior Notes (2026 Senior Notes), due in 2026, in an unregistered offering. Under the terms of the First Supplemental Indenture, interest on the Senior Notes is payable semi-annually on April 1 and October 1, beginning on October 1, 2018.

2028 Senior Notes

In fiscal year 2019, the Company entered into a second supplemental indenture (Second Supplemental Indenture) with the Trustee in connection with the offering of $500 million in aggregate principal amount of the Company's 4.25% Senior Notes (2028 Senior Notes), due in 2028, in an unregistered offering. Under the terms of the Second Supplemental Indenture, interest on the 2028 Senior Notes is payable semi-annually on May 1 and November 1, beginning on May 1, 2020.

Letters of Credit

As of March 28, 2020 and December 28, 2019, the Company had $8.3 million and $7.5 million, respectively, in outstanding letters of credit.

10. EQUITY AND NONCONTROLLING INTERESTS

Earnings Per Share

The following table reconciles the numerator and denominator in the computations of basic and diluted earnings per share:

	Three Months Ended	
	March 28, 2020	March 30, 2019
	(in thousands)	
Numerator:		
Net income	$ 50,837	$ 55,688
Less: Net income attributable to noncontrolling interests	68	555
Net income attributable to common shareholders	$ 50,769	$ 55,133
Denominator:		
Weighted-average shares outstanding - Basic	49,189	48,458
Effect of dilutive securities:		
Stock options, restricted stock units and performance share units	777	1,004
Weighted-average shares outstanding - Diluted	49,966	49,462

Options to purchase 0.4 million shares for each of the three months ended March 28, 2020 and March 30, 2019, as well as an insignificant number of restricted stock units (RSUs) and performance share units (PSUs), were not included in computing diluted earnings per share because their inclusion would have been anti-dilutive. Basic weighted-average shares outstanding for the three months ended March 28, 2020 and March 30, 2019 excluded the impact of 0.6 million and 1.0 million shares of non-vested RSUs and PSUs, respectively.

Treasury Shares

During the three months ended March 28, 2020 and March 30, 2019, the Company did not repurchase any shares under its authorized stock repurchase program. As of March 28, 2020, the Company had $129.1 million remaining on the authorized stock repurchase program.

The Company's stock-based compensation plans permit the netting of common stock upon vesting of RSUs and PSUs in order to satisfy individual statutory tax withholding requirements. During the three months ended March 28, 2020 and March 30, 2019, the Company acquired 0.1 million shares for $23.7 million and 0.1 million shares for $17.8 million, respectively, from such netting.

Accumulated Other Comprehensive Income (Loss)

Changes to each component of accumulated other comprehensive income (loss), net of income taxes, are as follows:

	Foreign Currency Translation Adjustment and Other	Pension and Other Post-Retirement Benefit Plans	Total
	(in thousands)		
December 28, 2019	$ (87,578)	$ (90,441)	$ (178,019)
Other comprehensive loss before reclassifications	(44,311)	—	(44,311)
Amounts reclassified from accumulated other comprehensive loss	—	1,374	1,374
Net current period other comprehensive income (loss)	(44,311)	1,374	(42,937)
Income tax expense (benefit)	(2,330)	291	(2,039)
March 28, 2020	$ (129,559)	$ (89,358)	$ (218,917)

Nonredeemable Noncontrolling Interest

The Company has an investment in an entity whose financial results are consolidated in the Company's unaudited condensed consolidated financial statements, as it has the ability to exercise control over this entity. The interest of the noncontrolling party in this entity has been recorded as noncontrolling interest within Equity in the accompanying unaudited condensed consolidated balance sheets. The activity within the nonredeemable noncontrolling interest was immaterial during the three months ended March 28, 2020 and March 30, 2019, respectively.

Redeemable Noncontrolling Interests

The Company has a 92% equity interest in Vital River with an 8% redeemable noncontrolling interest. The Company has the right to purchase, and the noncontrolling interest holders with the right to sell, the remaining 8% equity interest at a contractually defined redemption value, subject to a redemption floor, which represents a derivative embedded within the equity instrument. These rights are exercisable beginning in 2022 and are accelerated in certain events. The redeemable noncontrolling interest is measured at the greater of the amount that would be paid if settlement occurred as of the balance sheet date based on the contractually defined redemption value ($14.7 million as of March 28, 2020) and the carrying amount adjusted for net income (loss) attributable to the noncontrolling interest. As the noncontrolling interest holders have the ability to require the Company to purchase the remaining 8% interest, the noncontrolling interest is classified in the mezzanine section of the unaudited condensed consolidated balance sheets, which is presented above the equity section and below liabilities. The amount that the Company could be required to pay to purchase the remaining 8% equity interest is not limited.

As part of the Citoxlab acquisition in 2019, the Company acquired an approximate 90% equity interest in a subsidiary that is fully consolidated under the voting interest model, which included an approximate 10% redeemable noncontrolling interest. In February 2020, the Company purchased the remaining approximate 10% noncontrolling interest for approximately $4 million and assumption of a contingent consideration liability of approximately $2 million payable to the former shareholders. See Note 7. “Fair Value”.

In 2019, the Company acquired an 80% equity interest in a supplier that is fully consolidated, which includes a 20% redeemable noncontrolling interest. The Company has the right to purchase, and the noncontrolling interest holders with the right to sell, the remaining 20% equity interest at its appraised value. These rights are exercisable beginning in 2022. The redeemable noncontrolling interest is measured at the greater of the amount that would be paid if settlement occurred as of the balance sheet date based on the appraised value and the carrying amount adjusted for net income (loss) attributable to the noncontrolling interest or a predetermined floor value. As the noncontrolling interest holders have the ability to require the Company to purchase the remaining 20% interest, the noncontrolling interest is classified in the mezzanine section of the unaudited condensed consolidated balance sheets, which is presented above the equity section and below liabilities. The amount that the Company could be required to pay to purchase the remaining 20% equity interest is not limited.

The following table provides a rollforward of the activity related to the Company’s redeemable noncontrolling interests:

	Three Months Ended	
	March 28, 2020	March 30, 2019
	(in thousands)	
Beginning balance	$ 28,647	$ 18,525
Acquisition of noncontrolling interest	(3,732)	—
Adjustment to Vital River redemption value	—	1,451
Net (loss) income attributable to noncontrolling interests	(332)	85
Foreign currency translation	(544)	458
Ending balance	$ 24,039	$ 20,519

11. INCOME TAXES

The Company’s effective tax rates for the three months ended March 28, 2020 and March 30, 2019 were 8.3% and 16.0%, respectively. For the three months ended March 28, 2020, the decrease was primarily attributable to an increased tax benefit from stock-based compensation deductions compared to the corresponding period in 2019.

For the three months ended March 28, 2020, the Company’s unrecognized tax benefits decreased by $0.6 million to $19.1 million, primarily due to tax authority settlements and favorable foreign exchange, offset by an additional quarter of Canadian Scientific Research and Experimental Development Credit reserves. The amount of unrecognized income tax benefits that would impact the effective tax rate decreased by $0.7 million to $16.3 million, for the same reasons listed above. The accrued interest on unrecognized tax benefits was $2.3 million at March 28, 2020. The Company estimates that it is reasonably possible that the unrecognized tax benefits will decrease by up to $3.0 million over the next twelve-month period, primarily due to the outcome of pending tax audits.

The Company conducts business in a number of tax jurisdictions. As a result, it is subject to tax audits on a regular basis including, but not limited to, such major jurisdictions as the U.S., the U.K., China, France, Germany, and Canada. With few exceptions, the Company is no longer subject to U.S. and international income tax examinations for years before 2016.

The Company and certain of its subsidiaries have ongoing tax controversies in the U.S., France and Canada. The Company does not anticipate resolution of these audits will have a material impact on its consolidated financial statements.

12. PENSION AND OTHER POST-RETIREMENT BENEFIT PLANS

The following table provides the components of net periodic cost for the Company's pension, deferred compensation and executive supplemental life insurance retirement plans:

	Three Months Ended	
	March 28, 2020	March 30, 2019
	(in thousands)	
Service cost	$ 797	$ 630
Interest cost	2,355	2,875
Expected return on plan assets	(2,981)	(3,235)
Amortization of prior service cost (credit)	(125)	91
Amortization of net loss	1,586	489
Other adjustments	125	—
Net periodic cost	$ 1,757	$ 850

Service cost is recorded as an operating expense within the accompanying unaudited condensed consolidated statements of income. All other components of net periodic costs are recorded in Other expense, net in the accompanying unaudited condensed consolidated statements of income. The net periodic cost for the Company's other post-retirement benefit plan for the three months ended March 28, 2020 and March 30, 2019 was not significant.

13. STOCK-BASED COMPENSATION

The Company has stock-based compensation plans under which employees and non-employee directors may be granted stock-based awards such as stock options, restricted stock, RSUs, and PSUs.

The following table provides stock-based compensation by the financial statement line item in which it is reflected:

	Three Months Ended	
	March 28, 2020	March 30, 2019
	(in thousands)	
Cost of revenue	$ 2,035	$ 1,949
Selling, general and administrative	8,925	10,950
Stock-based compensation, before income taxes	10,960	12,899
Provision for income taxes	(1,551)	(2,047)
Stock-based compensation, net of income taxes	$ 9,409	$ 10,852

During the three months ended March 28, 2020, the Company granted an insignificant amount of stock options and RSUs.

14. FOREIGN CURRENCY CONTRACTS

Cross currency loans

The Company periodically enters into foreign exchange forward contracts to limit its foreign currency exposure related to U.S. dollar denominated loans borrowed by a non-U.S. Euro functional currency entity under the Credit Facility. These contracts are not designated as hedging instruments. Any gains or losses on these forward contracts are recognized immediately in Interest expense in the unaudited condensed consolidated statements of income.

The Company had no open forward contracts related to a U.S. dollar denominated loan borrowed by a non-U.S. Euro functional currency at March 28, 2020 or December 28, 2019.

The following table summarizes the effect of the foreign exchange forward contracts entered into to limit the Company's foreign currency exposure related to U.S. dollar denominated loans borrowed by a non-U.S. Euro functional currency entity under the Credit Facility on the Company's unaudited condensed consolidated statements of income:

	March 28, 2020		March 30, 2019	
Location of gain (loss)	Financial statement caption amount	Amount of gain (loss)	Financial statement caption amount	Amount of gain (loss)
	(in thousands)			
Three Months Ended:				
Interest expense	$ (15,067)	$ 6,067	$ (9,987)	$ 8,917

Intercompany loans

The Company periodically enters into foreign exchange forward contracts to limit its foreign currency exposure related to certain intercompany loans. These contracts are not designated as hedging instruments. Any gains or losses on forward contracts associated with intercompany loans are recognized immediately in Other income, net and are largely offset by the remeasurement of the underlying intercompany loans.

The Company entered into foreign currency forward contracts during 2020 and 2019. One contract remained open at December 28, 2019, which had a duration of less than one month and is recorded at fair value in the Company's accompanying unaudited condensed consolidated balance sheets. The Company did not have any open foreign currency forward contracts related to certain intercompany loans at March 28, 2020. The notional amount and fair value of the open contract is summarized as follows:

December 28, 2019		
Notional Amount	Fair Value	Balance Sheet Location
(in thousand)		
$ 115,038	$ (876)	Other current liabilities

The following table summarizes the effect of the foreign exchange forward contracts in connection with certain intercompany loans on the Company's unaudited condensed consolidated statements of income:

	March 28, 2020		March 30, 2019	
Location of gain (loss)	Financial statement caption amount	Amount of gain (loss)	Financial statement caption amount	Amount of gain (loss)
	(in thousands)			
Three Months Ended:				
Other (expense) income, net	$ (24,071)	$ (892)	$ 6,306	$ —

15. RESTRUCTURING AND ASSET IMPAIRMENTS

Global Restructuring Initiatives

In recent fiscal years, the Company has undertaken productivity improvement initiatives within all reportable segments at various locations across the U.S., Canada, Europe, China, and Japan. This includes workforce right-sizing and scalability initiatives, resulting in severance and transition costs; and cost related to the consolidation of facilities, resulting in asset impairment and accelerated depreciation charges.

The following table presents a summary of restructuring costs related to these initiatives within the unaudited condensed consolidated statements of income.

	Three Months Ended					
	March 28, 2020			March 30, 2019		
	Severance and Transition Costs	Asset Impairments and Other Costs	Total	Severance and Transition Costs	Asset Impairments and Other Costs	Total
	(in thousands)					
Cost of services provided and products sold (excluding amortization of intangible assets)	$ 247	$ 229	$ 476	$ 267	$ 1,149	$ 1,416
Selling, general and administrative	83	—	83	133	—	133
Total	$ 330	$ 229	$ 559	$ 400	$ 1,149	$ 1,549

The following table presents restructuring costs by reportable segment for these productivity improvement initiatives:

	Three Months Ended	
	March 28, 2020	March 30, 2019
	(in thousands)	
RMS	$ 220	$ 301
DSA	83	13
Manufacturing	256	1,235
Total	$ 559	$ 1,549

Rollforward of restructuring activities

The following table provides a rollforward for all of the Company's severance and transition costs, and lease obligation liabilities related to all restructuring activities:

	Three Months Ended	
	March 28, 2020	March 30, 2019
	(in thousands)	
Beginning balance	$ 6,406	$ 2,921
Expense (excluding non-cash charges)	517	1,246
Payments / utilization	(4,243)	(2,034)
Foreign currency adjustments	(149)	(20)
Ending balance	$ 2,531	$ 2,113

As of March 28, 2020 and March 30, 2019, $2.4 million and $1.8 million of severance and other personnel related costs liabilities and lease obligation liabilities, respectively, were included in accrued compensation and accrued liabilities within the Company's unaudited condensed consolidated balance sheets and $0.1 million and $0.3 million, respectively, were included in other long-term liabilities within the Company's unaudited condensed consolidated balance sheets.

16. LEASES

Operating and Finance Leases

Right-of-use lease assets and lease liabilities are reported in the Company's unaudited condensed consolidated balance sheets as follows:

	March 28, 2020	December 28, 2019
	(in thousands)	
Operating leases		
Operating lease right-of-use assets, net	$ 155,568	$ 140,085
Other current liabilities	$ 22,469	$ 20,357
Operating lease right-of-use liabilities	133,440	116,252
Total operating lease liabilities	$ 155,909	$ 136,609
Finance leases		
Property, plant and equipment, net	$ 30,859	$ 32,519
Current portion of long-term debt and finance leases	$ 2,929	$ 2,997
Long-term debt, net and finance leases	25,879	27,530
Total finance lease liabilities	$ 28,808	$ 30,527

The components of operating and finance lease costs were as follows:

	Three Months Ended	
	March 28, 2020	March 30, 2019
	(in thousands)	
Operating lease costs	$ 8,077	$ 7,706
Finance lease costs:		
Amortization of right-of-use assets	951	921
Interest on lease liabilities	340	296
Short-term lease costs	589	192
Variable lease costs	1,045	335
Sublease income	(586)	(46)
Total lease costs	$ 10,416	$ 9,404

Other information related to leases was as follows:

Supplemental cash flow information

	Three Months Ended	
	March 28, 2020	March 30, 2019
	(in thousands)	
Cash flows included in the measurement of lease liabilities:		
Operating cash flows from operating leases	$ 6,974	$ 6,533
Operating cash flows from finance leases	340	352
Finance cash flows from finance leases	1,572	838
Non-cash leases activity:		
Right-of-use lease assets obtained in exchange for new operating lease liabilities	$ 25,407	$ 1,688
Right-of-use lease assets obtained in exchange for new finance lease liabilities	593	—

Lease term and discount rate

	As of March 28, 2020
Weighted-average remaining lease term (in years)	
Operating lease	8.40
Finance lease	12.71
Weighted-average discount rate	
Operating lease	4.24
Finance lease	4.54

At the lease commencement date, the discount rate implicit in the lease is used to discount the lease liability if readily determinable. If not readily determinable or leases do not contain an implicit rate, the Company's incremental borrowing rate is used as the discount rate.

As of March 28, 2020, maturities of operating and finance lease liabilities for each of the following five years and a total thereafter were as follows:

	Operating Leases	Finance Leases
	(in thousands)	
2020 (excluding the three months ended March 28, 2020)	$ 21,347	$ 3,063
2021	27,308	3,804
2022	23,483	3,754
2023	19,810	2,898
2024	19,168	2,146
Thereafter	76,170	22,531
Total minimum future lease payments	187,286	38,196
Less: Imputed interest	31,377	9,388
Total lease liabilities	$ 155,909	$ 28,808

Total minimum future lease payments (predominantly operating leases) of approximately $48 million for leases that have not commenced as of March 28, 2020, as the Company does not yet control the underlying assets, are not included in the unaudited condensed consolidated financial statements. These leases are expected to commence between fiscal years 2020 and 2024 with lease terms of approximately 2 to 15 years.

17. COMMITMENTS AND CONTINGENCIES

Litigation

Various lawsuits, claims and proceedings of a nature considered normal to its business are pending against the Company. While the outcome of any of these proceedings cannot be accurately predicted, the Company does not believe the ultimate resolution of any of these existing matters would have a material adverse effect on the Company’s business or financial condition.

Item 2. Management's Discussion and Analysis of Financial Condition and Results of Operations

The following discussion should be read in conjunction with our unaudited condensed consolidated financial statements and related notes of this Quarterly Report on Form 10-Q and our audited consolidated financial statements and related notes included in our Annual Report on Form 10-K for fiscal year 2019. The following discussion contains forward-looking statements. Actual results may differ significantly from those projected in the forward-looking statements. Factors that might cause future results to differ materially from those projected in the forward-looking statements include, but are not limited to, those discussed in Item 1A, "Risk Factors" included elsewhere within this Form 10-Q. Certain percentage changes may not recalculate due to rounding.

Overview

We are a full service, early-stage contract research organization (CRO). For over 70 years, we have been in the business of providing the research models required in research and development of new drugs, devices, and therapies. Over this time, we have built upon our original core competency of laboratory animal medicine and science (research model technologies) to develop a diverse portfolio of discovery and safety assessment services, both Good Laboratory Practice (GLP) and non-GLP, that enable us to support our clients from target identification through non-clinical development. We also provide a suite of products and services to support our clients' manufacturing activities. Utilizing our broad portfolio of products and services enables our clients to create a more flexible drug development model, which reduces their costs, enhances their productivity and effectiveness, and increases speed to market.

Our client base includes all major global biopharmaceutical companies, many biotechnology companies, CROs, agricultural and industrial chemical companies, life science companies, veterinary medicine companies, contract manufacturing companies, medical device companies, and diagnostic and other commercial entities, as well as leading hospitals, academic institutions, and government agencies around the world.

Segment Reporting

Our three reportable segments are Research Models and Services (RMS), Discovery and Safety Assessment (DSA), and Manufacturing Support (Manufacturing). Our RMS reportable segment includes the Research Models, Research Model Services, and Research Products businesses. Research Models includes the commercial production and sale of small research models, as well as the supply of large research models. Research Model Services includes: Genetically Engineered Models and Services (GEMS), which performs contract breeding and other services associated with genetically engineered models; Research Animal Diagnostic Services (RADS), which provides health monitoring and diagnostics services related to research models; and Insourcing Solutions (IS), which provides colony management of our clients' research operations (including recruitment, training, staffing, and management services). Research Products supplies controlled, consistent, customized primary cells and blood components derived from normal and mobilized peripheral blood, bone marrow, and cord blood. Our DSA reportable segment includes services required to take a drug through the early development process including discovery services, which are non-regulated services to assist clients with the identification, screening, and selection of a lead compound for drug development, and regulated and non-regulated (GLP and non-GLP) safety assessment services. Our Manufacturing reportable segment includes Microbial Solutions, which provides *in vitro* (non-animal) lot-release testing products, microbial detection products, and species identification services; Biologics Testing Services (Biologics), which performs specialized testing of biologics; and Avian Vaccine Services (Avian), which supplies specific-pathogen-free chicken eggs and chickens.

COVID-19

Overview

On March 11, 2020, the World Health Organization declared the outbreak of a strain of novel coronavirus disease, COVID-19, a global pandemic. The COVID-19 pandemic is dynamic and expanding, and its ultimate scope, duration and effects are uncertain. This pandemic has had and continues to result in direct and indirect adverse effects on our industry and customers, which in turn has impacted our business, results of operations, and financial condition. Further, the COVID-19 pandemic may also affect our operating and financial results in ways that are and are not presently known to us, or that we currently do not expect to present significant risks to our operations or financial results but which may in fact turn out to negatively affect us to a magnitude greater than anticipated. Refer to Item 1A, Risk Factors, included herein for risk factors reflecting the impact of the COVID-19 pandemic. Giving consideration to each of these risk factors, the following is our current estimate and belief of the impact of the COVID-19 pandemic during the first quarter of fiscal 2020 and how it may continue to affect us in subsequent periods.

Business continuity

To date, we generally have not experienced significant challenges in implementing our business continuity plans. Many government agencies have provided guidance permitting "essential" or "critical" business operations to remain open. As of the date of this quarterly report, in the geographies where business restrictions have been imposed, we believe all of our business operations have satisfied the requirements to be designated to be "essential" or "critical" according to the guidance provided by

government, health and other regulatory agencies with authority over such matters. As a result, all of our operating sites remain open and adequately staffed as of the date of this quarterly report. For certain operations or sites experiencing logistical delays, we have experienced some inefficiencies as it relates to completing work or fulfilling orders; however, we do not believe material expenditures will be required or material resource constraints will occur. Logistical delays include a small number of sites that have experienced reduced operations (including as a result of increased employee absenteeism) or voluntarily closed, as well as delays in transportation activities.

We have comprehensive business continuity plans in place for each site globally and are continuously updating these to address the evolving COVID-19 pandemic situation. We implemented our initial plans in China beginning in January 2020, and have continuously refined our plans for other regions as the virus has spread. We have encouraged and expressed our expectations that employees work remotely whenever possible; and for those employees who need to come into our sites to fulfill their responsibilities, we are adhering to guidelines from government, health, and other regulatory agencies. This includes social distancing, flexible scheduling such as split shifts, restricting visitors, enhanced cleaning, and providing personal protective equipment (PPE), such as masks and gloves, to employees. Due to the nature of our business, many employees already work in biosecure environments that require PPE and adhere to other procedures to safely accomplish their daily responsibilities. Accordingly, to date, we believe we have been able to efficiently implement the additional safety precautions.

Supply chain

We are focused on ensuring that we have adequate inventory and supplies on hand given the potential disruption of the COVID-19 pandemic to our suppliers and their supply chain. Accordingly, we have and expect to continue to increase inventory and supplies through the second quarter of 2020 and beyond as deemed appropriate. We proactively engaged with our suppliers beginning in January 2020 to limit any potential disruption to our supply chain. However, notwithstanding generally successful efforts to maintain supply chain continuity, we have experienced and expect to experience increased costs and potential delays throughout our supply chain during the pandemic.

Financial condition and results of our global operations

We are a global company that operates in over 90 facilities across over 20 countries worldwide. As we perform business across various borders, we are experiencing a continuum of impacts in each location as the COVID-19 pandemic has impacted the global economy in different phases. We are continuing to see demand for products and services across all of our businesses, although as described below the impact of the COVID-19 pandemic on the level of demand varies with our different businesses. While there is uncertainty, our clients are still in need of the products and services we provide to biomedical research to advance discovery and develop new therapies for the treatment of disease, including the COVID-19 pandemic. Due to certain restrictions in place at the various sites of our clients and suppliers (including client and supplier site closures), there have been challenges relating to timely receiving and shipping products globally in all businesses. Should these restrictions continue, demand/supply issues may persist and could impact revenue growth, operating income (including operating income margins) and cash flows. We have observed some impact due to constraints from internal site restrictions, remote work, resources, and productivity. However, we believe the impact to us has not been as significant as to companies in many other industries because of the nature of our businesses, the classification of our businesses as essential or critical, as the case may be, and our business continuity plans.

Our RMS business was moderately impacted by the COVID-19 pandemic during the three months ended March 28, 2020, although the impact accelerated during the final month of the quarter. Demand for research models began to decline due primarily to the physical shutdown of our client's facilities, principally academic institutions. While many of our clients are deemed essential businesses as well, we began to experience a slowdown, initially in China in January 2020, and then across Europe and North America later in the period, as measures were implemented by various governments to slow the spread of the COVID-19 pandemic. We expect this trend of reduced demand for research models to continue in upcoming quarters, which will negatively impact revenue, operating income, operating income margins, and cash flows. An increase in demand is not expected until our clients reopen impacted sites and resume their research activity. Research models services, specifically our GEMS and Insourcing Solutions businesses, experienced higher revenues in the three month period ended March 28, 2020 compared to the corresponding prior period.

Our DSA business was not significantly impacted by the COVID-19 pandemic during the three months ended March 28, 2020. Towards the end of the first fiscal quarter of 2020, we experienced some client work shifting towards subsequent quarters of fiscal year 2020 due to the various actions and restrictions put in place by governments around the world intended to slow the spread of the COVID-19 pandemic. The work performed in our Discovery Services and Safety Assessment businesses are largely dependent on our internal sites being open. Therefore, to the extent that clients require work to be completed, we have
been able to maintain the ability to continue to meet client demands and perform the work so long as our work force at the specific site the work is done is not significantly adversely impacted by the COVID-19 pandemic. This trend is expected to continue as government actions to slow the spread of the COVID-19 pandemic begin to subside, employees return to work, and economies across the world begin to reopen. Costs of supply are expected to increase as we procure the materials required to

perform our work. We expect a small-to-modest adverse impact to our revenue growth, operating income, operating margin and cash flow through the rest of the year.

Our Manufacturing business was not significantly impacted by the COVID-19 pandemic during the three months ended March 28, 2020. We expect to see a minor negative impact due to the COVID-19 pandemic as our customers experience minor disruptions in their manufacturing operations. We expect Manufacturing products, such as Microbial Solutions endotoxin products and avian products, to see continued demand through the remainder of fiscal 2020. Our Biologics testing facilities remain open and performing services for our clients. Similar to our other services businesses, our ability to perform work is contingent on our internal facilities and our work force not being significantly adversely impacted by the COVID-19 pandemic. We expect a small adverse impact to our revenue growth, operating income, operating margin and cash flows through the rest of the year.

Liquidity, capital and financial resources

We require cash to fund working capital needs as well as capital expansion, acquisitions, venture capital and strategic investments, debt obligations, leases, and pension obligations. The principal sources of liquidity have been cash flows from operations, supplemented by long-term borrowings. In fiscal year 2019, we issued $500 million Senior Notes, repaid part of our term loan for $500 million, and increased our multi-currency revolving facility by $500 million, from $1.55 billion to $2.05 billion. As of March 28, 2020, we had $2.4 billion of debt outstanding, of which $44.7 million is current. Available on the revolving line of credit (Revolver) is approximately $900 million, which matures on March 26, 2023 and does not require scheduled payments before that date should additional borrowings occur. The term loan facility matures in 19 quarterly installments with the last installment due March 26, 2023. The Senior Notes become due in 2026 and 2028.

Due to the uncertainty resulting from the COVID-19 pandemic, we borrowed an additional $150 million from the Revolver during the three months ended March 28, 2020. While there remains uncertainty for the remainder of 2020, we currently do not anticipate needing to use these borrowings to fund operations. The purpose of borrowing the additional funds was to protect against any prolonged adverse impacts on liquidity markets that are currently unforeseeable. We expect to generate cash inflows from our operating activities sufficient to satisfy our working capital needs as well as to service our debt, pension, and venture capital obligations. Due to this higher debt, we do expect an increase to interest expense, however, this additional charge is not expected to materially adversely impact us. We do not currently anticipate we will need to borrow additional funds during 2020. However, we have analyzed the cash flows and debt balances noting there is significant capacity on the remaining Revolver assuming we achieve the results of operations consistent with what we have described herein. Accordingly, we do not anticipate a material risk of non-compliance with our debt covenants based on our current estimate of future earnings. Our debt levels consist of a combination of fixed and variable debt, which include $1.0 billion of fixed senior notes (2026 and 2028 Senior Notes). To protect against adverse liquidity concerns, there are various mechanisms for us to improve cash flows. To date we have implemented cost reduction plans including delaying compensation related increases, implementing hiring restrictions, reducing working hours, reducing all non-essential travel, and reducing certain discretionary spending. Additionally, we have reduced our investment activity, including planned acquisitions and capital projects.

As of the date these unaudited condensed consolidated financial statements are issued, based on our current and expected liquidity position, we do not believe there is significant uncertainty in our ability to continue as a going concern.

Recoverability and/or impairment of assets

The COVID-19 pandemic did not, nor is expected to impact, the ability to timely account for assets on our balance sheet. There are judgments involved as it relates to reviewing our allowance for doubtful accounts, valuation of inventory, and valuations/recovery of investments. We believe we have the necessary support for estimates derived for these account balances. We have reviewed the collectability and valuation of the assets through the date of financial statement issuance, noting no significant recoverability concerns or any impairments identified. Gains and losses on certain investments in venture capital funds are recorded on a quarterly lag due to the availability of the funds' financial information, which is consistent with our venture capital investment accounting policy described in our Annual Report on Form 10-K for fiscal 2019. We did not identify any triggering events when reviewing impairment indicators for our goodwill and long-lived assets (tangible and intangible) that would indicate an impairment may exist. Review of impairment indicators and quantifying any impact will continue to be a focus throughout fiscal year 2020. Should a prolonged disruption occur where there is a material change from our current expectation of future cash flows, we could experience additional write-offs of client receivables or impairments to certain asset balances due to collectability and valuation issues.

Internal controls over financial reporting in a remote work environment

Internal controls over financial reporting are a focus for us to ensure they continue to be designed and operating effectively. As of March 28, 2020 and through the issuance of these unaudited condensed consolidated financial statements, we did not have any material changes to our internal controls over financial reporting. For personnel responsible for internal control activities

and working remote, the ability to work effectively enabled us to continue to maintain effective internal control over financial reporting. System and efficiency programs implemented in recent years, as well as those implemented as part of business continuity plans, have enabled us to effectively complete our financial reporting process in a similar way we completed it prior to the COVID-19 pandemic despite a largely remote working environment. Although there is uncertainty over the duration of the COVID-19 pandemic disruption, we do not anticipate any adverse impact to relevant systems or to the operating effectiveness of internal controls over financial reporting.

Recent Acquisitions

Our strategy is to augment internal growth of existing businesses with complementary acquisitions. Our recent acquisitions are described below.

On January 3, 2020, we acquired HemaCare Corporation (HemaCare), a business specializing in the production of human-derived cellular products for the cell therapy market. The acquisition of HemaCare expands our comprehensive portfolio of early-stage research and manufacturing support solutions to encompass the production and customization of high-quality, human derived cellular products to better support clients' cell therapy programs. The purchase price of HemaCare was $379.8 million in cash. The acquisition was funded through a combination of cash on hand and proceeds from our Credit Facility under the multi-currency revolving facility. This business is reported as part of our RMS reportable segment.

On August 28, 2019, we acquired an 80% ownership interest in a supplier that supports our DSA reportable segment. The remaining 20% interest is a redeemable non-controlling interest. The purchase price was $23.4 million, net of a $4.0 million pre-existing relationship for a supply agreement settled upon acquisition. The acquisition was funded through a combination of cash on hand and proceeds from our Credit Facility under the multi-currency revolving facility. The business is reported as part of our DSA reportable segment.

On April 29, 2019, we acquired Citoxlab, a non-clinical CRO, specializing in regulated safety assessment services, non-regulated discovery services, and medical device testing. With operations in Europe and North America, the acquisition of Citoxlab further strengthens our position as a leading, global, early-stage CRO by expanding our scientific portfolio and geographic footprint, which enhances our ability to partner with clients across the drug discovery and development continuum. The purchase price for Citoxlab was $527.1 million in cash. The acquisition was funded through a combination of cash on hand and proceeds from our Credit Facility under the multi-currency revolving facility. Citoxlab is reported as part of our DSA reportable segment.

Overview of Results of Operations and Liquidity

Revenue for the three months ended March 28, 2020 was $707.1 million compared to $604.6 million in the corresponding period in 2019. This increase of $102.5 million, or 17.0%, was primarily due to the recent acquisitions of Citoxlab and HemaCare as well as growth in our DSA and Manufacturing segments; partially offset by a reduction in RMS product revenue due to the impact of the COVID-19 pandemic, and by the negative effect of changes in foreign currency exchange rates which decreased revenue by $4.6 million, or 0.7%, when compared to the corresponding period in 2019.

In the three months ended March 28, 2020, our operating income and operating income margin were $94.3 million and 13.3%, respectively, compared with $69.8 million and 11.5%, respectively, in the corresponding period of 2019. The increases in operating income and operating income margin were primarily due to contributions from our DSA segment, partially offset by lower RMS operating income and operating income margin due to the impact of the COVID-19 pandemic, as well as increased costs related to our recent acquisition of HemaCare.

Net income attributable to common shareholders decreased to $50.8 million in the three months ended March 28, 2020, from $55.1 million in the corresponding period of 2019. The decrease in Net income attributable to common shareholders was primarily due to net losses on our venture capital investments and life insurance policy investments for the three months ended March 28, 2020 as compared to net gains for both investments in the corresponding period in 2019; partially offset by higher operating income mentioned above compared to the corresponding period in 2019.

During the first three months of 2020, our cash flows from operations was $68.6 million compared with $14.9 million for the same period in 2019. The increase was driven by higher net income adjusted for non-cash items and certain favorable changes in working capital items, including favorable timing of net contract balances from contracts with customers (collectively trade receivables, net; deferred revenue; and customer contract deposits), and lower compensation payments compared to the prior year period; partially offset by the unfavorable timing of vendor and supplier payments compared to the same period in 2019.

Results of Operations

Three Months Ended March 28, 2020 Compared to the Three Months Ended March 30, 2019

Revenue and Operating Income

The following tables present consolidated revenue by type and by reportable segment:

	Three Months Ended			
	March 28, 2020	March 30, 2019	$ change	% change
	(in millions, except percentages)			
Service revenue	$ 546.6	$ 451.0	$ 95.6	21.2 %
Product revenue	160.5	153.6	6.9	4.5 %
Total revenue	$ 707.1	$ 604.6	$ 102.5	17.0 %

	Three Months Ended				
	March 28, 2020	March 30, 2019	$ change	% change	Impact of FX
	(in millions, except percentages)				
RMS	$ 146.0	$ 137.2	$ 8.8	6.4 %	(0.9)%
DSA	438.7	354.2	84.5	23.9 %	(0.5)%
Manufacturing	122.4	113.2	9.2	8.1 %	(1.5)%
Total revenue	$ 707.1	$ 604.6	$ 102.5	17.0 %	(0.7)%

The following table presents operating income by reportable segment:

	Three Months Ended			
	March 28, 2020	March 30, 2019	$ change	% change
	(in millions, except percentages)			
RMS	$ 27.4	$ 37.8	$ (10.4)	(27.6)%
DSA	72.3	46.7	25.6	54.8 %
Manufacturing	41.1	31.5	9.6	30.5 %
Unallocated corporate	(46.5)	(46.2)	(0.3)	0.5 %
Total operating income	$ 94.3	$ 69.8	$ 24.5	35.1 %
Operating income % of revenue	13.3 %	11.5 %		1.8 %

The following presents and discusses our consolidated financial results by each of our reportable segments:

RMS

	Three Months Ended				
	March 28, 2020	March 30, 2019	$ change	% change	Impact of FX
	(in millions, except percentages)				
Revenue	$ 146.0	$ 137.2	$ 8.8	6.4 %	(0.9)%
Cost of revenue (excluding amortization of intangible assets)	95.9	82.8	13.1	15.7 %	
Selling, general and administrative	19.1	16.2	2.9	18.6 %	
Amortization of intangible assets	3.6	0.4	3.2	923.6 %	
Operating income	$ 27.4	$ 37.8	$ (10.4)	(27.6)%	
Operating income % of revenue	18.7 %	27.6 %		(8.9)%	

RMS revenue increased $8.8 million due primarily to the recent acquisition of HemaCare which contributed $12.3 million to revenue growth; and higher research model services revenue, specifically our Insourcing Solutions and GEMS businesses. Partially offsetting these increases were lower research model product revenue across the majority of our locations due to the

impact of the COVID-19 pandemic, largely driven by many closures of academic clients, and the effect of changes in foreign currency exchange rates.

RMS operating income decreased $10.4 million compared to the corresponding period in 2019. RMS operating income as a percentage of revenue for the three months ended March 28, 2020 was 18.7%, a decrease of 8.9% from 27.6% for the corresponding period in 2019. Operating income and operating income as a percentage of revenue decreased primarily due to lower operating income on lower sales volume for research model products due to the COVID-19 pandemic as described above and due to the recent acquisition of HemaCare, which increased amortization of intangible assets and an inventory fair value adjustment; partially offset by higher revenue described above.

DSA

	Three Months Ended				
	March 28, 2020	March 30, 2019	$ change	% change	Impact of FX
	(in millions, except percentages)				
Revenue	$ 438.7	$ 354.2	$ 84.5	23.9 %	(0.5)%
Cost of revenue (excluding amortization of intangible assets)	301.1	252.2	48.9	19.4 %	
Selling, general and administrative	43.3	38.6	4.7	12.1 %	
Amortization of intangible assets	22.0	16.7	5.3	31.6 %	
Operating income	$ 72.3	$ 46.7	$ 25.6	54.8 %	
Operating income % of revenue	16.5 %	13.2 %		3.3 %	

DSA revenue increased $84.5 million due primarily to the recent acquisition of Citoxlab which contributed $45.3 million to service revenue growth. Additionally, service revenue increased in both the Safety Assessment and Discovery Services businesses due to demand from biotechnology clients and increased pricing of services. These increases were partially offset by the effect of changes in foreign currency exchange rates. DSA revenue was not significantly impacted by the COVID-19 pandemic during the three months ended March 28, 2020.

DSA operating income increased $25.6 million during the three months ended March 28, 2020 compared to the corresponding period in 2019. DSA operating income as a percentage of revenue for the three months ended March 28, 2020 was 16.5%, an increase of 3.3% from 13.2% for the corresponding period in 2019. These increases were primarily attributable to higher revenues described above, realizing the favorable impact of recent cost saving efficiencies, and lower acquisitions related costs, partially offset by higher amortization of intangible assets related to our recent acquisitions.

Manufacturing

	Three Months Ended				
	March 28, 2020	March 30, 2019	$ change	% change	Impact of FX
	(in millions, except percentages)				
Revenue	$ 122.4	$ 113.2	$ 9.2	8.1 %	(1.5)%
Cost of revenue (excluding amortization of intangible assets)	58.0	57.8	0.2	0.4 %	
Selling, general and administrative	21.0	21.6	(0.6)	(2.7)%	
Amortization of intangible assets	2.3	2.3	—	(3.3)%	
Operating income	$ 41.1	$ 31.5	$ 9.6	30.5 %	
Operating income % of revenue	33.6 %	27.8 %		5.8 %	

Manufacturing revenue increased $9.2 million due primarily to higher demand for products in both our Microbial Solutions' Endotoxin business and our Avian business, and higher service revenue in the Biologics business due to our facility in Pennsylvania being fully operational in 2020 compared to 2019 where work continued to be transitioned from a legacy facility; partially offset by lower product revenue in our Microbial Solutions' Bioburden business, specifically due to the timing of a large stocking order from a strategic partner in 2019, which did not recur in 2020 and the effect of changes in foreign currency

exchange rates. Manufacturing revenue was not significantly impacted by the COVID-19 pandemic during the three months ended March 28, 2020.

Manufacturing operating income increased $9.6 million during the three months ended March 28, 2020 compared to the corresponding period in 2019. Manufacturing operating income as a percentage of revenue for the three months ended March 28, 2020 was 33.6%, an increase of 5.8% from 27.8% for the corresponding period in 2019. The increases were due primarily to higher revenues as well as improved production efficiencies and the impact of certain cost savings initiatives in the three months ended March 28, 2020 compared to the same period in 2019.

Unallocated Corporate

	Three Months Ended			
	March 28, 2020	March 30, 2019	$ change	% change
	(in millions, except percentages)			
Unallocated corporate	$ 46.5	$ 46.2	$ 0.3	0.5 %
Unallocated corporate % of revenue	6.6 %	7.6 %		(1.0)%

Unallocated corporate costs consist of selling, general and administrative expenses that are not directly related or allocated to the reportable segments. The increase in unallocated corporate costs of $0.3 million, or 0.5%, compared to the corresponding period in 2019 is associated with the evaluation and integration of our recent acquisition activity and costs related to the remediation of the unauthorized access into our information systems, partially offset by a net decrease in compensation, benefits, and other employee-related expenses. Costs as a percentage of revenue for the three months ended March 28, 2020 was 6.6%, a decrease of 1.0% from 7.6% for the corresponding period in 2019.

Interest Income

Interest income, which represents earnings on cash, cash equivalents, and time deposits was $0.3 million and $0.2 million for the three months ended March 28, 2020 and the corresponding period in 2019, respectively.

Interest Expense

Interest expense for the three months ended March 28, 2020 was $15.1 million, an increase of $5.1 million, or 50.9%, compared to $10.0 million for the corresponding period in 2019. The increase was due primarily to higher interest expense from increased debt to fund our recent acquisitions and a lower foreign currency gain recognized in connection with a debt-related foreign exchange forward contract.

Other (Expense) Income, Net

Other expense, net, was $24.1 million for the three months ended March 28, 2020, a decrease of $30.4 million, or 481.7%, compared to Other income, net of $6.3 million for the corresponding period in 2019. The decrease was due primarily to net losses on our venture capital investments and life insurance policy investments for the three months ended March 28, 2020 as compared to net gains for both investments in the corresponding period in 2019.

Income Taxes

Income tax expense for the three months ended March 28, 2020 was $4.6 million, a decrease of $6.0 million compared to $10.6 million for the corresponding period in 2019. Our effective tax rate was 8.3% for the three months ended March 28, 2020, compared to 16.0% for the corresponding period in 2019. The decrease in our effective tax rate in the 2020 period compared to the 2019 period was primarily attributable to increased tax benefits from stock-based compensation deductions.

Liquidity and Capital Resources

We currently require cash to fund our working capital needs, capital expansion, acquisitions, and to pay our debt, lease, venture capital investment, and pension obligations. Our principal sources of liquidity have been our cash flows from operations, supplemented by long-term borrowings. Based on our current business plan, we believe that our existing funds, when combined with cash generated from operations and our access to financing resources, are sufficient to fund our operations for the foreseeable future as previously discussed in our section on the COVID-19 pandemic impacts.

The following table presents our cash, cash equivalents and short-term investments:

	March 28, 2020	December 28, 2019
	(in millions)	
Cash and cash equivalents:		
Held in U.S. entities	$ 197.8	$ 56.5
Held in non-U.S. entities	174.6	181.5
Total cash and cash equivalents	372.4	238.0
Short-term investments:		
Held in non-U.S. entities	1.0	1.0
Total cash, cash equivalents and short-term investments	$ 373.4	$ 239.0

Borrowings

We have a credit facility, which consists of a $750.0 million term loan, of which $184.4 million remains outstanding as of March 28, 2020, and a $2.05 billion multi-currency revolving facility (Credit Facility). The term loan facility matures in 19 quarterly installments with the last installment due March 26, 2023. The revolving facility matures on March 26, 2023, and requires no scheduled payment before that date. Under specified circumstances, we have the ability to increase the term loan and/or revolving facility by up to $1.0 billion in the aggregate.

We also have an indenture that allows for senior notes offerings under supplemental indentures. In 2018, we entered into our first supplemental indenture and raised $500.0 million in aggregate principal amount of 5.5% Senior Notes due in 2026 (2026 Senior Notes) in an unregistered offering. Under the terms of the first supplemental indenture, interest on the 2026 Senior Notes is payable semi-annually on April 1 and October 1, beginning on October 1, 2018. In 2019, we entered into our second supplemental indenture and raised an additional $500.0 million in aggregate principal amount of 4.25% Senior Notes due in 2028 (2028 Senior Notes) in an unregistered offering. Under the terms of the second supplemental indenture, interest on the 2028 Senior Notes is payable semi-annually on May 1 and November 1, beginning on May 1, 2020.

Amounts outstanding under our credit facilities and both the 2026 Senior Notes and the 2028 Senior Notes were as follows:

	March 28, 2020	December 28, 2019
	(in millions)	
Term loans	$ 184.4	$ 193.8
Revolving facility	1,168.1	676.1
2026 Senior Notes	500.0	500.0
2028 Senior Notes	500.0	500.0
Total	$ 2,352.5	$ 1,869.9

The interest rates applicable to the term loan and revolving facility under the Credit Facility are, at our option, equal to either the base rate (which is the higher of (1) the prime rate, (2) the federal funds rate plus 0.50%, or (3) the one-month adjusted LIBOR rate plus 1.0%) or the adjusted LIBOR rate, plus an interest rate margin based upon our leverage ratio.

Repurchases of Common Stock

During the three months ended March 28, 2020, we did not repurchase any shares under our authorized stock repurchase program. As of March 28, 2020, we had $129.1 million remaining on the authorized $1.3 billion stock repurchase program and we do not intend to repurchase shares for the remainder of 2020. Our stock-based compensation plans permit the netting of common stock upon vesting of restricted stock, restricted stock units, and performance share units in order to satisfy individual statutory tax withholding requirements. During the three months ended March 28, 2020, we acquired 0.1 million shares for $23.7 million through such netting.

Cash Flows

The following table presents our net cash provided by operating activities:

	Three Months Ended	
	March 28, 2020	March 30, 2019
	(in millions)	
Net income	$ 50.8	$ 55.7
Adjustments to reconcile net income to net cash provided by operating activities	87.8	55.1
Changes in assets and liabilities	(70.0)	(95.9)
Net cash provided by operating activities	$ 68.6	$ 14.9

Net cash provided by cash flows from operating activities represents the cash receipts and disbursements related to all of our activities other than investing and financing activities. Operating cash flow is derived by adjusting our net income for (1) non-cash operating items such as depreciation and amortization, stock-based compensation, deferred income taxes, gains and/or losses on venture capital investments, as well as (2) changes in operating assets and liabilities, which reflect timing differences between the receipt and payment of cash associated with transactions and when they are recognized in our results of operations. For the three months ended March 28, 2020, compared to the three months ended March 30, 2019, the increase in net cash provided by operating activities was driven by higher net income adjusted for non-cash items. While net income was slightly less compared to the prior year, the non-cash items adjusting net income were higher, specifically venture capital and life insurance investment losses of approximately $18 million in three months ended March 28, 2020 compared to gains of approximately $13 million in the corresponding period in 2019. We experienced certain favorable changes in working capital items, including favorable timing of net contract balances from contracts with customers (collectively trade receivables, net; deferred revenue; and customer contract deposits), and lower compensation payments compared to the prior year period; partially offset by the unfavorable timing of vendor and supplier payments compared to the same period in 2019.

The following table presents our net cash used in investing activities:

	Three Months Ended	
	March 28, 2020	March 30, 2019
	(in millions)	
Acquisitions of businesses and assets, net of cash acquired	$ (382.3)	$ (1.0)
Capital expenditures	(25.7)	(16.7)
Investments, net	(4.6)	(2.4)
Other, net	(1.1)	(0.7)
Net cash used in investing activities	$ (413.7)	$ (20.8)

For the three months ended March 28, 2020, the primary use of cash used in investing activities related to the acquisition of HemaCare, capital expenditures to support the growth of the business, and investments in certain venture capital and other equity investments. For the three months ended March 30, 2019, the primary use of cash used in investing activities related to our capital expenditures to support the growth of the business.

The following table presents our net cash provided by (used in) financing activities:

	Three Months Ended	
	March 28, 2020	March 30, 2019
	(in millions)	
Proceeds from long-term debt and revolving credit facility	$ 1,409.8	$ 290.1
Payments on long-term debt, revolving credit facility, and finance lease obligations	(925.1)	(360.7)
Proceeds from exercises of stock options	22.6	21.8
Purchase of treasury stock	(23.7)	(17.8)
Other, net	(4.4)	(2.5)
Net cash provided by (used in) financing activities	$ 479.2	$ (69.1)

For the three months ended March 28, 2020, net cash provided by financing activities reflected the net proceeds of $484.7 million on our Credit Facility and finance lease obligations. Included in the net proceeds are the following amounts:

- Proceeds of approximately $415 million from our revolving Credit Facility to fund our recent acquisitions. Additionally, towards the end of the fiscal quarter, we borrowed an additional $150 million from our revolving Credit Facility to secure cash on hand in response to uncertainties due to the COVID-19 pandemic; partially offset by,

- Payments of approximately $10 million on our term loan and payments of $70 million to our revolving Credit Facility in the normal course of business throughout the fiscal quarter;
- Additionally, we had $798 million of gross payments, partially offset by $794 million of gross proceeds in connection with a non-U.S. Euro functional currency entity repaying Euro loans and replacing the Euro loans with U.S. dollar denominated loans. A series of forward currency contracts were executed to mitigate any foreign currency gains or losses on the U.S. dollar denominated loans. These proceeds and payments are presented as gross financing activities.

Net cash provided by financing activities also reflected proceeds from exercises of employee stock options of $22.6 million, offset by treasury stock purchases of $23.7 million made due to the netting of common stock upon vesting of stock-based awards in order to satisfy individual statutory tax withholding requirements.

For the three months ended March 30, 2019, net cash used in financing activities reflected the net payments of $70.6 million on our Credit Facility and finance lease obligations. Included in the net proceeds are the following amounts:

- Payments of $9 million on our term loan and payments of $3 million to our revolving Credit Facility in the normal course of business throughout the fiscal quarter;
- Additionally, we had $343 million of gross payments, partially offset by $285 million of gross proceeds in connection with a non-U.S. Euro functional currency entity repaying Euro loans and replacing the Euro loans with U.S. dollar denominated loans. A series of forward currency contracts were executed to mitigate any foreign currency gains or losses on the U.S. dollar denominated loans. These proceeds and payments are presented as gross financing activities.

Net cash used in financing activities also reflected treasury stock purchases of $17.8 million made due to the netting of common stock upon vesting of stock-based awards in order to satisfy individual statutory tax withholding requirements; partially offset by proceeds from exercises of employee stock options of $21.8 million.

Contractual Commitments and Obligations

The disclosure of our contractual commitments and obligations was reported in our Annual Report on Form 10-K for fiscal 2019. There have been no material changes from the contractual commitments and obligations previously disclosed in our Annual Report on Form 10-K for fiscal 2019 other than the changes described in Note 2, “Business Combinations,” Note 7, “Fair Value,” Note 9, “Long-Term Debt and Finance Lease Obligations,” Note 16, “Leases,” and Note 17, “Commitments and Contingencies” in our notes to the unaudited condensed consolidated financial statements in this Quarterly Report on Form 10-Q.

Off-Balance Sheet Arrangements

As of March 28, 2020, we did not have any significant off-balance sheet arrangements, as defined in Item 303(a)(4)(ii) of SEC Regulation S-K promulgated under the Exchange Act, except as disclosed below.

Venture Capital Investments
We invest in several venture capital funds that invest in start-up companies, primarily in the life sciences industry. Our total commitment to the funds as of March 28, 2020 was $128.4 million, of which we funded $82.9 million through March 28, 2020. Refer to Note 6, “Venture Capital and Other Investments” in this Quarterly Report on Form 10-Q for additional information.

Letters of Credit
Our off-balance sheet commitments related to our outstanding letters of credit as of March 28, 2020 were $8.3 million.

Critical Accounting Policies and Estimates

Our discussion and analysis of our financial condition and results of operations is based upon our consolidated financial statements prepared in accordance with generally accepted accounting principles in the U.S. The preparation of these financial statements requires us to make certain estimates and assumptions that may affect the reported amounts of assets and liabilities, the reported amounts of revenues and expenses during the reported periods and related disclosures. These estimates and assumptions are monitored and analyzed by us for changes in facts and circumstances, and material changes in these estimates could occur in the future. We base our estimates on our historical experience, trends in the industry, and various other factors that are believed to be reasonable under the circumstances. Actual results may differ from our estimates under different assumptions or conditions.

We believe that the application of our accounting policies, each of which require significant judgments and estimates on the part of management, are the most critical to aid in fully understanding and evaluating our reported financial results. Our significant accounting policies are described in Note 1, “Description of Business and Summary of Significant Accounting Policies” to our Annual Report on Form 10-K for fiscal year 2019.

Recent Accounting Pronouncements

For a discussion of recent accounting pronouncements please refer to Note 1, “Basis of Presentation,” in this Quarterly Report on Form 10-Q. Other than as discussed in Note 1, “Basis of Presentation,” we did not adopt any other new accounting pronouncements during the three months ended March 28, 2020 that had a significant effect on our unaudited condensed consolidated financial statements included in this Quarterly Report on Form 10-Q.

Item 3. Quantitative and Qualitative Disclosures about Market Risk

We are exposed to market risk from changes in interest rates and currency exchange rates, which could affect our future results of operations and financial condition. We manage our exposure to these risks through our regular operating and financing activities.

Interest Rate Risk

We are exposed to changes in interest rates while conducting normal business operations as a result of ongoing financing activities. As of March 28, 2020, our debt portfolio was comprised primarily of floating interest rate borrowings. A 100-basis point increase in interest rates would increase our annual pre-tax interest expense by $13.5 million.

Foreign Currency Exchange Rate Risk

We operate on a global basis and have exposure to some foreign currency exchange rate fluctuations for our financial position, results of operations, and cash flows.

While the financial results of our global activities are reported in U.S. dollars, our foreign subsidiaries typically conduct their operations in their respective local currency. The principal functional currencies of the Company’s foreign subsidiaries are the Euro, British Pound, Canadian Dollar, and Chinese Yuan Renminbi. During the three months ended March 28, 2020, the most significant drivers of foreign currency translation adjustment the Company recorded as part of Other comprehensive income (loss) were the Canadian Dollar, British Pound, Hungarian Forint, Chinese Yuan Renminbi, Brazilian real, and Euro.

Fluctuations in the foreign currency exchange rates of the countries in which we do business will affect our financial position, results of operations, and cash flows. As the U.S. dollar strengthens against other currencies, the value of our non-U.S. revenue, expenses, assets, liabilities, and cash flows will generally decline when reported in U.S. dollars. The impact to net income as a result of a U.S. dollar strengthening will be partially mitigated by the value of non-U.S. expenses, which will decline when reported in U.S. dollars. As the U.S. dollar weakens versus other currencies, the value of the non-U.S. revenue, expenses, assets, liabilities, and cash flows will generally increase when reported in U.S. dollars. For the three months ended March 28, 2020, our revenue would have increased by $21.9 million and our operating income would have decreased by $1.1 million, if the U.S. dollar exchange rate had strengthened by 10.0%, with all other variables held constant.

We attempt to minimize this exposure by using certain financial instruments in accordance with our overall risk management and our hedge policy. We do not enter into speculative derivative agreements.

During the three months ended March 28, 2020, we entered into foreign exchange forward contracts to limit our foreign currency exposure related to both intercompany loans and a U.S. dollar denominated loan borrowed by a non-U.S. Euro functional currency entity under our Credit Facility. Refer to Note 14, “Foreign Currency Contracts” in this Quarterly Report on Form 10-Q for additional information regarding these types of forward contracts.

Item 4. Controls and Procedures

(a) Evaluation of Disclosure Controls and Procedures

Based on their evaluation, required by paragraph (b) of Rules 13a-15 or 15d-15, promulgated by the Securities Exchange Act of 1934, as amended (Exchange Act), the Company's principal executive officer and principal financial officer have concluded that the Company's disclosure controls and procedures, as defined in Rules 13a-15(e) and 15d-15(e) of the Exchange Act, are effective, at a reasonable assurance level, as of March 28, 2020, to ensure that information required to be disclosed by the Company in reports that it files or submits under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in Securities and Exchange Commission rules and forms. Disclosure controls and procedures include, without limitation, controls and procedures designed to ensure that information required to be disclosed by the Company in the reports that it files or submits under the Exchange Act is accumulated and communicated to the Company's management, including its principal executive and principal financial officers, or persons performing similar functions, as appropriate to allow timely decisions regarding required disclosure. In designing and evaluating the disclosure controls and procedures, our management recognizes that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurances of achieving the desired control objectives, and management necessarily was required to apply its judgment in designing and evaluating the controls and procedures.

(b) Changes in Internal Controls

The Company continued to execute a plan to centralize certain accounting transaction processing functions to internal shared service centers during the three months ended March 28, 2020. There were no other material changes in the Company's internal control over financial reporting identified in connection with the evaluation required by paragraph (d) of the Exchange Act Rules 13a-15 or 15d-15 that occurred during the quarter ended March 28, 2020 that materially affected, or were reasonably likely to materially affect, the Company's internal control over financial reporting.

PART II. OTHER INFORMATION

Item 1. Legal Proceedings

Please refer to Note 17, “Commitments and Contingencies” in our notes to the unaudited condensed consolidated financial statements in this Quarterly Report on Form 10-Q.

Item 1A. Risk Factors

Set forth below, elsewhere in this Form 10-Q and in other documents we file with the SEC are risks and uncertainties that could cause actual results to differ materially from the results contemplated by the forward-looking statements contained in this Form 10-Q. We note that factors set forth below, individually or in the aggregate, as well as additional risks and uncertainties either not presently known or that are currently believed to not be material to the business, may cause our actual results to differ materially from expected and historical results. You should understand that it is not possible to predict or identify all such factors. Consequently, you should not consider the following to be a complete discussion of all potential risks or uncertainties and the risks described below should be carefully considered together with the other information set forth in this report and in future documents we file with the SEC.

The COVID-19 pandemic is dynamic and expanding. The continuation of this outbreak likely will have, and the emergence of other epidemic or pandemic crises could have, material adverse effects on our business, results of operations, or financial condition.

On March 11, 2020, the World Health Organization declared the outbreak of a strain of novel coronavirus disease, COVID-19, a global pandemic. The COVID-19 pandemic is dynamic and expanding, and its ultimate scope, duration and effects are uncertain. This pandemic has and continues to result in, and any future epidemic or pandemic crises may potentially result in, direct and indirect adverse effects on our industry and customers, which in turn has (with respect to COVID-19) and may (with respect to future epidemics or crises) impact our business, results of operations and financial condition. Further, the COVID-19 pandemic may also affect our operating and financial results in a manner that is not presently known to us. Effects of the current pandemic include, or may include, among others:

- deterioration of worldwide, regional or national economic conditions and activity, which could adversely affect global demand for our products and services;
- disruptions to our operations as a result of the potential health impact on our employees and crew, and on the workforces of our customers and business partners;
- temporary and/or partial closures of our facilities or the facilities of our customers (including academic institutions, government laboratories and private foundations) and third-party service providers;
- interruption of the operations of global supply chains and those of our suppliers;
- disruptions to our business from, or additional costs related to, new regulations, directives or practices implemented in response to the pandemic, such as travel restrictions, shelter in place/stay in place/work from home orders, increased inspection regimes, hygiene measures (such as quarantining and physical distancing) or increased implementation of remote working arrangements;
- potential reduced cash flows and financial condition, including potential liquidity constraints;
- reduced access to capital, including the ability to refinance any existing obligations, as a result of any credit tightening generally or due to continued declines in global financial markets, including to the prices of publicly-traded equity securities of us, our peers and of listed companies generally;
- potential deterioration in the financial condition and prospects of our customers or attempts by customers, suppliers or service providers to invoke force majeure contractual clauses, or the legal doctrines of impossibility or impracticability (or other similar doctrines) as a result of delays or other disruptions;
- potential delays in the commencement of, or the suspension or cancellation of, client studies; and
- the effects described elsewhere in these Risk Factors.

The COVID-19 pandemic has caused us to modify our business practices, including but not limited to health management of employees, customers and suppliers, management of production inventory, supply chain risk management, compensation practices and capital expenditure planning. We have formed a tiered structure of designated COVID-19 crisis management teams throughout our organization to identify, implement and monitor such actions as required by the dynamic exigencies arising from the pandemic. Such measures and others may not be sufficient to mitigate all the risks posed by COVID-19, and our ability to perform critical functions could be materially adversely affected.

Although disruption and effects from the COVID-19 pandemic may be temporary, given the dynamic nature of these circumstances and the worldwide nature of our business and operations, the duration of any business disruption and the related financial impact to us cannot be reasonably estimated at this time but could materially affect our business, results of operations and financial condition.

Changes and uncertainties in the economy have harmed and could continue to harm our operating results.

As the COVID-19 pandemic is still ongoing and may worsen, there is significant uncertainty surrounding its developments and impacts, including whether the current epidemic or continued spread of COVID-19 will cause a broader economic slowdown or a global recession, and we cannot predict at this time the impact it will have on our business or results of operations. Changes and uncertainties in the economy have harmed and could continue to harm our operating results. As a result of the continuing economic uncertainties, our operating results, and the economic strength of our customers and suppliers, are increasingly difficult to predict. Sales of our products and services, as well as access to our products and services within our supply chain, are affected by many factors, including, among others, general economic conditions, interest rates, inflation, liquidity in the credit markets, unemployment trends, shipping costs, geopolitical events, and other factors. If economic conditions significantly weaken on a global scale it may cause some of our customers to experience a slowdown, from time to time, which may in turn have an adverse effect on our sales and operating results. Changes and uncertainties in the economy also increase the risk of uncollectible accounts receivable. The pricing we receive from suppliers may also be impacted by general economic conditions. Continued and future changes and uncertainties in the economic climate in the United States and elsewhere could have a similar negative impact on the rate and amounts of purchases by our current and potential customers, create price inflation for our products, or otherwise have a negative impact on our expenses, gross margins and revenues, and could hinder our growth.

A reduction in demand may adversely affect our business.

Our business could be adversely affected by any significant decrease in drug R&D expenditures by pharmaceutical and biotechnology companies, as well as by academic institutions, government laboratories or private foundations. Similarly, economic factors and industry trends that affect our clients in these industries (including the COVID-19 pandemic and the impact of measures intended to reduce the spread of COVID-19) also affect their R&D budgets and, consequentially, our business as well.

Our clients include researchers at pharmaceutical and biotechnology companies. Our ability to continue to grow and win new business is dependent in large part upon the ability and willingness of the pharmaceutical and biotechnology industries to continue to spend on molecules in the non-clinical phases of R&D (and in particular discovery and safety assessment) and to outsource the products and services we provide. Furthermore, our clients (particularly larger biopharmaceutical companies) continue to search for ways to maximize the return on their investments with a focus on lowering R&D costs per drug candidate. Fluctuations in the expenditure amounts in each phase of the R&D budgets of these researchers and their organizations could have a significant effect on the demand for our products and services. R&D budgets fluctuate due to changes in available resources, mergers of pharmaceutical and biotechnology companies, spending priorities (including available resources of our biotechnology clients, particularly those that are cash-negative, who may be highly focused on rationing their liquid assets in a challenging funding environment), general economic conditions, institutional budgetary policies and the impact of government regulations, including potential drug pricing legislation. Available funding for biotechnology clients in particular may be affected by the capital markets, investment objectives of venture capital investors and priorities of biopharmaceutical industry sponsors.

For additional discussion of the factors that we believe have recently been influencing R&D budgets at our clients, please see the section entitled “Management’s Discussion and Analysis of Financial Condition and Results of Operations” included elsewhere in this Form 10-Q in addition to the sections entitled “Our Strategy” and “Management’s Discussion and Analysis of Financial Condition and Results of Operations” included in our Form 10-K for the fiscal year ended December 28, 2019, filed with the Commission on February 11, 2020.

Further, our Research Products operations are structured to produce particular blood products based on customers’ existing demand, and perceived potential changes in demand, for these products. Sudden or unexpected changes in demand for these products could have an adverse impact on our profitability. Increasing demand could harm relationships with customers if we are unable to alter production capacity, or purchase products from other suppliers, to fill orders adequately. This could result in a decrease in overall revenue and profits. The impact of measures intended to reduce the spread of COVID-19 has caused us to temporarily suspend blood donations at our Research Products facilities, further limiting our ability to respond to changes in demand. Lack of access to sufficient capital, or lack of adequate time to properly (or the failure to adequately) respond to changes in demand, could result in declining revenue and profits, as customers transfer to other suppliers.

A reduction or delay in government funding of R&D may adversely affect our business.

A portion of revenue, predominantly in our RMS segment, is derived from clients at academic institutions and research laboratories whose funding is partially dependent on both the level and timing of funding from government sources such as the

U.S. National Institutes of Health (NIH) and similar domestic and international agencies, which can be difficult to forecast. We also sell directly to the NIH and these other agencies. Government funding of R&D is subject to the political process, which is inherently fluid and unpredictable. Our revenue may be adversely affected if our clients delay purchases as a result of uncertainties surrounding the approval of government budget proposals, included reduced allocations to government agencies that fund R&D activities. Government proposals to reduce or eliminate budgetary deficits have sometimes included reduced allocations to the NIH and other government agencies that fund R&D activities, or NIH funding may not be directed towards projects and studies that require the use of our products and services, both of which could adversely affect our business and our financial results. Furthermore, changes in government budgetary priorities as a result of the COVID-19 pandemic and the impact of measures intended to reduce the spread of COVID-19 could reduce government funding of R&D that is unrelated to the disease, which could adversely affect our business and our financial results.

Several of our product and service offerings are dependent on a limited source of supply that, when interrupted, adversely affects our business.

We depend on a limited international source of supply for certain products, such as large research models. Disruptions to their continued supply from time to time arise from health problems (including as a result of the COVID-19 pandemic and the spread of other diseases), export or import laws/restrictions or embargoes, tariffs, international trade regulations, foreign government or economic instability, severe weather conditions, increased competition among suppliers for models, disruptions to the air travel system, activist campaigns, commercial disputes, supplier insolvency, geopolitical disputes, measures intended to slow the spread of COVID-19 or other ordinary course or unanticipated events. Any disruption of supply could materially harm our business if we cannot remove the disruption or are unable to secure an alternative or secondary supply source on comparable commercial terms. While we continue to take steps to find alternative supply channels and lock in supply with preferred sources through multi-year and/or minimum commitment contracts, such mitigating efforts may not prove successful at ensuring a steady and timely supply or may require (and in the past have required) us to pay significantly higher prices for such products during periods of global shortage or restrictions on the transportation of products. In addition, limited global supply or regional restrictions on transportation for certain products may require us to source products from non-preferred vendors.

Further, our Research Products business depends on the availability of appropriate donors. As a result of the COVID-19 pandemic and the impact of measures intended to reduce the spread of COVID-19 we have chosen to temporarily suspend blood donations at our Research Products facilities, thus limiting our access to new donors. As donor participation declines, we may not be able to reduce costs sufficiently to maintain profitability of the Research Products business. Regulations intended to reduce the risk of introducing infectious diseases in the blood supply (including COVID-19) could also result in a decreased pool of potential donors or integrity of inventory. Due to any pandemic, epidemic or outbreak in one or more regions in which our Research Products business operates, the portion of the public that typically donates may be unable, or unwilling to donate, thereby significantly reducing the availability of research products upon which we rely. In addition, the heightened fear and health concerns among the public resulting from widespread media coverage may result in a dramatic decline in donations when our blood donation facilities re-open.

We bear financial risk for contracts that may be terminated or reduced in scope, underpriced, subject to cost overruns or delayed.

Many of our agreements, including those which underlie our strategic relationships with some of our more significant clients, provide for termination or reduction in scope with little or no notice. In addition, we sell our products and services to our competitors, and similarly they sell products and services to us. For instance, we have historically entered into, and currently are party to, contracts with certain of our competitors to distribute specialty research models in locations where our competitors may not have distribution capabilities.

Our counterparties (including our clients who are competitors) may elect to terminate their agreements with us for various reasons including:

- the invocation of force majeure clauses, or the legal doctrines of impossibility or impracticability (or other similar legal doctrines), as a result of the COVID-19 pandemic;
- the products being tested fail to satisfy safety requirements;
- unexpected or undesired study results;
- production problems resulting in shortages of the drug being tested;
- a client’s decision to forego or terminate a particular study;
- our competitors’ establishment of alternative distribution channels;
- dissatisfaction with our performance under the agreement;
- the loss of funding for the particular research study; or

- general convenience/counterparty preference.

If a counterparty terminates a contract with us, we are typically entitled under the terms of the contract to receive revenue earned to date as well as certain other costs and, in some cases, termination fees; however, in many cases we are not entitled to any termination fees in the event of a termination as a result of force majeure. Cancellation of a large contract or proximate delay, cancellation or conclusion of multiple contracts could materially adversely affect our business and, therefore, may adversely affect our operating results.

Furthermore, many of our contracts provide for services on a fixed price or fee-for-service with a cap basis and, accordingly, we bear the financial risk if we initially underprice our contracts or otherwise overrun our cost estimates. Such underpricing or significant cost overruns could have an adverse effect on our business, results of operations, financial condition and cash flows.

We have in the past experienced and in the future could experience an unauthorized access into our information systems.

We operate large and complex information systems that contain significant amounts of client data. As a routine element of our business, we collect, analyze and retain substantial amounts of data pertaining to the non-clinical studies we conduct for our clients. Unauthorized third parties could attempt to gain entry to such information systems to steal data or disrupt the systems or for financial gain. Like other companies, we have on occasion experienced, and will continue to experience, threats and incursions to our data and systems, including malicious codes and viruses, phishing, business email compromise and social engineering attacks or other cyber-attacks. The number and complexity of these threats continue to increase over time.
While we have taken measures to protect our information systems from intrusion, in March 2019, we detected evidence that an unauthorized third party, who we believe was well resourced and highly sophisticated, accessed certain of our information systems and copied data. We worked with a leading cyber security firm to assist in our investigation and coordinated with law enforcement authorities. Our investigation indicated that the affected information included client information.

In December 2019, we disclosed that we had completed our remediation of the incident identified in March of 2019. While we have implemented additional security safeguards, including:

- remediation of the March 2019 incident;
- cooperation with U.S. Federal authorities' investigation into the incident and established an ongoing relationship to better understand the ever-changing nature of cybersecurity related threats;
- additional visibility into our network and environment;
- additional monitoring of our environment;
- active threat hunting in our environment;
- a reduction of our footprint of externally facing technology;
- enhanced protection for externally facing web applications;
- the addition of Multi-Factor Authentication to ingress points;
- the addition of denial of service attack protection; and
- increased network segmentation,

such efforts may not be successful, in which case we could suffer significant harm.

Further, we are at risk of being targeted, and we have in the past been victim to, business email compromise fraud, which results in payments being made to illegitimate bank accounts. Although these instances have not resulted in our incurring material losses, if similar instances occur in the future, we may incur such losses.

Our contracts with our clients typically contain provisions that require us to keep confidential the information generated from the studies we conduct. In the event the confidentiality of such information is compromised, whether by unauthorized access or other breaches, we could be exposed to significant harm, including termination of customer contracts, damage to our customer relationships, damage to our reputation and potential legal claims from customers, employees and other parties. In addition, we may face investigations by government regulators and agencies as a result of a breach.

Further, we are required to comply with the data privacy and security laws in many jurisdictions. For example, we are required to comply with the European Union (EU) General Data Protection Regulation (GDPR), which became effective on May 25, 2018 and imposes heightened obligations and enhanced penalties for noncompliance (including up to four percent (4%) of global revenue). The cost of compliance, and the potential for fines and penalties for non-compliance, with GDPR may have a significant adverse effect on our business and operations. Also, the California legislature passed the California Consumer Privacy Act (CCPA), which became effective January 1, 2020. The CCPA creates new transparency requirements and grants

California residents several new rights with regard their personal information. Failure to comply with the CCPA may result in, among other things, significant civil penalties and injunctive relief, or potential statutory or actual damages. We have made changes to, and investments in, our business practices and will continue to monitor developments and make appropriate changes to help attain compliance with these evolving and complex regulations. Additionally, while collecting research products from donors, we may collect, use, disclose, maintain and transmit patient information in ways that will be subject to many of the numerous state, federal and international laws and regulations governing the collection, use, disclosure, storage, transmission or confidentiality of patient-identifiable health information.

Contaminations in our animal populations can damage our inventory, harm our reputation for contaminant-free production, result in decreased sales and cause us to incur additional costs.

Our research models and fertile chicken eggs must be free of certain infectious agents, such as certain viruses and bacteria, because the presence of these contaminants can distort or compromise the quality of research results and could adversely impact human or animal health. The presence of these infectious agents in our animal production facilities and certain service operations could disrupt our contaminant-free research model and fertile egg production as well as our animal services businesses, including GEMS, harm our reputation for contaminant-free production and result in decreased sales. There also exists a risk that contaminations from models that we produce may affect our client's facilities, with similar impact to them for which we could be liable for damages. In some cases, we may produce or import animals carrying infectious agents capable of causing disease in humans; and in the case of such a contamination or undiagnosed infection, there could be a possible risk of human exposure and infection and liability for damages to infected persons.

We are also subject to similar contamination risks with respect to our large research models. While some of these models are owned by us and maintained at our facilities, others are reserved for us and maintained at sites operated by the original provider. Accordingly, risk of contamination may be outside of our control, and we depend on the practices and protocols of third parties to ensure a contamination-free environment. A contamination may require extended CDC quarantine with subsequent reduced sales as a result of lost client orders, as well as the potential for complete inventory loss and disinfection of the affected quarantine rooms. Furthermore, while we often negotiate for contractual risk indemnification, the third party may refuse to fulfill its indemnification obligation or may be unable to as a result of insolvency or other impediments.

Contaminations are unanticipated and difficult to predict and could adversely impact our financial results. If they occur, contaminations typically require cleaning up, renovating, disinfecting, retesting and restarting production or services. Such clean-ups result in inventory loss, clean-up and start-up costs, and reduced sales as a result of lost client orders and potentially credits for prior shipments. In addition to microbiological contaminations, the potential for genetic mix-ups or mis-matings also exists and may require us to restart the applicable colonies, and would likely result in inventory loss, additional start-up costs and possibly reduced sales. Contaminations also expose us to risks that clients will request compensation for damages in excess of our contractual indemnification requirements.

Further, many of our operations are comprised of complex mechanical systems that are subject to periodic failure, including aging fatigue. Such failures are unpredictable, and while we have made significant capital expenditures designed to create redundancy within these mechanical systems, strengthen our biosecurity, improve our operating procedures to protect against such contaminations, and replace impaired systems and equipment in advance of such events, failures and/or contaminations may still occur.

Any failure by us to comply with applicable regulations and related guidance could harm our reputation and operating results, and compliance with new regulations and guidance may result in additional costs.

Any failure on our part to comply with applicable regulations could result in the termination of ongoing research or the disqualification of data for submission on behalf of our clients to regulatory authorities. This could harm our reputation, our prospects for future work and our operating results. For example, the issuance of a notice of objectionable observations or a warning letter from the FDA based on a finding of a material violation affecting data integrity by us for GLP or cGMP requirements that are not addressed to the regulatory monitoring authorities' satisfaction could materially and adversely affect us. If our operations are found to violate any applicable law or other governmental regulations, we might be subject to civil and criminal penalties, damages and fines or the temporary closure of our facilities. Any action against us for violation of these laws or regulations, even if we successfully defend against it, could cause us to incur significant legal expenses, divert our management's attention from the operation of our business and damage our reputation.

In recent years FDA has issued guidance that now requires submissions to be presented in a format that conforms with the FDA's SEND (Standardization for Exchange of Nonclinical Data) standards that apply to our clients' NDA and IND submissions and require us to provide electronic data in specific formats that will allow for more efficient, higher quality regulatory reviews. Accordingly, our clients expect us to timely deliver their nonclinical data compliant with SEND. Notwithstanding, some of these standards require additional operating and capital expenses that will impact not only us and our industry competitors, but clients in the biomedical research community. Non-compliance with any of these expectations could lead to official action by a government authority, damage to our reputation and a potential loss of business.

In addition, regulations and guidance worldwide concerning the production and use of laboratory animals for research purposes continue to evolve. Similarly, guidance has been and continues to be developed for other areas that impact the biomedical research community on both a national and international basis including transportation, mandated contingency planning, euthanasia guidance, import and export requirements of biological materials, health monitoring requirements and the use of disinfectants.

Our Research Products business is subject to extensive and complex regulation by federal, state and local governments in the U.S. and in the other countries in which it operates. This business requires us to obtain many licenses, permits, authorizations, approvals, certificates and other types of governmental permissions and to comply with various regulations in every jurisdiction in which we operate. Federal, state and local regulations change often, and new regulations are frequently adopted. Changes in the regulations could require us to change the way in which we operate our business and the cost of compliance with new or changed regulations could be significant.

Our donor collection centers are registered with the FDA and the FDA periodically conducts inspections of those facilities and operations. At the conclusion of each inspection, the FDA provides us with a list of observations of regulatory issues discovered during the inspection that could result in additional regulatory action. Failure to comply with the regulations of the FDA could result in sanctions and/or remedies and have a material adverse effect on us.

The outsourcing trend in non-clinical (discovery and safety assessment) stages of drug discovery and development may decrease, which could impair our growth.

Over the past decade, pharmaceutical and biotechnology companies have generally increased their outsourcing of non-clinical research support activities, such as discovery and safety assessment. While many industry analysts expect the outsourcing trend to continue to increase for the next several years (although with different growth rates for different phases of drug discovery and development), decreases in such outsourcing may result in a diminished growth rate in the sales of any one or more of our service lines and may adversely affect our financial condition and results of operations. For additional discussion of the factors that we believe have recently influenced outsourcing demand from our clients, please see the section entitled “Our Strategy” included in our Form 10-K for the fiscal year ended December 28, 2019, filed with the Commission on February 11, 2020.

Changes in government regulation or in practices relating to the pharmaceutical or biotechnology industries, including potential healthcare reform, could decrease the need for the services we provide.

Governmental agencies throughout the world strictly regulate the drug development process. Our business involves helping our customers navigate these regulatory processes. Accordingly, many regulations, and often new regulations, are expected to result in higher regulatory standards and often additional revenues for companies that service these industries. However, some changes in regulations, such as a relaxation in regulatory requirements or the introduction of streamlined or expedited drug approval procedures, or an increase in regulatory requirements that we have difficulty satisfying or that make our services less competitive, could eliminate or substantially reduce the demand for our services.

Although we believe we are currently in compliance in all material respects with applicable national, regional and local laws, as well as other accepted guidance used by oversight bodies (including the USDA, the standards set by the International Air Transport Association, the Convention on International Trade in Endangered Species of Wild Fauna and Flora, U.S. Fish and Wildlife Service, The Centers for Disease Control, the Department of Transportation, the Department of State, the office of Laboratory Animal Welfare of NIH, the Drug Enforcement Agency, as well as numerous other oversight agencies in the jurisdictions in which we operate), failure to comply could subject us to denial of the right to conduct business, fines, criminal penalties and other enforcement actions. In addition, if regulatory authorities were to mandate a significant reduction in safety assessment procedures that utilize laboratory animals (as has been advocated by certain groups), certain segments of our business could be materially adversely affected.

In March 2010, the U.S. Congress enacted healthcare reform legislation, the Patient Protection and Affordable Care Act (ACA), which includes provisions impacting drug manufacturers, such as (1) the expansion of access to health insurance coverage, (2) the expansion of the Medicaid program, (3) the enactment of an industry fee on pharmaceutical companies and (4) the imposition of an excise tax on the sale of medical devices. In addition, the Tax Cuts and Jobs Act, enacted in 2017, repeals the ACA’s individual health insurance mandate, which is considered a key component of the ACA. Since the ACA and its implementation continue to face challenges in Congress and federal courts, and from certain state governments, opposition advocacy groups and some small business organizations, the ultimate effects of this legislation are unclear on our business and are unable to predict what legislative proposals will be adopted in the future.

Implementation of healthcare reform legislation may have certain benefits, but also may contain costs that could limit the profits that can be made from the development of new drugs. This could adversely affect R&D expenditures by pharmaceutical and biotechnology companies, which could in turn decrease the business opportunities available to us both in the U.S. and abroad. In addition, new laws or regulations may create a risk of liability, increase our costs or limit our service offerings.

Furthermore, if health insurers were to change their practices with respect to reimbursements for pharmaceutical products, our clients may spend less or reduce their growth in spending on R&D.

While it is not possible to predict whether and when any such changes will occur, changes at the local, state or federal level, or in laws and regulations in effect in foreign jurisdictions in which we operate or have business relationships, may significantly impact our domestic and foreign businesses and/or those of our clients. Furthermore, modifications to international trade policy, public company reporting requirements, environmental regulation and antitrust enforcement may have a materially adverse impact on us, our suppliers or our clients.

If we are not successful in selecting and integrating the businesses and technologies we acquire, or in managing our current and future divestitures, our business may be adversely impacted.

During the last two decades, we have steadily expanded our business through numerous acquisitions, including our recent acquisitions of Citoxlab and HemaCare. However, businesses and technologies may not be available on terms and conditions we find acceptable. We risk spending time and money investigating and negotiating with potential acquisition or alliance partners, but not completing transactions. Further, while we plan to continue to acquire businesses and technologies and form strategic alliances, we have recently reduced the pace of this activity as we assess the impact of the COVID-19 pandemic.

Acquisitions and alliances involve numerous risks which may include:

- difficulties in achieving business and financial success (including as a result of COVID-19 pandemic and the long-term economic impact of the pandemic);
- difficulties and expenses incurred in assimilating and integrating operations, services, products, information technology platforms, technologies or pre-existing relationships with our clients, distributors and suppliers;
- challenges with developing and operating new businesses, including those that are materially different from our existing businesses and that may require the development or acquisition of new internal capabilities and expertise;
- potential losses resulting from undiscovered liabilities of acquired companies that are not covered by the indemnification we may obtain from the seller or the insurance we acquire in connection with the transaction;
- loss of key employees;
- the presence or absence of adequate internal controls and/or significant fraud in the financial systems of acquired companies;
- diversion of management’s attention from other business concerns;
- a more expansive regulatory environment;
- acquisitions could be dilutive to earnings, or in the event of acquisitions made through the issuance of our common stock to the shareholders of the acquired company, dilutive to the percentage of ownership of our existing shareholders;
- differences in foreign business practices, customs and importation regulations, language and other cultural barriers in connection with the acquisition of foreign companies;
- new technologies and products may be developed that cause businesses or assets we acquire to become less valuable; and
- disagreements or disputes with prior owners of an acquired business, technology, service or product that may result in litigation expenses and diversion of our management’s attention.

If an acquired business, technology or an alliance does not meet our expectations, our results of operations may be adversely affected.

Some of the same risks exist when we decide to sell a business, site or product line. In addition, divestitures could involve additional risks, including the following:

- difficulties in the separation of operations, services, products, and personnel;
- diversion of management’s attention from other business concerns; and
- the need to agree to retain or assume certain current or future liabilities in order to complete the divestiture.

We continually evaluate the performance and strategic fit of our businesses (including specific product lines and service offerings) to determine whether any divestitures are appropriate. Any divestitures may result in significant write-offs, including those related to goodwill and other intangible assets and which could have an adverse effect on our results of operations and financial condition. In addition, we may encounter difficulty in finding buyers or alternative exit strategies at acceptable prices

and terms, and in a timely manner. We may not be successful in managing these or any other significant risks that we encounter in divesting a business, site or product line or service offering and, as a result, we may not achieve some or all of the expected benefits of the divestiture.

Impairment of goodwill or other intangible assets may adversely impact future results of operations.

We have intangible assets, including goodwill, on our balance sheet due to our acquisitions of businesses. The initial identification and valuation of these intangible assets and the determination of the estimated useful lives at the time of acquisition involve use of management judgments and estimates. These estimates are based on, among other factors, projections of cash flows that arise from identifiable intangible assets of acquired businesses and discount rates based on an analysis of our weighted average cost of capital, adjusted for specific risks associated with the assets. Disruptions in global financial markets and deterioration of economic conditions (including as a result of the COVID-19 pandemic and the impact of measures intended to reduce the spread of COVID-19) could, among other things, impact the discount rate. Other assumptions used in the valuations and actual cash flows arising from a particular intangible asset could vary from projected cash flows, which could imply different carrying values from those established at the dates of acquisition and which could result in impairment of such assets.

If the future growth and operating results of our business are not as strong as anticipated, overall macroeconomic or industry conditions deteriorate and/or our market capitalization declines, this could impact the assumptions used in establishing the carrying value of goodwill or other intangible assets. Should the COVID-19 pandemic have a prolonged impact on our industry, triggering events may arise resulting in intangible asset or goodwill impairments. To the extent goodwill or other intangible assets are impaired, their carrying value will be written down to their implied fair values and a charge will be made to our income from continuing operations. Such an impairment charge could materially and adversely affect our operating results. As of March 28, 2020, the carrying amount of goodwill and other intangibles on our consolidated balance sheet was $2.6 billion.

Our business is subject to changes in foreign currency exchange rates and other risks relating to operating internationally.

A significant part of our revenue is derived from operations outside the U.S. We expect that international revenue will continue to account for a significant percentage of our total revenue for the foreseeable future.

Changes in foreign currency exchange rates, could materially adversely impact our results. Foreign currencies we receive for sales and in which we record expenses outside the U.S. could be subject to unfavorable exchange rates with the U.S. dollar, resulting in a reduction in the amount of revenue and cash flow (and an increase in the amount of expenses) that we recognize and causing fluctuations in reported financial results. We also carry foreign currency exposure associated with differences between where we conduct business. For example, certain contracts are frequently denominated in currencies other than the currency in which we incur expenses related to those contracts. Where expenses are incurred in currencies other than those in which contracts are priced, fluctuations in the relative value of those currencies could have a material adverse effect on our results of operations.

Our exposure to currency exchange rate fluctuations results from the currency translation exposure associated with the preparation of our consolidated financial statements, as well as from the exposure associated with transactions of our subsidiaries that are denominated in a currency other than the respective subsidiary's functional currency. While our financial results are reported in U.S. Dollars, the financial statements of many of our subsidiaries outside the U.S. are prepared using the local currency as the functional currency. During consolidation, these results are translated into U.S. Dollars by applying appropriate exchange rates. As a result, fluctuations in the exchange rate of the U.S. Dollar relative to the local currencies in which our foreign subsidiaries report could cause significant fluctuations in our reported results. Moreover, as exchange rates vary, revenue and other operating results may differ materially from our expectations. Adjustments resulting from financial statement translations are included as a separate component of shareholders' equity.

Other risks associated with our international business include:

- general economic and political conditions in the markets in which we operate, including implications of Brexit and the COVID-19 pandemic;
- potentially negative consequences from changes in U.S. and/or foreign tax laws, or interpretations thereof, notably tax regulations issued and to-be-issued with respect to U.S. Tax Reform and the EU Anti-Tax Avoidance Directives I and II;
- potential international conflicts, including terrorist acts;
- exchange controls, adverse tax consequences and legal restrictions on the repatriation of funds into the U.S.;
- difficulties and costs associated with staffing and managing foreign operations, including risks of COVID-19 pandemic related suspensions of operations, work stoppages and/or strikes, as well as violations of local laws or anti-

bribery laws such as the U.S. Foreign Corrupt Practices Act (FCPA), the U.K. Bribery Act and the OECD Convention on Combating Bribery of Foreign Public Officials in International Business Transactions;

- unexpected changes in regulatory requirements (including as a result of the COVID-19 pandemic);
- the difficulties of compliance with a wide variety of foreign laws and regulations (including those relating to the COVID-19 pandemic);
- unfavorable labor regulations in foreign jurisdictions (including those relating to the COVID-19 pandemic);
- longer accounts receivable cycles in certain foreign countries (including as a result of the COVID-19 pandemic and the impact of measures intended to reduce the spread of COVID-19); and
- compliance with export controls, import requirements and other trade regulations, including those relating to certain products of which there is limited supply.

These risks, individually or in the aggregate, could have an adverse effect on our results of operations and financial condition. For example, as mentioned above, we are subject to compliance with the FCPA and similar anti-bribery laws, which generally prohibit companies and their third-party intermediaries from making improper payments to foreign government officials for the purpose of obtaining or retaining business. While our employees, distributors and agents are required to comply with these laws, we cannot be sure that our internal policies and procedures will always protect us from violations of these laws despite our commitment to legal compliance and corporate ethics. The occurrence or allegation of these types of risks may adversely affect our business, performance, prospects, value, financial condition and results of operations.

Our operations might be affected by the occurrence of a natural disaster or other catastrophic event, and have been (and will continue to be) affected by the COVID-19 pandemic.

We depend on our customers and facilities for the continued operation of our business. While we maintain disaster recovery plans, they might not adequately protect us. Despite any precautions we take for natural disasters or other catastrophic events, these events, including terrorist attack, a pandemic (including the COVID-19 pandemic), epidemic or outbreak of a disease, hurricanes, fire, floods and ice and snow storms, could result in damage to and closure of our or our customers' facilities or the infrastructure on which such facilities rely. As described herein, the COVID-19 pandemic has already, and will continue to, materially disrupt our operations, though the full extent of such impact remains uncertain. Such disruptions could include significant delays in the shipments of our products, reduce our capacity to provide services, eradicate unique manufacturing capabilities, result in our customers' inability to pay for our products or services and, ultimately, result in the loss of revenue and clients. Although we carry business interruption insurance policies and typically have provisions in our contracts that protect us in certain events, our coverage might not be adequate to compensate us for all losses that may occur. Any natural disaster or catastrophic event affecting us or our customers could have a significant negative impact on our operations and financial performance.

Failure to comply with U.S., state, local or international environmental, health and safety laws and regulations, including regulations issued by the Occupational Safety and Health Administration, Environmental Protection Agency, Nuclear Regulatory Agency and Department of Transportation, could result in fines and penalties and loss of licensure, and have a material adverse effect upon the Company's business.

We are subject to licensing and regulation under laws and regulations relating to the protection of the environment and human health and safety, including laws and regulations relating to the handling, transportation and disposal of medical specimens, infectious and hazardous waste and radioactive materials, as well as regulations relating to the safety and health of laboratory employees and protecting employees from the spread of COVID-19. Failure to comply with these laws and regulations could subject us to denial of the right to conduct business, fines, criminal penalties and/or other enforcement actions that could have a material adverse effect on our business. In addition, compliance with future legislation could impose additional requirements on us that may be costly.

New technologies may be developed, validated and increasingly used in biomedical research, which could reduce demand for some of our products and services.

The scientific and research communities continue to explore methods to develop improved cellular and animal model systems that would increase the translation to human studies and vice-versa and possibly replace or supplement the use of traditional living animals as test platforms in biomedical research. Some companies have developed techniques in these areas that may have scientific merit to improve translation between species. In addition, technological improvements to existing or new processes, such as imaging and other translational biomarker technologies, could result in the refinement and utility for the number of animal research models necessary to improve the translation from non-clinical to clinical studies. There is an increasing push to focus on *in vitro* technologies such that employ human biospecimens, stem cell technologies and genome editing.

It is our strategy to explore these *in vitro* technologies to refine and potentially reduce the utilization of animal models as these new methods become validated. For example, our Discovery and Safety Assessment businesses have programs to evaluate the utility of induced pluripotent stems cells, advanced *in vitro* models, artificial intelligence and machine learning in discovery and preclinical development. Successful commercialization of alternatives to traditional research models may not be sufficient to fully offset reduced sales or profits from research models. In addition, alternative research methods could decrease the need for future research models, and we may not be able to develop new products effectively or in a timely manner to replace any lost sales. Lastly, other companies or entities may develop research models with characteristics different than the ones that we produce, and which may be viewed as more desirable by some of our clients.

Negative attention from special interest groups may impair our business.

The products and services that we provide our clients are essential to the drug discovery, development and manufacturing processes, and a significant amount are mandated by law. Notwithstanding, certain special interest groups categorically object to the use of animals for valid research purposes. Historically, our core research model activities with rats, mice and other rodents have not been the subject of significant animal rights media attention. However, research activities with animals have been the subject of adverse attention, including shareholder proposals and attempts to disrupt air carriers from transporting research models, impacting the industry. This has included periodic demonstrations near facilities operated by us and at our annual meetings, as well as shareholder proposals we received for some of our past Annual Meetings of Shareholders. Any negative attention, threats or acts of vandalism directed against either our animal research activities or our third-party service providers, such as our airline carriers, in the future could impair our ability to operate our business efficiently.

Our debt level could adversely affect our business and growth prospects.

As of March 28, 2020, we had $2.4 billion of debt. Our debt could have significant adverse effects on our business, including making it more difficult for us to obtain additional financing on favorable terms; requiring us to dedicate a substantial portion of our cash flows from operations to the repayment of debt and the interest on this debt; limiting our ability to capitalize on significant business opportunities; and making us more vulnerable to rising interest rates. For additional information regarding our debt, please see Note 9, “Long-Term Debt and Finance Lease Obligations”, included in the notes to our unaudited condensed consolidated financial statements included elsewhere in this Form 10-Q.

The interest rate on our credit facility (Credit Facility), which matures in fiscal year 2023, is linked to LIBOR. As of March 28, 2020, amounts outstanding on our Credit Facility were $184.4 million on our term loan and $1.2 billion on our revolving credit facility, for which there is an aggregate available borrowing capacity of $2.05 billion. In 2017, the Financial Conduct Authority (FCA) in the U.K. announced that it would phase out LIBOR as a benchmark by the end of 2021. It is unclear whether new methods of calculating LIBOR will be established such that it continues to exist after 2021, or whether different benchmark rates used to price indebtedness will develop. If LIBOR ceases to exist, the method and rate used to calculate our interest rates and/or payments on our debt in the future may result in interest rates and/or payments that are higher than, or that do not otherwise correlate over time with, the interest rates and/or payments that would have been applicable to our obligations if LIBOR was available in its current form, which could have a material adverse effect on our financial position, results of operations and liquidity. While we continue to take steps to mitigate the impact of the phase-out or replacement of LIBOR, such efforts may not prove successful. In addition, the overall financial market may be disrupted as a result of the phase-out or replacement of LIBOR. Disruption in the financial market could also have a material adverse effect on our financial position, results of operations and liquidity.

Costs increasing more rapidly than market prices could reduce profitability.

The cost of collecting, processing and testing blood products has risen significantly in recent years and will likely continue to increase. These cost increases are related to new and improved testing procedures, increased regulatory requirements related to blood safety, and higher staff and supply costs related to collecting and processing blood products. Competition and fixed price contracts may limit our ability to maintain existing operating margins. Some competitors have greater resources than us to sustain periods of marginally profitable or unprofitable sales. Costs increasing more rapidly than market prices may reduce profitability and may have a material adverse impact on our business and results of operations.

The industries in which we operate are highly competitive.

The industries in which we operate are highly competitive. We compete for business with other CROs and blood product and therapeutic services companies, as well as internal discovery and development departments within our larger clients, who may have greater resources than ours. We also compete with universities and teaching hospitals for outsourced services. We compete on a variety of factors, including:

- reputation for on-time quality performance;
- reputation for regulatory compliance;
- expertise and experience in multiple specialized areas;

- scope and breadth of service and product offerings across the drug discovery and development spectrum;
- scope and breadth of service and product offerings across the manufacturing support spectrum;
- ability to provide flexible and customized solutions to support our clients' drug discovery, non-clinical development, and manufacturing support needs;
- broad geographic availability (with consistent quality);
- price/value, spend and flexibility;
- technological and scientific expertise and efficient drug development processes;
- quality of facilities;
- financial stability;
- size;
- ability to acquire, process, analyze and report data in an accurate manner; and
- accessibility of client data through secure portals.

If we do not compete successfully, our business will suffer. Increased competition might lead to price and other concessions that could adversely affect our operating results. The drug discovery and development services industry has continued to see a trend towards consolidation, particularly among the biotechnology companies, which are targets for each other and for large pharmaceutical companies. If this trend continues, it is likely to produce more competition among the larger companies and CROs generally, with respect to both clients and acquisition candidates. In addition, small, specialized entities considering entering the CRO industries will continue to find lower barriers to entry, and private equity firms may determine that there are opportunities to acquire and consolidate these companies, thus further increasing possible competition. More generally, our competitors or others might develop technologies, services or products that are more effective or commercially attractive than our current or future technologies, services or products, or that render our technologies, services or products less competitive or obsolete. If competitors introduce superior technologies, services or products and we cannot make enhancements to ours to remain competitive, our competitive position, and in turn our business, revenue and financial condition, would be materially and adversely affected. In the aggregate, these competitive pressures may affect the attractiveness of our technologies, services or products and could adversely affect our financial results.

Changes in U.S. and International Tax Law.

In 2017, significant U.S. tax law changes from the Tax Cuts and Jobs Act of 2017 (U.S. Tax Reform) went into effect and reduced the U.S. federal statutory tax rate, broadened the corporate tax base through the elimination or reduction of deductions, exclusions and credits, limited the ability of U.S. corporations to deduct interest expense and allowed for the repatriation of foreign earnings to the U.S. with a 100% federal dividends received deduction prospectively. In addition, U.S. Tax Reform required a one-time transitional tax on foreign cash equivalents and previously unremitted earnings. Several of the new provisions enacted as part of U.S. Tax Reform still require clarification and guidance from the Internal Revenue Service (IRS) and Treasury Department. These or other changes in U.S. tax laws could impact our profits, effective tax rate and cash flows.

On March 27, 2020, the Coronavirus Aid, Relief and Economic Security Act ("CARES Act"), which is aimed at providing emergency assistance and health care for individuals, families, and businesses affected by the COVID-19 pandemic and generally supporting the U.S. economy went into effect. The CARES Act, among other things, includes provisions relating to refundable payroll tax credits, deferment of employer side social security payments, net operating loss carryback periods, alternative minimum tax credit refunds, modifications to the net interest deduction limitations and technical corrections to tax depreciation methods for qualified improvement property. We are analyzing the different aspects of the CARES Act to determine the extent to which any specific provisions may impact us.

Additionally, the OECD, the European Commission (EC) and individual taxing jurisdictions have recently focused on issues related to the taxation of multinational corporations. The OECD released its comprehensive plan to create an agreed set of rules to address concerns regarding base erosion and profit shifting (BEPS). This initiative resulted in proposed and enacted changes to tax laws in various countries including France, Germany, Luxembourg, Netherlands and the U.K. In addition, the OECD and EC and individual countries are examining how taxing rights should be allocated among countries considering the digital economy. Future changes to tax laws or interpretation of tax laws resulting from enacted laws could increase our effective tax rate, which would affect our profitability.

We receive substantial tax credits in Canada, from both the Canadian federal and Quebec governments, France and the U.K. Any reduction in the availability or amount of these tax credits or increase to tax rates due to tax law changes or outcomes of tax controversies could have a material adverse effect on our profits, cash flows and effective tax rate.

Contract research services create a risk of liability.

As a CRO, we face a range of potential liabilities, which may include:

- risks associated with errors or omissions in reporting of study detail in non-clinical studies that may lead to inaccurate reports, which may undermine the usefulness of a study or data from the study, or which may potentially advance studies absent the necessary support or inhibit studies from proceeding to the next level of testing;
- risks associated with our possible failure to properly care for our clients' property, such as research models and samples, study compounds, records, work in progress, other archived materials or goods and materials in transit, while in our possession;
- risks that models in our breeding facilities or in facilities that we manage may be infected with diseases that may be harmful and even lethal to them or humans, despite preventive measures for the quarantine and handling of imported animals;
- risks that we may have errors and omissions and/or product liabilities related to our products designed to conduct lot release testing of medical devices, injectable drugs, food, beverages and home and beauty products (primarily through our Microbial Solutions business), or in the testing of biologics and other services performed by our Biologics business, which could result in us or our clients failing to identify unsafe or contaminated materials; and
- risk of transmitting dangerous infectious diseases, as a result of the failure of our screening and testing processes, or new pathogens that may be undetected by such processes.

While we attempt to mitigate these risks through a variety of methods, it is impossible to completely eradicate such risks. In our RMS business, we mitigate these risks to the best of our abilities through our regimen of animal testing, quarantine procedures and veterinary staff vigilance, through which we seek to control the exposure of animal related disease or infections. In our DSA and Manufacturing businesses, we attempt to reduce these risks by contractual risk transfer provisions entitling us to be indemnified by our clients and subject to a limitation of liability, by insurance maintained by our clients and/or by us and by various regulatory requirements we must follow in connection with our business.

Contractual risk transfer indemnifications generally do not protect us against liability arising from certain of our own actions, such as negligence or misconduct. We could be materially and adversely affected if we are required to pay damages or bear the costs of defending any claim that is outside any contractual indemnification provision, or if a party does not fulfill its indemnification obligations or the damage is beyond the scope or level of insurance coverage. We also often contractually indemnify our clients (subject to a limitation of liability), similar to the way they indemnify us, and we may be materially adversely affected if we have to fulfill our indemnity obligations. Furthermore, either we or a party required to indemnify us may not be able to maintain such insurance coverage (either at all or on terms acceptable to us).

Upgrading and integrating our business systems could result in implementation issues and business disruptions.

In recent years, we have been updating and consolidating systems and automating processes in many parts of our business with a variety of systems, including in connection with the integration of acquired businesses. The expansion and ongoing implementation of the systems may occur at a future date based on value to the business. In general, the process of planning and preparing for these types of integrated, wide-scale implementations is extremely complex and we are required to address a number of challenges, including information security assessment and remediation, data conversion, network and system cutover and user training. Problems in any of these areas could cause operational problems during implementation including delayed shipments, missed sales, billing errors and accounting errors.

The failure to successfully obtain, maintain and enforce intellectual property rights and defend against challenges to our intellectual property rights could adversely affect us.

Many of our services, products and processes rely on intellectual property. In some cases, that intellectual property is owned by another party and licensed to us, sometimes exclusively. To protect our intellectual property rights, we primarily rely upon trade secret law, confidentiality agreements and policies, invention assignments and other contractual arrangements, along with patent, copyright and trademark laws. Existing laws of certain countries outside of the United States in which we operate offer only limited protection, and these are subject to change at any time. In addition, the agreements upon which we rely to protect our intellectual property might be breached, or might not be fully enforceable. Our intellectual property rights might not prevent our competitors from independently developing intellectual property that is similar to or duplicative of ours. Also, enforcing our intellectual property rights might also require substantial time, money and oversight, and we might not be successful in enforcing our rights. If we are unable to obtain or maintain the proprietary rights to our intellectual property, if we are unable to prevent attempted infringement against our intellectual property, or if we are unable to defend against claims that we are infringing on another party's intellectual property, we could be adversely affected. These adverse effects could include us having to abandon, alter or delay the deployment of products, services or processes that rely on such intellectual property;

having to procure and pay for licenses from the holders of intellectual property rights that we seek to use; and having to pay damages, fines, court costs and attorney's fees in connection with intellectual property litigation.

Further, the drug discovery and development industry has a history of patent and other intellectual property litigation and these lawsuits will likely continue. Legal proceedings relating to intellectual property are expensive, take significant time, and divert management's attention from other business concerns, whether we win or lose. If we do not prevail in an infringement lawsuit brought against us, we may have to pay substantial damages, including treble damages, and we could be required to stop the infringing activity or obtain a license to use technology on unfavorable terms.

We may not be able to successfully develop and market new services and products.

We may seek to develop and market new services and products that complement or expand our existing business or service offerings. We believe our ability to in-license new technologies from third parties will be critical to our ability to offer new products and services to our clients. Our ability to gain access to technologies that we need for new products and services depends, in part, on our ability to convince inventors and their agents or assignees that we can successfully commercialize their inventions. We cannot guarantee that we will be able to identify new technologies of interest to our clients. Even if we are able to identify new technologies of interest, we may not be able to negotiate license agreements on acceptable terms, or at all. If we are unable to develop new services and products and/or create demand for those newly developed services and products, our future business, results of operations, financial condition and cash flows could be adversely affected.

The decision by British voters to exit the European Union may adversely affect our business.

The first stage of the U.K.'s withdrawal from the European Union ("Brexit") took place on January 31, 2020, when the U.K. left the European Union and entered a transition phase. During the transition phase, the U.K. needs to negotiate the terms of its future trading and other relationships with the European Union. The scope and timing of these negotiations have created significant uncertainty and continue to do so. The U.K. Prime Minister has said that a trade agreement needs to be reached by December 31, 2020. There is currently no mechanism to automatically extend the transition period, but there is a possibility that the transition period may be extended by agreement between the U.K. and the European Union.

Given the continuing uncertainty concerning the terms of the U.K.'s future relationship with the European Union, including the possibility that there may still be no negotiated agreement despite the results of the December 2019 general election, we have formed a committee (comprised of senior managers across our business functions) to address key risks among four main themes: (1) trade and customs, (2) employees and immigration, (3) strategy and business planning and (4) legislative changes. That committee will continue until the situation is clarified.

In the absence of a trade deal in the short to medium term, the U.K.'s trade with the European Union and the rest of the world would be subject to tariffs and duties set by the World Trade Organization. Additionally, the movement of goods between the U.K. and the remaining member states of the European Union will be subject to additional inspections and documentation checks, leading to possible delays at ports of entry and departure. These changes to the trading relationship between the U.K and European Union would likely result in increased cost of goods imported into and exported from the U.K. and may decrease the profitability of our U.K. and other operations. Additional currency volatility could drive a weaker British pound, which increases the cost of goods imported into our U.K. operations and may decrease the profitability of our U.K. operations. A weaker British pound versus the U.S. dollar also causes local currency results of our U.K. operations to be translated into fewer U.S. dollars during a reporting period. Although we are undertaking efforts to mitigate those risks within our control, a failure to adequately mitigate such risks or other factors outside our control could adversely affect our business, business opportunities, results of operations, financial condition and cash flows.

We depend on key personnel and may not be able to retain these employees or recruit additional qualified personnel, which would harm our business.

Our success depends to a significant extent on the continued services of our senior management and other members of management. James C. Foster, our Chief Executive Officer and President since 1992 and Chairman since 2000, has held various positions with us for four decades. While we entered into an employment agreement with Mr. Foster in 2018, most members of our senior management do not have employment agreements. If Mr. Foster or other members of senior management do not continue in their present positions, our business may be adversely impacted.

Because of the specialized scientific nature of our business, we are highly dependent upon attracting and retaining qualified scientific, technical and managerial personnel. While we have a strong record of employee retention, and we strive to reduce the impact of the potential loss of existing employees by having an established organizational talent review process that identifies successors and potential talent needs, there is still significant competition for qualified personnel in the veterinary, pharmaceutical and biotechnology fields. Therefore, we may not be able to attract and retain the qualified personnel necessary for the development of our business. The loss of the services of existing personnel, as well as the failure to recruit additional key scientific, technical and managerial personnel in a timely manner, could harm our business.

Our quarterly operating results may vary, which could negatively affect the market price of our common stock.

Our results of operations in any quarter may vary from quarter to quarter and are influenced by the risks discussed above, as well as:

- changes in the general global economy;
- changes in the mix of our products and services;
- cyclical buying patterns of our clients;
- the financial performance of our venture capital investments; and
- the occasional extra week ("53rd week") that we recognize in a fiscal year (and fourth fiscal quarter thereof) due to our fiscal year ending on the last Saturday in December.

We believe that operating results for any particular quarter are not necessarily a meaningful indication of future results. Nonetheless, fluctuations in our quarterly operating results could negatively affect the market price of our common stock.

Since we do not expect to pay any cash dividends for the foreseeable future, our shareholders will benefit from an investment in our common stock only if it appreciates in value.

We have not declared or paid any cash dividends on our common stock, and do not anticipate that we will pay any dividends to holders of our common stock for the foreseeable future. Any payment of cash dividends will be at the discretion of our Board of Directors and will depend on our financial condition, capital requirements, legal requirements, earnings and other factors. Consequently, our shareholders should not rely on dividends to receive a return on their investment.

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

The following table provides information relating to the purchases of shares of our common stock during the three months ended March 28, 2020.

	Total Number of Shares Purchased	Average Price Paid per Share	Total Number of Shares Purchased as Part of Publicly Announced Plans or Programs	Approximate Dollar Value of Shares That May Yet Be Purchased Under the Plans or Programs
				(in thousands)
December 29, 2019 to January 25, 2020	—	$ —	—	$ 129,105
January 26, 2020 to February 22, 2020	102,072	161.37	—	129,105
February 23, 2020 to March 28, 2020	42,315	170.23	—	129,105
Total	144,387		—	

Our Board of Directors have authorized up to an aggregate amount of $1.3 billion for our stock repurchase program. During the three months ended March 28, 2020, we did not repurchase any shares of common stock under our stock repurchase program or in open market trading. As of March 28, 2020, we had $129.1 million remaining on the authorized stock repurchase program.

Additionally, our stock-based compensation plans permit the netting of common stock upon vesting of restricted stock, restricted stock units, and performance share units in order to satisfy individual statutory tax withholding requirements.

Item 6. Exhibits

(a) Exhibits	Description of Exhibits
10.1+*	Charles River Laboratories International, Inc. Amended and Restated 2018 Incentive Plan, dated May 6, 2020
31.1+	Rule 13a-14(a)/15d-14(a) Certification of Chief Executive Officer
31.2+	Rule 13a-14(a)/15d-14(a) Certification of Chief Financial Officer
32.1+	Certification of the Principal Executive Officer and the Principal Financial Officer required by Rule 13a-14(a) of 15d-14(a) of the Exchange Act
101.INS	eXtensible Business Reporting Language (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	XBRL Taxonomy Extension Schema Document
101.CAL	XBRL Taxonomy Calculation Linkbase Document
101.DEF	XBRL Taxonomy Definition Linkbase Document
101.LAB	XBRL Taxonomy Label Linkbase Document
101.PRE	XBRL Taxonomy Presentation Linkbase Document

+ Furnished herein.

* Management contract or compensatory plan, contract or arrangement.

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.

CHARLES RIVER LABORATORIES INTERNATIONAL, INC.

May 7, 2020 /s/ JAMES C. FOSTER

James C. Foster
Chairman, President and Chief Executive Officer

May 7, 2020 /s/ DAVID R. SMITH

David R. Smith
Corporate Executive Vice President and Chief Financial Officer

Exhibit 10.1

CHARLES RIVER LABORATORIES INTERNATIONAL, INC.
AMENDED AND RESTATED 2018 INCENTIVE PLAN
Originally adopted by the Board of Directors
On March 20, 2018
Approved at Annual Meeting of Shareholders
On May 8, 2018
Amended by the Board of Directors
On March 14, 2020
Amendment and Restatement Approved at Annual Meeting of Shareholders
On May 6, 2020

1. ADMINISTRATION

Subject to the express provisions of the Plan, the Administrator has the authority to interpret the Plan; determine eligibility for and grant Awards; determine, modify or waive the terms and conditions of any Award; prescribe forms, rules and procedures (which it may modify or waive); and otherwise do all things necessary to implement the Plan. Once an Award has been communicated in writing to a Participant, the Administrator may not, without the Participant's consent, alter the terms of the Award so as to materially affect adversely the Participant's rights under the Award, unless the Administrator has expressly reserved the right to do so or pursuant to Section 9.

2. LIMITS ON AWARDS UNDER THE PLAN

a. **NUMBER OF SHARES.** Subject to adjustments as provided in Section 5.b, the total number of shares of Stock subject to Awards granted under the Plan, in the aggregate, may not exceed 8,948,598 (the "Fungible Pool Limit"), which includes (A) a reserve of 439,798 shares of Stock remaining available for issuance under the 2016 Plan as in effect prior to the Original Effective Date and (B) an increase of 1,750,000 shares of Stock, as approved by the Board, subject to approval by the stockholders of the Company. Each share of Stock issued or to be issued in connection with any Full-Value Award shall be counted against the Fungible Pool Limit as 2.3 Fungible Pool Units. Stock Options, SARs and other Awards that do not deliver the full value at grant thereof of the underlying shares of Stock, that were granted prior to the Effective Date and that expire no more than seven (7) years from the date of grant, and such Stock Options, SARs and Other Awards that were granted on or after the Effective Date and that expire no more than ten (10) years from the date of grant, shall be counted against the Fungible Pool Limit as one (1.0) Fungible Pool Unit. (For these purposes, the number of shares of Stock taken into account with respect to a SAR shall be the number of shares of Stock underlying the SAR at grant (i.e., not the final number of shares of Stock delivered upon exercise of the SAR)). For purposes of the preceding sentence, shares that have been forfeited or cancelled in accordance with the terms of the applicable Award shall not be considered to have been delivered under the Plan, but shares held back in satisfaction of the exercise price or tax withholding requirements from shares that would otherwise have been delivered pursuant to an Award will be considered to have been delivered under the Plan. In addition, shares of Stock that have been repurchased by the Company with proceeds obtained in connection with the exercise of outstanding Awards shall not be added into the pool of available shares. Any shares of Stock that again become available for grant pursuant to this Section 2.a shall be added back to the pool of available shares. For purposes of clarity, in calculating the number of shares of Stock remaining under the Fungible Pool Limit, the Administrator will not increase the

number of available Fungible Pool Units for shares of Stock delivered under an Award (i.e., previously acquired Shares tendered by the Participant in payment of the exercise price or of withholding taxes). The Administrator shall determine the appropriate methodology for calculating the number of shares of Stock issued pursuant to the Plan.

b. **TYPE OF SHARES.** Stock delivered by the Company under the Plan may be authorized but unissued Stock or previously issued Stock acquired by the Company and held in treasury. No fractional shares of Stock will be delivered under the Plan.

c. **PARTICIPANT SHARE LIMIT.** The maximum number of shares of Stock for which any Awards may be granted to any Participant annually from and after adoption of the Plan and prior to March 20, 2028 shall be 2,000,000, subject to adjustments as provided in Section 5.b. No Awards may be granted under the Plan after March 20, 2028, but previously granted Awards may extend beyond that date.

d. **OTHER AWARD LIMITS.** No more than $3,000,000 may be paid to any individual with respect to any Cash Performance Award (other than an Award expressed in terms of shares of Stock or units representing Stock, which shall instead be subject to the limit set forth in Section 2.c above). In applying the dollar limitation of the preceding sentence: (A) multiple Cash Performance Awards to the same individual that are determined by reference to performance periods of one year with or within the same fiscal year of the Company shall be subject in the aggregate to one limit of such amount, and (B) multiple Cash Performance Awards to the same individual that are determined by reference to one or more multi-year performance periods ending in the same fiscal year of the Company shall be subject in the aggregate to a separate limit of such amount.

e. **NON-EMPLOYEE DIRECTOR LIMIT.** The aggregate grant date fair value (determined as of the date of grant) of any Award granted under the Plan to an individual upon becoming a non-employee member of the Board of Directors ("Initial Non-Employee Director Grant") shall not exceed $600,000. Subject to adjustment as provided in Section 5.b, no Participant who is a non-employee member of the Board of Directors may receive under the Plan (or otherwise) in any calendar year Stock Options, SARs, Restricted Stock, Unrestricted Stock, Deferred Stock and Performance Awards denominated in shares of Stock with a grant date fair value (determined as of the date of grant) that, when combined with the aggregate amount of any Cash Performance Awards and any other compensation granted to such Participant in such calendar year, exceeds an aggregate of $800,000 (excluding an Initial Non-Employee Director Grant).

f. **ISO SHARE LIMIT.** Subject to adjustments as provided in Section 5.b, the maximum number of shares of Stock available for issuance with respect to ISOs under the Plan shall be 3,500,000.

3. ELIGIBILITY AND PARTICIPATION

The Administrator will select Participants from among those key Employees, directors and other individuals or entities providing services to the Company or its Affiliates who, in the opinion of the Administrator, are in a position to make a significant contribution to the success of the Company and its Affiliates. Eligibility for ISOs is further limited to those individuals whose employment status would qualify them for the tax treatment described in Sections 421 and 422 of the Code.

4. RULES APPLICABLE TO AWARDS

a. **ALL AWARDS**

(1) TERMS OF AWARDS. All Awards of Stock Options and SARs granted hereunder shall have a term of not to exceed ten (10) years from the date of grant; PROVIDED that such Awards granted hereunder prior to the Effective Date shall have a term not to exceed seven (7) years from the date of grant. The Administrator shall determine all other terms of all Awards subject to the limitations provided herein.

(2) PERFORMANCE CRITERIA. Where rights under an Award depend in whole or in part on satisfaction of Performance Criteria, actions by the Company that have an effect, however material, on such Performance Criteria or on the likelihood that they will be satisfied will not be deemed an amendment or alteration of the Award.

(3) ALTERNATIVE SETTLEMENT. The Company may at any time extinguish rights under an Award in exchange for payment in cash, Stock (subject to the limitations of Section 2) or other property on such terms as the Administrator determines, PROVIDED the holder of the Award consents to such exchange, PROVIDED FURTHER, no such exchange will be made where the cash, Stock or property to be received has a fair market value greater than the Award being extinguished, or where any such exchange would violate Section 4.a(9) of this Plan.

(4) TRANSFERABILITY OF AWARDS. Awards may not be transferred other than by will or by the laws of descent and distribution and during a Participant's lifetime an Award requiring exercise may be exercised only by the Participant (or in the event of the Participant's incapacity, the person or persons legally appointed to act on the Participant's behalf).

(5) VESTING, ETC. Without limiting the generality of Section 1, the Administrator may determine the time or times at which an Award will vest (i.e., become free of forfeiture restrictions) or become exercisable and the terms on which an Award requiring exercise will remain exercisable. Notwithstanding anything contained herein to the contrary, (1) Awards that are not Performance Awards to Participants shall vest (i.e., become free of forfeiture restrictions) over a period of time at least three years or more from the date of grant and no Award shall vest in part or in whole before 12 months from the date of grant, and (2) Full-Value Awards that are Performance Awards shall be subject to the attainment of Performance Criteria which require at least 12 months to achieve and no Award shall vest in part or in whole before 12 months from the date of grant; PROVIDED, however, that Awards that aggregate not more than 5% of the number of shares reserved for issuance under the Plan may be awarded without the vesting requirements set forth in clauses (1) and (2).

Unless otherwise provided by Section 4.d with respect to Performance Awards or if the Administrator expressly provides otherwise:

(A) immediately upon the cessation of a Participant's employment or other service relationship with the Company and its Affiliates, all Awards (other than Stock Options and SARs) held by the Participant (or by a permitted transferee under Section 4.a(4)) immediately prior to such cessation of employment or other service relationship will be forfeited if not then vested and, where exercisability is relevant, will cease to be exercisable;

(B) except as provided in clauses (C) and (D) below, all Stock Options and SARs held by a Participant (or by a permitted transferee under Section 4.a(4)) immediately prior to the cessation of the Participant's employment or other service relationship for reasons other than Disability or death, to the extent then exercisable, will remain exercisable for the lesser of (i) a period of three months or (ii) the period ending on the latest date on which such Stock Option or SAR could have been exercised without regard to this Section 4.a(5), and shall thereupon terminate;

(C) all Stock Options and SARs held by a Participant (or by a permitted transferee under Section 4.a(4)) immediately prior to the Participant's Disability or death, to the extent then exercisable, will remain exercisable for the lesser of (i) the one-year period ending with the first anniversary of the Participant's Disability or death or (ii) the period ending on the latest date on which such Stock Option or SAR could have been exercised without regard to this Section 4.a(5), and shall thereupon terminate; and

(D) all Stock Options and SARs held by a Participant (or by a permitted transferee of the Participant under Section 4.a(4)) whose cessation of employment or other service relationship is determined by the Administrator in its sole discretion to result from reasons which cast such discredit on the Participant as to justify immediate termination of the Award shall immediately terminate upon such cessation.

Unless the Administrator expressly provides otherwise, a Participant's "employment or other service relationship with the Company and its Affiliates" will be deemed to have ceased, in the case of an employee Participant, upon termination of the Participant's employment with the Company and its Affiliates (whether or not the Participant continues in the service of the Company or its Affiliates in some capacity other than that of an employee of the Company or its Affiliates), and in the case of any other Participant, when the service relationship in respect of which the Award was granted terminates (whether or not the Participant continues in the service of the Company or its Affiliates in some other capacity).

(6) TAXES. The Administrator will make such provision for the withholding of taxes as it deems necessary. The Administrator may, but need not, hold back shares of Stock from an Award or permit a Participant to tender previously owned shares of Stock in satisfaction of tax withholding requirements. For the avoidance of doubt, Stock may be tendered or held back by the Company in excess of the minimum amount required to be withheld for Federal, state, and local taxes.

As provided in Section 2.a of this Plan, in the event shares of Stock are held back from an Award in satisfaction of tax withholding requirements, such shares will nonetheless be considered to have been delivered under the Plan.

(7) DIVIDEND EQUIVALENTS, ETC. The Administrator may provide for the payment of amounts in lieu of cash dividends or other cash distributions with respect to Stock subject to any Full Value Award if and in such manner as it deems appropriate. Notwithstanding anything contained herein to the contrary, and without limiting the generality of Section 4.d(10), in no event shall an Award provide for any dividend or dividend equivalents to be payable to the Participant in respect of such Award prior to the time at which such Award (or the applicable portion thereof) vests (and, in the case of a Performance Award, the applicable performance condition is achieved).

(8) RIGHTS LIMITED. Nothing in the Plan shall be construed as giving any person the right to continued employment or service with the Company or its Affiliates, or any rights as a shareholder except as to shares of Stock actually issued under the Plan. The loss of existing or potential profit in Awards will not constitute an element of damages in the event of termination of employment or service for any reason, even if the termination is in violation of an obligation of the Company or Affiliate to the Participant. No Participant or other person shall have any claim to be granted any Award under the Plan, and there is no obligation for uniformity of treatment of Participants under the Plan. The terms and conditions of Awards need not be the same with respect to each recipient. Any Award granted under the Plan shall be a one-time Award that does not constitute a promise of future grants. Any Award granted under the Plan shall not be a part of a Participant's base salary or wages and will not be taken into account in determining any other employment-related rights such

Participant may have, such as rights to pension or severance pay. The Company, in its sole discretion, maintains the right to make available future grants under the Plan. Unless stated herein, no Participant or other person shall acquire any rights, remedies, benefits or obligations. Nothing contained in the Plan shall prevent the Company from adopting or continuing in effect other or additional compensation arrangements, and such arrangements may be either generally applicable or applicable only in specific cases. Neither the Plan nor any Award shall create or be construed to create a trust or separate fund of any kind or a fiduciary relationship between the Company and a Participant or any other person. To the extent that any person acquires a right to receive payments from the Company pursuant to an Award, such right shall be no greater than the right of any unsecured general creditor of the Company.

(9) OPTION AND SAR REPRICING. Options and SARs may not be repriced, or replaced with any other award (including full-value awards), or repurchased for cash without the approval of the shareholders of the Company.

(10) FORFEITURE/CLAWBACK. The Committee may determine that any Award under this Plan shall be subject to provisions for the forfeiture and/or reimbursement of all amounts received in connection with an Award in the event of breach of noncompetition, nonsolicitation or confidentiality agreements. All Awards granted under this Plan are subject to recoupment, to the extent applicable, under the Company's Corporate Governance Guidelines, as may be revised from time to time, and/or any other recoupment, clawback or similar policy that may be approved by the Board or any committee thereof. Notwithstanding any other provision of this Plan, a Participant shall be required to reimburse the Company amounts received in connection with an Award to the extent required under Section 304 of the Sarbanes-Oxley Act of 2002 and Section 954 of the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010.

(11) STOCK OWNERSHIP GUIDELINES/HOLDING PERIODS. The Committee may require that any Stock acquired by a Participant in connection with an Award granted under this Plan shall be subject to stock ownership guidelines, a minimum holding period or similar requirement under which a Participant shall not be permitted to transfer, sell, pledge, hedge, hypothecate or otherwise dispose of any such Stock.

b. **AWARDS REQUIRING EXERCISE**

(1) TIME AND MANNER OF EXERCISE. Unless the Administrator expressly provides otherwise, (a) an Award requiring exercise by the holder will not be deemed to have been exercised until the Administrator receives a written notice of exercise (in a form acceptable to the Administrator) signed by the appropriate person and accompanied by any payment required under the Award or adequate provision therefore, as set forth in Section 4.b(3); and (b) if the Award is exercised by any person other than the Participant, the Administrator may require satisfactory evidence that the person exercising the Award has the right to do so.

(2) EXERCISE PRICE. The Administrator shall determine the exercise price of each Stock Option and SAR; PROVIDED, that each Stock Option and SAR must have an exercise price that is not less than the fair market value of the Stock subject to the Stock Option and SAR, determined as of the date of grant. An ISO granted to an Employee described in Section 422(b)(6) of the Code must have an exercise price that is not less than 110% of such fair market value.

(3) PAYMENT OF EXERCISE PRICE, IF ANY. Where the exercise of an Award is to be accompanied by payment, the Administrator may determine the required or permitted forms of payment, subject to the following: (a) all payments will be by cash or check acceptable to the

Administrator, or, if so permitted by the Administrator (with the consent of the optionee of an ISO if permitted after the grant), (i) through the delivery of shares of Stock which have been outstanding for at least six months (unless the Administrator approves a shorter period) and which have a fair market value equal to the exercise price, (ii) by delivery of a promissory note of the person exercising the Award to the Company, payable on such terms as are specified by the Administrator, (iii) if the Stock is publicly traded, by delivery of an unconditional and irrevocable undertaking by a broker to deliver promptly to the Company sufficient funds to pay the exercise price, or (iv) by any combination of the foregoing permissible forms of payment; and (b) where shares of Stock issued under an Award are part of an original issue of shares, the Award shall require an exercise price equal to at least the par value of such shares.

(4) GRANT OF STOCK OPTIONS. Each Stock Option awarded under the Plan shall be deemed to have been awarded as a non-ISO (and to have been so designated by its terms) unless the Administrator expressly provides for ISO treatment that the Stock Option is to be treated as an ISO.

c. **AWARDS NOT REQUIRING EXERCISE**

Awards of Restricted Stock and Unrestricted Stock may be made in return for either (1) services determined by the Administrator to have a value not less than the par value of the Awarded shares of Stock, or (2) cash or other property having a value not less than the par value of the Awarded shares of Stock plus such additional amounts (if any) as the Administrator may determine payable in such combination and type of cash, other property (of any kind) or services as the Administrator may determine.

d. **PERFORMANCE AWARDS**

Performance Awards may be granted to Participants as follows:

(1) Prior to the grant of any Performance Award, the Administrator shall establish for each such award (i) performance levels at which 100% of the award shall be earned and a range (which need not be the same for all awards) within which greater and lesser percentages shall be earned and (ii) a performance period (which shall not be less than 12 months) which shall be determined at time of grant.

(2) With respect to the performance levels to be established pursuant to Section 4.d(1), the specific measures for each grant shall be established by the Administrator at the time of such grant. In creating these measures, the Administrator may establish the specific goals based upon or relating to any Performance Criteria (as defined below).

(3) Except as otherwise provided in Section 4.d(5), the percentage of each Performance Award to be distributed to an employee shall be determined by the Administrator on the basis of the performance levels established for such award and on the basis of individual performance in satisfaction of the Performance Award during such period. Any Performance Award, as determined and adjusted pursuant to this Section and Sections 4.d(5-8) is herein referred to as a “Final Award”. No distribution of any Final Award (or portion thereof) shall be made if the minimum performance level applicable to the related Performance Award is not achieved during the applicable performance period or, unless otherwise determined by the Administrator, if the employment of the employee to whom the related Performance Award was granted shall terminate for any reason whatsoever (including Disability and death) within 12 months after the date the Performance Award was granted.

(4) All Final Awards which have vested in accordance with the provisions of Sections 4.d.(5-10) shall be granted as soon as practicable following the end of the related vesting period. Final awards shall be granted in the form of Restricted Stock, Unrestricted Stock, Deferred Stock, Cash Performance Awards, or cash or any combination thereof, as the Administrator shall determine.

(5) Payment of any Final Award (or portion thereof) to an individual employee shall be subject to the continued rendering of services as an employee (unless this condition is waived by the Administrator). If the Administrator shall determine that such employee has failed to satisfy such conditions precedent, all Performance Awards granted to such employee which have not become Final Awards, and all Final Awards which have not been paid pursuant to Section 4.d(10) shall be immediately canceled. Upon termination of an employee's employment other than by Disability or death (whether such termination is before or after a Performance Award shall have become a Final Award), the Administrator may, but shall not in any case be required to, waive the condition precedent of continuing to render services.

(6) If, upon termination of an employee's employment prior to the end of any performance period for a reason other than Disability or death, the Administrator shall determine to waive the condition precedent of continuing to render services as provided in Section 4.d(5), the Performance Award granted to such employee with respect to such performance period shall be reduced pro rata based on the number of months remaining in the performance period after the month of such termination and such awards will be paid at the time they would have been paid absent an employment termination, unless otherwise determined by the Administrator or provided for in an award agreement. The Final Award for such employee shall be determined by the Administrator (i) on the basis of the performance levels established for such award (including the minimum performance level) and the performance level achieved through the end of the performance period and (ii) in the discretion of the Administrator, on the basis of individual performance during the period prior to such termination. A qualifying leave of absence, determined in accordance with procedures established by the Administrator, shall not be deemed to be a termination of employment but, except as otherwise determined by the Administrator, the employee's Performance Award will be reduced pro rata based on the number of months during which such person was on such leave of absence during the performance period. A Performance Award shall not vest during a leave of absence granted an employee for local, state, provincial, or federal government service.

(7) Upon termination of an employee's employment by reason of Disability or death prior to the end of any performance period, the Performance Award granted to such employee with respect to such performance period, except as otherwise provided in Section 4.d(3), shall be reduced pro rata based on the number of months remaining in the performance period after the month of such employee's Disability or death. The percentage of the reduced Performance Award to be distributed to such employee shall be determined by the Administrator (i) on the basis of the performance levels established for such award (including the minimum performance level) and the performance level achieved through the end of the fiscal year during which such employee became Disabled or died and (ii) in the discretion of the Administrator, on the basis of individual performance during the applicable period. Such Final Awards will immediately vest and be paid as promptly as practicable.

(8) If an employee is promoted during the performance period with respect to any Performance Award, such Performance Award may, in the discretion of the Administrator, be increased to reflect such employee's new responsibilities.

(9) Performance Awards that have become Final Awards may be subject to a vesting schedule established by the Administrator. Except as otherwise provided in this Plan, no Final Award (or

portion thereof) subject to a vesting schedule shall be paid prior to vesting and the unpaid portion of any Final Award shall be subject to the provisions of Section 4.d(5). The Administrator shall have the authority to modify a vesting schedule as may be necessary or appropriate in order to implement the purposes of this Plan.

(10) No holder of a Performance Award shall have any rights to dividends or interest or other rights of a stockholder with respect to a Performance Award prior to such Performance Award's becoming a Final Award.

(11) To the extent that any employee, former employee, or any other person acquires a right to receive payments or distributions under this Plan with respect to a Performance Award, such right shall be no greater than the right of a general unsecured creditor of the Company. All payments and distributions to be made hereunder shall be paid from the general assets of the Company. Nothing contained in this Plan, and no action taken pursuant to its provisions, shall create or be construed to create a trust of any kind, or a fiduciary relationship between the Company and any employee, former employee, or any other person.

5. EFFECT OF CERTAIN TRANSACTIONS

a. **MERGERS, ETC.** Other than in connection with Awards that are denominated and subject to settlement in cash, Awards shall not vest in connection with a Covered Transaction unless such Covered Transaction is accompanied by a "double trigger event". For this purpose, a "double trigger event" occurs in connection with a Covered Transaction if (i) the Award is not appropriately assumed nor an equivalent award substituted by the surviving, continuing, successor or purchasing company or other business entity or parent thereof, as the case may be, (ii) cash or cash equivalents are the sole or primary form of consideration to be received by the shareholder of the Company and (iii) at the time of, or within 12 months following the Covered Transaction, the Participant incurs a termination of employment without Cause or for Good Reason.

Upon a Covered Transaction "double trigger event": (i) in the case of a Stock Option or SAR, the Stock Option or SAR shall become fully vested and exercisable immediately upon the occurrence of the double trigger event; (ii) in the case of Restricted Stock, Deferred Stock or restricted stock units (in each case other than an award of Restricted Stock, award of Deferred Stock or award of restricted stock units that is a Performance Award), the restriction period shall lapse and the Restricted Stock, Deferred Stock or restricted stock unit (as applicable) shall fully vest immediately upon the occurrence of the double trigger event; and (iii) in the case of a Performance Award, payment under the Award shall be subject to the terms set forth in the applicable award agreement.

b. **CHANGES IN AND DISTRIBUTIONS WITH RESPECT TO THE STOCK**

(1) BASIC ADJUSTMENT PROVISIONS. In the event of a stock dividend, stock split or combination of shares, recapitalization or other change in the Company's capital structure, the Administrator will make appropriate adjustments to the maximum number of shares that may be delivered under the Plan under Section 2.a and to the maximum share limits described in Section 2.c, and will also make appropriate adjustments to the number and kind of shares of stock or securities subject to Awards then outstanding or subsequently granted, any exercise prices relating to Awards and any other provision of Awards affected by such change.

(2) CERTAIN OTHER ADJUSTMENTS. The Administrator may also make adjustments of the type described in paragraph (1) above to take into account distributions to common stockholders other

than those provided for in Section 5.a and 5.b (1), or any other event, if the Administrator determines that adjustments are appropriate to avoid distortion in the operation of the Plan and to preserve the value of Awards made hereunder; PROVIDED, that no such adjustment shall be made to the maximum share limits described in Section 2.c nor shall any change be made to ISOs except to the extent consistent with their continued qualification under Section 422 of the Code.

(3) CONTINUING APPLICATION OF PLAN TERMS. References in the Plan to shares of Stock shall be construed to include any stock or securities resulting from an adjustment pursuant to Section 5.b(1) or 5.b(2) above.

6. LEGAL CONDITIONS ON DELIVERY OF STOCK

The Company will not be obligated to deliver any shares of Stock pursuant to the Plan or to remove any restriction from shares of Stock previously delivered under the Plan until the Company's counsel has approved all legal matters in connection with the issuance and delivery of such shares; if the outstanding Stock is at the time of delivery listed on any stock exchange or national market system, the shares to be delivered have been listed or authorized to be listed on such exchange or system upon official notice of issuance; and all conditions of the Award have been satisfied or waived. If the sale of Stock has not been registered under the Securities Act of 1933, as amended, the Company may require, as a condition to exercise of the Award, such representations or agreements as counsel for the Company may consider appropriate to avoid violation of such Act. The Company may require that certificates evidencing Stock issued under the Plan bear an appropriate legend reflecting any restriction on transfer applicable to such Stock.

7. AMENDMENT AND TERMINATION

The Administrator may at any time or times amend the Plan or any outstanding Award for any purpose which may at the time be permitted by law, or may at any time terminate the Plan as to any further grants of Awards; PROVIDED, that (except to the extent expressly required or permitted by the Plan) no such amendment will, without the approval of the stockholders of the Company, effectuate a change for which stockholder approval is required under the rules of the New York Stock Exchange (which includes any "material revision" as defined under the rules of the New York Stock Exchange) or in order for the Plan to continue to qualify under Section 422 of the Code and to have an Award comply with, or avoid adverse consequences under, Section 409A of the Code.

8. NON-LIMITATION OF THE COMPANY'S RIGHTS

The existence of the Plan or the grant of any Award shall not in any way affect the Company's right to award a person bonuses or other compensation in addition to Awards under the Plan.

9. COMPLIANCE WITH APPLICABLE LAW

If any provision of the Plan or any applicable award agreement is or becomes or is deemed to be invalid, illegal or unenforceable in any jurisdiction, or as to any person or Award, or would disqualify the Plan or any Award under any law deemed applicable by the Committee, such provision shall be construed or deemed amended to conform to applicable laws, or if it cannot be so construed or deemed amended without, in the determination of the Committee, materially altering the intent of the Plan or the applicable award agreement, such provision shall be stricken as to such jurisdiction, person or Award, and the remainder of the Plan and any such applicable award agreement shall remain in full force and effect.

10. DATA PRIVACY

The Company, any Affiliate and Committee may collect, process, transmit and store, in any form whatsoever, any data of a professional or personal nature described in the Plan, the applicable award agreement and any other grant or plan administration materials by and among, as applicable, the Company or any Affiliate that is necessary, in the discretion of the Company or any Affiliate, for the purposes of implementing, administering and managing the Participant's participation in the Plan. The Company and any Affiliate may share such information with any third party in any country, including any trustee, registrar, administrative agent, broker, stock plan service provider or any other person assisting the Company with the implementation, administration, and management of the Awards and the Plan. The Company, any Affiliate, the Committee and any possible recipients described herein may receive, possess, use, retain and transfer the data in electronic or other form, for the sole purpose described herein. The Participant may refuse to provide consent or authorization, or may withdraw such consent or authorization, regarding the matters described in this Section 10; PROVIDED, however, that such refusal or withdrawal may affect the Participant's ability to participate in the Plan.

11. GOVERNING LAW

The Plan shall be construed in accordance with the laws of The Commonwealth of Massachusetts without reference to principles of conflicts of laws.

12. DEFINED TERMS.

The following terms, when used in the Plan, shall have the meanings and be subject to the provisions set forth below:

"2007 Plan". The Charles River Laboratories International, Inc. 2007 Incentive Plan as from time to time amended and in effect.

"2016 Plan": The Charles River Laboratories International, Inc. 2016 Incentive Plan as from time to time amended and in effect.

"ADMINISTRATOR": The Board or, if one or more has been appointed, the Committee. With respect to ministerial tasks deemed appropriate by the Board or Committee, the term "Administrator" shall also include such persons (including Employees) to whom the Board or Committee shall have delegated such tasks.

"AFFILIATE": Any corporation or other entity owning, directly or indirectly, 50% or more of the outstanding Stock of the Company, or in which the Company or any such corporation or other entity owns, directly or indirectly, 50% of the outstanding capital stock (determined by aggregate voting rights) or other voting interests.

"AWARD": Any or a combination of the following (which shall include any Final Award with respect to the following):

(i) Stock Options.

(ii) SARs.

(iii) Restricted Stock.

(iv) Unrestricted Stock.

(v) Deferred Stock.

(vi) Cash Performance Awards.

(vii) Other Performance Awards.

“BOARD”: The Board of Directors of the Company.

“CASH PERFORMANCE AWARD”: A Performance Award payable in cash. The right of the Company under Section 4.a(3) (subject to the consent of the holder of the Award as therein provided) to extinguish an Award in exchange for cash or the exercise by the Company of such right shall not make an Award otherwise not payable in cash a Cash Performance Award.

“CAUSE”: Unless otherwise provided for in a Participant’s written agreement with the Company, “Cause”” for termination by the Company of the Participant’s employment shall mean (i) the willful and continued failure by the Participant to perform the Participant’s duties with the Company, (ii) a substantial and not de minimis violation of the Company’s Code of Business Conduct and Ethics (and any successor policy), as the same are in effect from time to time, (iii) the Participant’s conviction of a felony or (iv) engaging in conduct that constitutes a violation of any (x) confidential agreements with the Company or (y) confidentiality policies applicable to the Participant.

“CODE”: The U.S. Internal Revenue Code of 1986 as from time to time amended and in effect, or any successor statute as from time to time in effect.

“COMMITTEE”: One or more committees of the Board (including any subcommittee thereof) appointed or authorized to make Awards and otherwise to administer the Plan.

“COMPANY”: Charles River Laboratories International, Inc.

“COVERED TRANSACTION”: Any of (i) the consummation of a consolidation, merger or other transaction which results in any individual, entity or “group” (within the meaning of section 13(d) of the Securities Exchange Act of 1934) acquiring the beneficial ownership (within the meaning of Rule 13d-3 promulgated under the Exchange Act) directly or indirectly of more than 50% of either the then outstanding shares of common stock of the Company or the combined voting power of the then outstanding voting securities of the Company entitled to vote generally in the election of directors, (ii) at any time during a period of 12 consecutive months, individuals who at the beginning of such period constituted the Board and any new member of the Board whose election or nomination for election was approved by a vote of at least a majority of the directors then still in office who either were directors at the beginning of such period or whose election or nomination for election was so approved, cease for any reason to constitute a majority of members of the Board, (iii) the consummation of a sale or transfer of all or substantially all the Company’s assets, or (iv) a dissolution or liquidation of the Company.

“DEFERRED STOCK”: A promise to deliver Stock, other securities or other property in the future on specified terms to a Participant (including, for the avoidance of doubt, a director of the Company).

“DISABILITY”: With respect to any Participant, “disability” as defined in such Participant’s employment agreement, if any, or if not so defined, except as otherwise provided in such Participant’s award agreement:

(i) a Participant's inability to engage in any substantial gainful activity by reason of any medically determinable physical or mental impairment that can be expected to result in death or can be expected to last for a continuous period of not less than 12 months; or

(ii) a Participant is, by reason of any medically determinable physical or mental impairment that can be expected to result in death or can be expected to last for a continuous period of not less than 12 months, receiving income replacement benefits for a period of not less than three months under the Company's accident and health plan.

"EMPLOYEE": Any person who is employed by the Company or an Affiliate.

"FULL-VALUE AWARD": an Award other than an Option or SAR, and which is settled by the issuance of shares of Stock or the value of the stated number of shares in cash.

"FUNGIBLE POOL UNIT": the measuring unit used for purposes of the Plan, as specified in Section 2, to determine the number of Shares which may be subject to Awards hereunder, which shall consist of Shares in the proportions (ranging from 1.0 to 2.3) as set forth in Section 2.a.

"GOOD REASON": Unless otherwise provided for in a Participant's written agreement with the Company, Good Reason for termination by the Participant of the Participant's employment shall mean the occurrence (without the Participant's express written consent) of any one of the following acts by the Company, or failures by the Company to act, unless in the case of any act or failure to act described in paragraph (i), (iii) or (iv) below, such act or failure to act is corrected prior to the date of termination:

(i) the assignment to the Participant of any duties inconsistent with the Participant's position and responsibilities as in effect immediately prior to the Covered Transaction;

(ii) a reduction by the Company in the Participant's annual base salary as in effect on the date of the Covered Transaction;

(iii) the failure by the Company to continue in effect any compensation plan in which the Participant participates immediately prior to the Covered Transaction which is material to the Participant's total compensation, unless an equitable arrangement (embodied in an ongoing substitute or alternative plan) has been made with respect to such plan, or the failure by the Company to continue the Participant's participation therein (or in a substitute or alternative plan) on a basis not materially less favorable, both in terms of the amount of benefits provided and the level of the Participant's participation relative to other participants, as existed at the time of the Covered Transaction;

(iv) the failure by the Company to continue to provide the Participant with benefits substantially similar to those enjoyed by the Participant under any of the Company's pension, life insurance, medical, health and accident, or disability plans in which the Participant was participating at the time of the Covered Transaction, the taking of any action by the Company which would directly or indirectly materially reduce any of such benefits or deprive the Participant of any material fringe benefit enjoyed by the Participant at the time of the Covered Transaction, or the failure by the Company to provide the Participant with the number of paid vacation days to which the Participant is entitled on the basis of years of service with the Company in accordance with the Company's normal vacation policy in effect at the time of the Covered Transaction; or

(v) the Company's requiring the Participant to relocate to an office or location more than fifty (50) miles distant from the office or location at which the Participant was based immediately prior to the date of termination.

"ISO": A Stock Option intended to be an "incentive stock option" within the meaning of Section 422 of the Code.

"ORIGINAL EFFECTIVE DATE": May 8, 2018.

"PARTICIPANT": An Employee, director or other person providing services to the Company or its Affiliates who is granted an Award under the Plan.

"PERFORMANCE AWARD": An Award subject to Performance Criteria (including any Award that is a Final Award distributed in satisfaction of the vesting of a Performance Award that was subject to Performance Criteria).

"PERFORMANCE CRITERIA": Specified criteria the satisfaction of which is a condition for the exercisability, vesting or full enjoyment of an Award. A Performance Criterion measure and targets with respect thereto determined by the Administrator need not be based upon an increase, a positive or improved result or avoidance of loss.

"PLAN": The Charles River Laboratories International, Inc. 2018 Incentive Plan, as amended and restated as of March 14, 2020, as from time to time further amended and in effect.

"PREEXISTING PLANS": Any plan of the Company or its predecessors in existence at or prior to the Effective Date under which equity, equity-based or performance cash awards were granted, including, without limitation, the following: (1) the 2007 Plan and (2) the 2016 Plan. For the purposes of this definition, "preexisting plans" shall not refer to the Company's Executive Incentive Compensation Plan (EICP).

"RESTRICTED STOCK": An Award of Stock subject to restrictions requiring that such Stock be redelivered to the Company if specified conditions are not satisfied.

"SARS": Rights entitling the holder upon exercise to receive cash or Stock, as the Administrator determines, equal to a function (determined by the Administrator using such factors as it deems appropriate) of the amount by which the Stock has appreciated in value since the date of the Award.

"STOCK": Common Stock of the Company.

"STOCK OPTIONS": Options entitling the recipient to acquire shares of Stock upon payment of the exercise price.

"UNRESTRICTED STOCK": An Award of Stock not subject to any restrictions under the Plan.

13. SECTION 409A OF THE CODE

To the extent applicable, Awards granted under the Plan are intended to comply with or be exempt from Section 409A of the Code, and the Administrator shall interpret and administer the Plan in accordance therewith. In addition, any provision in this Plan document that is determined to violate the requirements of Section 409A shall be void and without effect. In addition, any provision that is required to appear in this Plan document that is not expressly set forth shall be deemed to be set forth herein, and such Plan shall be administered in all respects as if such provisions were

expressly set forth. The Administrator shall have the authority unilaterally to accelerate or delay a payment to which the holder of any Award may be entitled to the extent necessary or desirable to comply with, or avoid adverse consequences under, Section 409A (including, for the avoidance of doubt, with regard to an individual deemed to be a "specified employee" under Section 409A of the Code who has received an amount hereunder deemed to be "deferred compensation" subject to Section 409A of the Code). Notwithstanding the foregoing, the Company does not guarantee that this Plan, any Awards or any payments with respect thereto are in compliance with Section 409A of the Code.

14. EFFECTIVE DATE OF THE PLAN

The Plan, prior to its amendment and restatement, became effective as of the date of its approval by the Board on March 20, 2018, subject to its approval by the stockholders of the Company on the Original Effective Date. The Plan, as amended and restated, shall be effective as of the date of its approval by the Board, subject to its approval by the stockholders of the Company (the "Effective Date").

15. AWARDS UNDER PREEXISTING PLANS

Upon approval of the Plan by stockholders of the Company as contemplated under Section 14, no further awards shall be granted under the Preexisting Plans; PROVIDED, however, that any shares that have been forfeited, cancelled or otherwise not delivered in accordance with the terms of the applicable award under a Preexisting Plan may be subsequently again awarded in accordance with the terms of the Plan. For purposes of clarity, the number of shares that relate to an Award under the Preexisting Plans is the maximum number of shares that can be delivered with respect to such Award.

French Schedule

1. Application and Purpose

This French Schedule includes special terms and conditions applicable to Qualified Deferred Stock Awards granted to Participants situated and/or employed in France. These terms and conditions are in addition to, or if so indicated, in place of, the terms and conditions set forth in the Plan.

The purpose of this French Schedule is to make certain variations to the terms of the Plan, in order to satisfy French securities laws, exchange control, corporate law and tax requirements, especially the provisions of Articles L. 225-197-1 et seq. of the French Commercial Code and article 135 of the Macron Law (*loi n° 2015-990 du 6 août 2015 pour la croissance, l'activité et l'égalité des chances économiques* as amended by the 2017 and 2018 Finance bills respectively n° 2016-1917 dated December 29, 2016 and n° 2017-1837 dated December 30, 2017), so that Qualified Deferred Stock Awards may qualify for favorable income tax and social security treatment in France (provided by article 80 *quaterdecies* of the French Tax Code and article L242-1 of the French Social Security Code).

The rules of the Plan shall apply, subject to the modifications contained in this French Schedule, whenever the Administrator decides to grant Qualified Deferred Stock Awards to Eligible French Employees under this French Schedule. In all other circumstances, where other forms of Awards (other than Qualified Deferred Stock Award) are granted to Eligible French Employees, the rules of the Plan, unamended by this French Schedule, shall apply.

The amendments to the Plan set out in this French Schedule shall only apply in respect of Qualified Deferred Stock Awards granted in accordance with this French Schedule.

This French Schedule has been approved by the shareholders of the Company (as the empowered foreign corporate body) on 8 May 2018, as required by the French tax authorities.

2. Terms and Meanings of Words Used

Unless provided otherwise or unless the context requires otherwise, capitalized terms used but not defined in this French Schedule shall have the meaning assigned to them in the Plan.

The terms of Qualified Deferred Stock Awards under this French Schedule shall be the same as those for Deferred Stock awards under the Plan, except to the extent that this French Schedule provides to the contrary. References to Deferred Stock awards in the Plan shall apply to, and include, Qualified Deferred Stock Awards, save where expressed not to apply, or save where modified by the terms of this French Schedule (in which case, the terms shall apply as modified).

References to eligible Employees in the Plan shall apply to Eligible French Employees and references to Participants in the Plan shall apply to French Participants, save where expressed not to apply, or save where modified by the terms of this French Schedule (in which case, the terms shall apply as modified).

The following definitions shall apply to Qualified Deferred Stock Awards granted in accordance with this French Schedule:

“**CLOSED PERIOD**”: has the meaning given in Article L. 225-197-1 of the French Commercial Code, as:

(i) ten quotation days preceding and three quotation days following the disclosure to the public of the consolidated financial statements or the annual statements of the Company; or

(ii) any period during which the corporate management of the Company possesses material information which could, if disclosed to the public, significantly impact the quotation of the Stock, until ten quotation days after the day such information is disclosed to the public.

“ELIGIBLE FRENCH EMPLOYEE”: means an employee of a French Subsidiary (or a French branch of a non-French Group Member), or a corporate officer of a French Subsidiary (or a French branch of a non-French Group Member) who holds the duties of chairman of the board, general manager, deputy general manager, member of the directory board, or manager (respectively *président du conseil d’administration, directeur général, directeur général délégué, membre du directoire* or *gérant*).

“**FRENCH PARTICIPANT**”: means individuals who have been granted Qualified Deferred Stock Awards.

“**GRANT DATE**”: means the date on which a Qualified Deferred Stock Award is granted to an Eligible French Employee by the Administrator.

“**GROUP**”: means the Company and its Subsidiaries from time to time, and **“Group Member”** shall be interpreted accordingly.

“**HOLDING PERIOD**”: means such period (applicable under article L225-197-1 of the French commercial code) following the vesting of the Qualified Deferred Stock Award as the Administrator may determine, which shall not expire until at least 2 years after the Grant Date.

“**QUALIFIED DEFERRED STOCK AWARD**”: means a Deferred Stock award granted to an Eligible French Employee which is intended to satisfy French securities laws, exchange control, corporate law and tax requirements (especially the provisions of Articles L. 225-197-1 et seq. of the French Commercial Code) in order to qualify for favorable income tax and social security treatment in France (articles 80 *quaterdecies* of French Tax Code and L.242-1 of French Social Security Code) and which, for the avoidance of doubt, can be subject to Performance Criteria.

“**SUBSIDIARY**”: has the meaning given in Article L. 225-197-2 of the French Commercial Code, as:

(i) a company in which the Company holds, directly or indirectly, at least 10 per cent of the share capital or voting rights;

(ii) a company holding directly or indirectly at least 10 per cent of the share capital or voting rights of the Company; or

(iii) a company for which at least 50 per cent of the share capital or voting rights are held by a company which holds at least 50 per cent of the share capital of the Company.

“**VESTING PERIOD**”: means such period (applicable under article L225-197-1 of the French commercial code) as determined by the Administrator, which shall not be less than 12 months from the Grant Date, and at the end of which, the French Participant will become entitled to have the Stock delivered to or to the order of him/her.

The following definition shall apply to Qualified Deferred Stock Awards granted in accordance with this French Schedule and shall replace the definition as it appears at Section 12 of the Plan:

"**DISABILITY**": has the meaning given in the second or third category of Article L.341-4 of the French Code of Social Security.

3. Limits on awards under the Plan

The following wording is inserted immediately following the end of the Section 2.a. of the Plan, as follows:

"*Notwithstanding any other provisions of the Plan rules, if, at the Grant Date, the total number of Stock granted subject to Awards made under the Plan and any other employee stock plan of the Company, where such Awards are granted subject to and in accordance with the provisions of Articles L.225-197-1 et seq. of the French Commercial Code and are, or are similar in substance to, a conditional right to acquire stock (other than an option) for no or limited cost (up to 5 percent of the fair market value of the stock), shall exceed* ***10 percent*** *of the issued ordinary share capital of the issuing Company, Qualified Deferred Stock Awards may only be granted over such number of Stock as does not exceed a ratio of one to five between the smallest and largest awards of Qualified Deferred Stock Awards.*

However, this relevant percentage is increased to 30 percent, if at the same time, awards are granted under the Plan, or awards are granted under any other stock plan of a Group Member, to all Eligible French Employees employed by a French Group Member or a French branch of a non-French Group Member."

The following wording is inserted immediately following the end of the Section 2.c. of the Plan, as follows:

"No Qualified Deferred Stock Award shall be granted to an Eligible French Employee who holds 10 percent or more (including any outstanding Awards) under the Plan or outstanding awards under any other employee share plan operated by the Group where such Awards or awards (as applicable) are, or are similar in substance to, a conditional right to acquire shares, other than non-exercised options) of the share capital of the Company, or who may hold, as the result of the Qualified Deferred Stock Award, 10 percent or more of the share capital of the Company."

4. Eligibility and Participation

Notwithstanding any other provision of the Plan rules, Qualified Deferred Stock Awards may only be granted to Eligible French Employees.

5. Alternative Settlement

Section 4.a.(3) of the Plan is deleted in it its entirety.

6. Vesting Period

The following wording is inserted immediately following Section 4.a.(5) of the Plan, as follows:

"The Vesting Period for Qualified Deferred Stock Award shall not be less than 12 months, so that the ownership of the Qualified Deferred Stock Award cannot be transferred to, or to the order of, the French Employees before the expiry of a minimum one year period from their Grant Date.

During the Vesting Period, the delivery of Stock must remain conditional and may also be subject to the Performance Criteria, which means that the Eligible French Employees only hold a contractual right towards the Company and are not entitled to any shareholder's right during the Vesting Period (no rights to dividend (even through an equivalent bonus whose payment would be deferred), no voting rights)."

7. Dividend Equivalents

The first sentence of Section 4.a.(7) of the Plan is deleted in its entirety.

8. Holding Period

A new Section 4.a.(12) is inserted immediately following Section 4.a.(11) of the Plan, as follows:

"HOLDING PERIOD. The Administrator may determine that a Holding Period shall apply to a Qualified Deferred Stock Award, during which period the Stock acquired by the French Participant following vesting of the Qualified Deferred Stock Award (or any interest in them) may not be sold, transferred, assigned, mortgaged, charged or otherwise disposed of by, or on behalf of, the French Participant, except for a transfer to the French Participant's legal personal representatives in the event of his death.

To the extent that a Qualified Deferred Stock Award vests less than two years after the Grant Date, the Stock acquired on vesting shall be subject to a Holding Period, so that there is a two-year period between the Grant Date and the date that the Stock may be freely disposed of by the French Participant, as required by Article L.225-197-1 of the French Commercial Code.

During the Holding Period, the Stock may be delivered to the French Participant, provided he shall agree not to sell, transfer, assign, mortgage, charge or otherwise dispose of the Stock (or any interest in them) during the Holding Period; or a nominee on behalf of the French Participant, provided that the beneficial ownership of the Stock vests in the French Participant and subject to a restriction on sale, transfer, assignment, mortgaging, charging or other disposal of such Stock (or any interest in them)."

9. Closed Period

A new Section 4.a.(13) is inserted immediately following Section 4.a.(12) of the Plan, as follows:

"CLOSED PERIOD. After the expiration of the Holding Period (if applicable), Stock transferred to a French Participant in satisfaction of a Qualified Deferred Stock Award cannot be sold or transferred by or on behalf of a French Employee during a Closed Period."

10. Cessation of employment

Sections 4.a.(5)(A), 4.d.(5) to 4.d.(7) of the Plan continue to apply to Qualified Deferred Stock Awards, where relevant, if a French Participant ceases to be employee, except that a new Section 4.d.(12) is inserted immediately following Section 4.d.(11) of the Plan, as follows:

"Notwithstanding any other provision of the Plan rules, the Plan shall, in no circumstances, have the effect of accelerating the Vesting Period or disapplying the Holding Period in circumstances where there would be a less than two year period between the Grant Date and the date that the Stock may be freely disposed of by the French Participant, except in the two following cases:

- Death of the French Participant

If a French Participant dies before his Qualified Deferred Stock Award has vested, his Qualified Deferred Stock Award shall vest immediately and any applicable Holding Period will fall away. The Qualified Deferred Stock Award may only be adjusted in such proportion as determined by the Administrator in its absolute discretion after taking into account the Performance Criteria. The Qualified Deferred Stock Award cannot be adjusted for any other criteria e.g. for time. The heirs of the deceased French Participant can require the vesting within six months from the date of death, as provided by the article L225-197-3 of the French commercial code.

Where, after a Qualified Deferred Stock Award has vested but before the expiry of any applicable Holding Period, the French Participant dies, his Stock shall cease to be subject to the Holding Period.

- Disability of the French Participant

Notwithstanding any other provision of the Plan rules, if a French Participant ceases to be in employment due to Disability before his Qualified Deferred Stock Award has vested all or a proportion of his Qualified Deferred Stock Award may vest immediately, in such proportion as determined by the Administrator in its absolute discretion, having regard to the satisfaction of the Performance Criteria and any other condition as at the time of cessation of employment, and such other factors as the Administrator may consider relevant. If a French Participant ceases to be in employment due to Disability before his Qualified Deferred Stock Award has vested, the Holding Period shall fall away.

If the French Participant ceases to be in employment due to Disability after the vesting but before the expiry of any applicable Holding Period, his Stock shall cease to be subject to the Holding Period on the date of cessation of his employment."

11. Effect of certain transactions

The following wording is inserted immediately following the end of the Sections 5.a of the Plan, as follows:

"*To the extent that the Administrator intends for the Qualified Deferred Stock Awards to retain favorable tax and social security treatment under this French Schedule, Sections 5.a and 5.b shall apply to Qualified Deferred Stock Awards in accordance with the provisions of Articles L. 225-197-1-III of the French Commercial Code and 80 quaterdecies of the French Tax Code, and shall be modified or interpreted in order to comply with these provisions*."

The following wording is inserted immediately following the end of the Section 5.b of the Plan, as follows:

"If the share capital of the Company is modified during the Vesting Period or Holding Period, the Qualified Deferred Stock Awards may be adjusted as appropriate to ensure that there is no impact on the French Participants' Qualified Deferred Stock Awards, provided that such adjustment has the sole purpose and effect of preserving the value of Qualified Deferred Stock Awards and that additional Stock which could be issued as a result remains subject to the same requirements (including the vesting and holding requirements) as those applying to the original Qualified Deferred Stock Award".

12. Taxes

A new rule is inserted immediately following the end of Section 4.a.(6) of the Plan, as follows:

"The preceding paragraph does not apply to Qualified Deferred Stock Awards. A French Participant is responsible for paying any relevant taxes and reporting the receipt of any income under the French Schedule, however made, to the relevant tax authority".

13. Amendment and termination

The following wording is inserted immediately following the end of the Section 7 of the Plan, as follows:

"*Except as permitted in this Section 7, an amendment to the provisions of the Plan may only be applied to Qualified Deferred Stock Awards already granted to the extent that:*

– *the proposed change does not affect the qualifying status of the Qualified Deferred Stock Awards for French tax and social security purposes; and*

– *if the change would adversely affect the existing rights of the French Participants, affected French Participants' prior consent is obtained.*"

14. Cross references

Unless specified otherwise, where a deletion, addition or amendment is made to the rules by this French Schedule, other references throughout the rules and this French Schedule to those additional, amended or deleted Rules (as appropriate) are deemed to be included, modified or deleted accordingly.

15. Conclusion

The following paragraphs are inserted immediately following Section 11 in the Plan, as follows:

"*It is intended that Deferred Stock awards granted to Eligible French Employees shall qualify for the special tax and social security treatment applicable to free shares granted under articles L. 225-197-1 to L.225-197-6 of the French Commercial Code and in accordance with the relevant provisions set forth by the French tax and social security laws (article 80 quaterdecies of the French Tax Code and article L.242-1 of the French Social security Code). Accordingly, the rules, the terms of the French Schedule and the terms upon which a Deferred Stock award has been granted shall be interpreted and, where necessary, deemed to be modified, in accordance with the relevant provisions set forth by French laws, as well as the relevant administrative provisions.*

If for any reason a Deferred Stock award does not satisfy the requirements of the French tax authorities for favorable income tax and social security treatment, and therefore does not qualify as a Qualified Deferred Stock Award, the Company or Administrator can take such actions, including (but not limited to) changing the Vesting Period and/or the Holding Period of the Deferred Stock award, as it considers reasonably necessary to achieve such treatment, and the rules, the terms of the French Schedule and the terms of the Qualified Deferred Stock Award shall be interpreted and, where necessary, modified accordingly. The Company and any Group Member shall not be liable for any adverse consequences, legal, tax or otherwise, if and to the extent that Deferred Stock awards do not qualify as Qualified Deferred Stock Awards."

Exhibit 31.1

CERTIFICATION PURSUANT TO
SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002
AND RULE 13a-14(a)/15d-14(a) OF THE EXCHANGE ACT OF 1934

I, James C. Foster, Chairman, President and Chief Executive Officer of Charles River Laboratories International, Inc. (the registrant) certify that:

1. I have reviewed this quarterly report on Form 10-Q for the quarter ended March 28, 2020 of the registrant;

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 officers 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 officers 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.

/s/ James C. Foster

James C. Foster
Chairman, President and Chief Executive Officer
Charles River Laboratories International, Inc.

May 7, 2020

Exhibit 31.2

CERTIFICATION PURSUANT TO
SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002
AND RULE 13a-14(a)/15d-14(a) OF THE EXCHANGE ACT OF 1934

I, David R. Smith, Corporate Executive Vice President and Chief Financial Officer of Charles River Laboratories International, Inc. (the registrant) certify that:

1. I have reviewed this quarterly report on Form 10-Q for the quarter ended March 28, 2020 of the registrant;

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 officers 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 officers 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.

/s/ David R. Smith

David R. Smith
Corporate Executive Vice President and Chief Financial Officer
Charles River Laboratories International, Inc.

May 7, 2020

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 on Form 10-Q for the quarter ended March 28, 2020 of Charles River Laboratories International, Inc. (the "Company") as filed with the Securities and Exchange Commission on the date hereof (the "Report"), the undersigned, James C. Foster, Chairman, President and Chief Executive Officer of the Company, and David R. Smith, Corporate Executive Vice President and Chief Financial Officer of the Company, each hereby certifies, to the best of his knowledge and pursuant to 18 U.S.C. Section 1350, that:

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

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

/s/ James C. Foster

James C. Foster
Chairman, President and Chief Executive Officer
Charles River Laboratories International, Inc.

May 7, 2020

/s/ David R. Smith

David R. Smith
Corporate Executive Vice President and Chief Financial Officer
Charles River Laboratories International, Inc.

May 7, 2020

This certification shall not be deemed "filed" for any purpose, nor shall it be deemed to be incorporated by reference into any filing under the Securities Act of 1933 or the Exchange Act.