

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 December 31, 2019

OR

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

For the transition period from \_\_\_\_\_ to \_\_\_\_\_

Commission file number: 001-09585



ABIOMED, INC.

(Exact name of registrant as specified in its charter)

DELAWARE

(State or other jurisdiction of incorporation or organization)

04-2743260

(IRS Employer Identification No.)

22 CHERRY HILL DRIVE  
DANVERS, MASSACHUSETTS 01923  
(Address of principal executive offices, including zip code)

(978) 646-1400  
(Registrant's telephone number, including area code)

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

Name of each exchange on which registered  
The NASDAQ Stock Market LLC

Title of each class  
Common Stock, \$0.01 par value

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 (§ 229.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes  No

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

Large accelerated filer	<input checked="" type="checkbox"/>	Accelerated filer	<input type="checkbox"/>
Non-accelerated filer	<input type="checkbox"/>	Smaller reporting company	<input type="checkbox"/>
Emerging growth company	<input type="checkbox"/>		

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

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

As of January 30, 2020, 45,062,665 shares of the registrant's common stock, \$0.01 par value, were outstanding.

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**EXPLANATORY NOTES*****Pending Trademarks and Registered Marks***

Throughout this quarterly report on Form 10-Q (the "Report"), we refer to various trademarks, service marks and trade names that we use in our business. Abiomed, Impella, Impella 2.5, Impella 5.0, Impella LD, Impella CP, Impella RP, Impella 5.5, Impella Connect, and SmartAssist are registered trademarks of Abiomed, Inc., and are registered in the U.S. and certain foreign countries. Impella BTR, Impella ECP, CVAD Study, and Automated Impella Controller are pending trademarks of Abiomed, Inc. Other trademarks and service marks appearing in this Report are the property of their respective holders.

***Company References***

Throughout this Report, "ABIOMED, Inc.," the "Company," "we," "us" and "our" refer to ABIOMED, Inc. and its consolidated subsidiaries.

***Where You Can Find More Information***

We make available, free of charge on our website located at [www.abiomed.com](http://www.abiomed.com), our annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K, and any amendments to those reports, as soon as reasonably practicable after filing such reports with or furnishing such reports to the U.S. Securities and Exchange Commission (the "SEC"). We also use our website for the distribution of Company information. The information we post on our website may be deemed to be material information. Accordingly, investors should monitor our website, in addition to following our press releases, SEC filings and public conference calls and webcasts. The contents of our website are not incorporated by reference into this Report.

## ITEM 1: Condensed Consolidated Financial Statements

**ABIOMED, INC. AND SUBSIDIARIES**  
**Condensed Consolidated Balance Sheets (Unaudited)**  
(in thousands, except share data)

	December 31, 2019	March 31, 2019
<b>ASSETS</b>		
Current assets:		
Cash and cash equivalents	\$ 117,970	\$ 121,021
Short-term marketable securities	309,569	370,677
Accounts receivable, net	100,994	90,809
Inventories	91,193	80,942
Prepaid expenses and other current assets	16,850	13,748
Total current assets	636,576	677,197
Long-term marketable securities	167,981	21,718
Property and equipment, net	162,060	145,005
Goodwill	32,594	32,601
In-process research and development	15,205	15,208
Long-term deferred tax assets, net	47,028	77,502
Other assets	135,167	85,115
Total assets	\$ 1,196,611	\$ 1,054,346
<b>LIABILITIES AND STOCKHOLDERS' EQUITY</b>		
Current liabilities:		
Accounts payable	\$ 31,566	\$ 32,185
Accrued expenses	71,876	57,420
Deferred revenue	19,156	16,393
Other current liabilities	3,661	—
Total current liabilities	126,259	105,998
Contingent consideration	10,440	9,575
Long-term deferred tax liabilities	822	822
Other long-term liabilities	12,227	1,061
Total liabilities	149,748	117,456
Commitments and contingencies (Note 13)		
Stockholders' equity:		
Class B Preferred Stock, \$.01 par value	—	—
Authorized - 1,000,000 shares; Issued and outstanding - none		
Common stock, \$.01 par value	451	451
Authorized - 100,000,000 shares; Issued - 47,498,385 shares at December 31, 2019 and 47,026,226 shares at March 31, 2019		
Outstanding - 45,112,835 shares at December 31, 2019 and 45,122,985 shares at March 31, 2019		
Additional paid in capital	733,054	690,507
Retained earnings	570,683	399,473
Treasury stock at cost - 2,385,550 shares at December 31, 2019 and 1,903,241 shares at March 31, 2019	(240,330)	(138,852)
Accumulated other comprehensive loss	(16,995)	(14,689)
Total stockholders' equity	1,046,863	936,890
Total liabilities and stockholders' equity	\$ 1,196,611	\$ 1,054,346

*The accompanying notes are an integral part of the condensed consolidated financial statements (unaudited)*

**ABIOMED, INC. AND SUBSIDIARIES**  
**Condensed Consolidated Statements of Operations (Unaudited)**  
(in thousands, except per share data)

	For the Three Months Ended December 31,		For the Nine Months Ended December 31,	
	2019	2018	2019	2018
Revenue	\$ 221,584	\$ 200,563	\$ 634,225	\$ 562,351
Costs and expenses:				
Cost of revenue	39,996	34,023	111,937	94,718
Research and development	25,655	23,965	73,413	67,955
Selling, general and administrative	85,674	80,220	257,708	240,254
	<u>151,325</u>	<u>138,208</u>	<u>443,058</u>	<u>402,927</u>
Income from operations	70,259	62,355	191,167	159,424
Other income (expenses):				
Investment income, net	3,086	2,175	9,066	5,397
Other income (expense), net	23,671	(20)	17,279	10
	<u>26,757</u>	<u>2,155</u>	<u>26,345</u>	<u>5,407</u>
Income before income taxes	97,016	64,510	217,512	164,831
Income tax provision (benefit)	27,799	19,648	46,301	(20,225)
Net income	<u>\$ 69,217</u>	<u>\$ 44,862</u>	<u>\$ 171,211</u>	<u>\$ 185,056</u>
Basic net income per share	\$ 1.53	\$ 1.00	\$ 3.79	\$ 4.13
Basic weighted average shares outstanding	45,140	45,046	45,225	44,852
Diluted net income per share	\$ 1.51	\$ 0.97	\$ 3.73	\$ 4.01
Diluted weighted average shares outstanding	45,695	46,136	45,935	46,147

*The accompanying notes are an integral part of the condensed consolidated financial statements (unaudited)*

**ABIOMED, INC. AND SUBSIDIARIES**  
**Condensed Consolidated Statements of Comprehensive Income (Unaudited)**  
(in thousands)

	<u>For the Three Months Ended December 31,</u>		<u>For the Nine Months Ended December 31,</u>	
	<u>2019</u>	<u>2018</u>	<u>2019</u>	<u>2018</u>
Net income	\$ 69,217	\$ 44,862	\$ 171,211	\$ 185,056
Other comprehensive income (loss):				
Foreign currency translation gain (loss)	1,945	(1,015)	(1,436)	(8,468)
Unrealized loss on derivative instrument	(1,392)	—	(1,392)	—
Net unrealized gains on marketable securities	8	234	522	356
Other comprehensive income (loss)	561	(781)	(2,306)	(8,112)
Comprehensive income	<u>\$ 69,778</u>	<u>\$ 44,081</u>	<u>\$ 168,905</u>	<u>\$ 176,944</u>

*The accompanying notes are an integral part of the condensed consolidated financial statements (unaudited)*

**ABIOMED, INC. AND SUBSIDIARIES**  
**Condensed Consolidated Statements of Stockholders' Equity (Unaudited)**  
(in thousands, except share data)

	Common Stock		Treasury Stock		Additional Paid in Capital	Retained Earnings	Accumulated Other Comprehensive Loss	Total Stockholders' Equity
	Shares	Par value	Shares	Amount				
<b>Balance, April 1, 2019</b>	45,122,985	\$ 451	1,903,241	\$ (138,852)	\$ 690,507	\$ 399,473	\$ (14,689)	\$ 936,890
Restricted stock units issued	373,430	4	—	—	(4)	—	—	—
Stock options exercised	36,289	1	—	—	1,260	—	—	1,261
Return of common stock to pay withholding taxes on restricted stock	(158,426)	(2)	158,426	(40,534)	—	—	—	(40,536)
Stock compensation expense	—	—	—	—	13,121	—	—	13,121
Other comprehensive income	—	—	—	—	—	—	2,934	2,934
Net income	—	—	—	—	—	88,923	—	88,923
<b>Balance, June 30, 2019</b>	45,374,278	\$ 454	2,061,667	\$ (179,386)	\$ 704,884	\$ 488,396	\$ (11,755)	\$ 1,002,593
Restricted stock units issued	12,039	—	—	—	—	—	—	—
Stock options exercised	21,268	—	—	—	1,445	—	—	1,445
Return of common stock to pay withholding taxes on restricted stock	(3,363)	(—)	3,363	(668)	—	—	—	(668)
Stock issued under employee stock purchase plan	15,659	—	—	—	2,368	—	—	2,368
Stock compensation expense	—	—	—	—	13,323	—	—	13,323
Stock repurchase program	(180,929)	(2)	180,929	(34,872)	—	—	—	(34,874)
Other comprehensive loss	—	—	—	—	—	—	(5,801)	(5,801)
Net income	—	—	—	—	—	13,071	—	13,071
<b>Balance, September 30, 2019</b>	45,238,952	\$ 452	2,245,959	\$ (214,926)	\$ 722,020	\$ 501,467	\$ (17,556)	\$ 991,457
Restricted stock units issued	6,004	—	—	—	—	—	—	—
Stock options exercised	7,470	—	—	—	460	—	—	460
Return of common stock to pay withholding taxes on restricted stock	(2,159)	(—)	2,159	(403)	—	—	—	(403)
Stock compensation expense	—	—	—	—	10,574	—	—	10,574
Stock repurchase program	(137,432)	(1)	137,432	(25,001)	—	—	—	(25,002)
Other comprehensive income	—	—	—	—	—	—	561	561
Net income	—	—	—	—	—	69,217	—	69,217
<b>Balance, December 31, 2019</b>	45,112,835	\$ 451	2,385,550	\$ (240,330)	\$ 733,054	\$ 570,683	\$ (16,995)	\$ 1,046,863

  

	Common Stock		Treasury Stock		Additional Paid in Capital	Retained Earnings	Accumulated Other Comprehensive Loss	Total Stockholders' Equity
	Shares	Par value	Shares	Amount				
<b>Balance, April 1, 2018</b>	44,375,337	\$ 444	1,725,312	\$ (67,078)	\$ 619,905	\$ 140,457	\$ (4,204)	\$ 689,524
Restricted stock units issued	384,887	4	—	—	(4)	—	—	—
Stock options exercised	282,368	3	—	—	5,795	—	—	5,798
Stock issued to directors	80	—	—	—	33	—	—	33
Return of common stock to pay withholding taxes on restricted stock	(166,401)	(2)	166,401	(67,596)	—	—	—	(67,598)
Stock compensation expense	—	—	—	—	12,245	—	—	12,245
Other comprehensive loss	—	—	—	—	—	—	(6,709)	(6,709)
Net income	—	—	—	—	—	90,066	—	90,066
<b>Balance, June 30, 2018</b>	44,876,271	\$ 449	1,891,713	\$ (134,674)	\$ 637,974	\$ 230,523	\$ (10,913)	\$ 723,359
Restricted stock units issued	18,827	—	—	—	—	—	—	—
Stock options exercised	142,978	1	—	—	4,814	—	—	4,815
Stock issued to directors	74	—	—	—	34	—	—	34
Return of common stock to pay withholding taxes on restricted stock	(5,258)	(—)	5,258	(2,069)	—	—	—	(2,069)
Stock issued under employee stock purchase plan	5,561	—	—	—	1,376	—	—	1,376
Stock compensation expense	—	—	—	—	15,934	—	—	15,934
Other comprehensive loss	—	—	—	—	—	—	(622)	(622)
Net income	—	—	—	—	—	50,127	—	50,127
<b>Balance, September 30, 2018</b>	45,038,453	\$ 450	1,896,971	\$ (136,743)	\$ 660,132	\$ 280,650	\$ (11,535)	\$ 792,954
Restricted stock units issued	14,085	1	—	—	(1)	—	—	—
Stock options exercised	10,039	—	—	—	429	—	—	429
Stock issued to directors	103	—	—	—	33	—	—	33
Return of common stock to pay withholding taxes on restricted stock	(4,633)	(—)	4,633	(1,546)	—	—	—	(1,546)
Stock issued under employee stock purchase plan	2	—	—	—	—	—	—	—
Stock compensation expense	—	—	—	—	15,578	—	—	15,578
Other comprehensive loss	—	—	—	—	—	—	(781)	(781)
Net income	—	—	—	—	—	44,862	—	44,862
<b>Balance, December 31, 2018</b>	45,058,049	\$ 451	1,901,604	\$ (138,289)	\$ 676,171	\$ 325,513	\$ (12,316)	\$ 851,530

*The accompanying notes are an integral part of the condensed consolidated financial statements (unaudited)*

**ABIOMED, INC. AND SUBSIDIARIES**  
**Condensed Consolidated Statements of Cash Flows (Unaudited)**  
(in thousands)

	For the Nine Months Ended December 31,	
	2019	2018
<b>Operating activities:</b>		
Net income	\$ 171,211	\$ 185,056
Adjustments to reconcile net income to net cash provided by operating activities:		
Depreciation and amortization	14,427	9,936
Bad debt expense	241	578
Stock-based compensation	37,019	43,757
Write-down of inventory and other	3,984	3,152
Accretion on marketable securities	(2,678)	(1,644)
Change in fair value of other investments	(17,407)	—
Deferred tax provision	30,551	(25,992)
Change in fair value of contingent consideration	865	93
Other non-cash operating activities	3,167	—
Changes in assets and liabilities:		
Accounts receivable	(10,333)	(19,268)
Inventories	(13,261)	(26,522)
Prepaid expenses and other assets	(4,250)	678
Accounts payable	841	4,909
Accrued expenses and other liabilities	11,193	6,909
Deferred revenue	2,757	164
Net cash provided by operating activities	228,327	181,806
<b>Investing activities:</b>		
Purchases of marketable securities	(491,513)	(241,745)
Proceeds from the sale and maturity of marketable securities and other	410,456	226,949
Purchases of other investments and intangible assets	(20,899)	(30,436)
Purchases of property and equipment	(33,460)	(35,469)
Net cash used for investing activities	(135,416)	(80,701)
<b>Financing activities:</b>		
Proceeds from the exercise of stock options	3,165	11,043
Taxes paid related to net share settlement upon vesting of stock awards	(41,607)	(71,213)
Repurchase of common stock	(59,876)	—
Proceeds from the issuance of stock under employee stock purchase plan	2,368	1,376
Net cash used for financing activities	(95,950)	(58,794)
Effect of exchange rate changes on cash	(12)	(1,105)
Net (decrease) increase in cash and cash equivalents	(3,051)	41,206
Cash and cash equivalents at beginning of period	121,021	42,975
Cash and cash equivalents at end of period	\$ 117,970	\$ 84,181
<b>Supplemental disclosure of cash flow information:</b>		
Cash paid for income taxes	\$ 7,479	\$ 4,500
<b>Supplemental disclosure of non-cash activities:</b>		
Property and equipment in accounts payable and accrued expenses	3,314	1,670
Right-of-use assets obtained in exchange for lease liabilities	14,596	—

*The accompanying notes are an integral part of the condensed consolidated financial statements (unaudited)*

**Note 1. Nature of Business**

ABIOMED, Inc. (the “Company” or “ABIOMED”) is a provider of mechanical circulatory support devices and offers a continuum of care to heart failure patients. The Company develops, manufactures and markets proprietary products that are designed to enable the heart to rest, heal and recover by improving blood flow and/or performing the pumping function of the heart. The Company’s products are used in the cardiac catheterization lab, or cath lab, by interventional cardiologists and in the heart surgery suite by cardiac surgeons for patients who are in need of hemodynamic support prophylactically or emergently before, during or after angioplasty or heart surgery procedures.

**Note 2. Basis of Preparation and Summary of Significant Accounting Policies**

The accompanying unaudited condensed consolidated financial statements have been prepared in accordance with U.S. generally accepted accounting principles, or GAAP, for interim financial reporting and in accordance with Article 10 of Regulation S-X. Accordingly, they do not include all of the information and note disclosures required by GAAP for complete financial statements. These statements should be read in conjunction with the consolidated financial statements and notes thereto included in the Company’s Annual Report on Form 10-K for the fiscal year ended March 31, 2019 that has been filed with the SEC.

In the opinion of management, the accompanying unaudited condensed consolidated financial statements include all normal and recurring adjustments that are necessary for a fair presentation of results for the interim periods presented. The results of operations for any interim period may not be indicative of results for the full fiscal year or any other subsequent period.

There have been no changes in the Company’s significant accounting policies for the three and nine months ended December 31, 2019 as compared to the significant accounting policies described in the Company’s Annual Report on Form 10-K for the fiscal year ended March 31, 2019 that has been filed with the SEC, except as described in “Recently Adopted Accounting Pronouncements.”

***Recently Adopted Accounting Pronouncements***

Effective April 1, 2019, the Company adopted the Financial Accounting Standards Board, or FASB standard update ASU 2016-02 (“Topic 842”), “Leases,” which requires lessees with lease arrangements exceeding a one-year term to record a right-of-use asset and lease obligation on the balance sheet, whether operating or financing, and related lease expenses for operating leases and amortization and interest expense for financing leases in the statement of operations. Additional information and disclosures required by this standard are contained in “Note 8. Leases.”

***Recently Issued Accounting Pronouncements Not Yet Effective***

In June 2016, the FASB issued ASU 2016-13 (“Topic 326”), “Financial Instruments - Credit Losses” This new guidance will require financial instruments to be measured at amortized cost, and accounts receivables to be presented at the net amount expected to be collected. The new model requires an entity to estimate credit losses based on historical information, current information, and reasonable and supportable forecasts, including estimates of prepayments. ASU 2016-13 is effective for annual reporting periods beginning after December 31, 2019. The Company does not expect the adoption of this standard to have a material impact on its consolidated financial statements. ASU 2016-13 will become effective for the Company in fiscal 2021.

In January 2017, the FASB issued ASU 2017-04, (“Topic 350”), “Intangibles - Goodwill and Other” This new guidance simplifies the accounting for goodwill impairment by removing Step 2 of the goodwill impairment test, which required companies to estimate the implied fair value of goodwill and recognize an impairment charge by the amount in which the carrying value exceeds the implied fair value. Under the new guidance, if the carrying value of a reporting unit exceeds its fair value, a goodwill impairment charge will be recorded, even if the difference is attributable to the fair value of other assets in the reporting unit. ASU 2017-04 is effective for annual reporting periods beginning after December 15, 2019. The Company does not expect the adoption of this standard to have a material impact on its consolidated financial statements. ASU 2017-04 will become effective for the Company in fiscal 2021.

In August 2018, the FASB issued ASU 2018-13 (“Topic 820”), “Fair Value Measurement” This new guidance modifies the disclosure requirements for fair value measurements. The Company has investments accounted for and disclosed under Topic 820 and will modify disclosures as applicable to conform with the new guidance. ASU 2018-13 is effective for annual reporting periods beginning after December 15, 2019 and early adoption is permitted. The Company does not expect the adoption of this standard and the required disclosure changes to have a material impact on its consolidated financial statements. ASU 2018-13 will become effective for the Company in fiscal 2021.



**Note 3. Net Income Per Share**

Basic net income per share is computed by dividing net income by the weighted average number of common shares outstanding during the period. Diluted net income per share is computed by dividing net income by the weighted average number of dilutive common shares outstanding during the period. Diluted shares outstanding are calculated by adding to the weighted average shares outstanding any potential dilutive securities outstanding for the period. Potential dilutive securities include stock options, restricted stock units, performance-based stock awards and shares to be purchased under the Company's employee stock purchase plan. The Company's basic and diluted net income per share for the three and nine months ended December 31, 2019 and 2018 were as follows (in thousands, except per share data):

	For the Three Months Ended December 31,		For the Nine Months Ended December 31,	
	2019	2018	2019	2018
<b>Basic Net Income Per Share</b>				
Net income	\$ 69,217	\$ 44,862	\$ 171,211	\$ 185,056
Weighted average shares - basic	45,140	45,046	45,225	44,852
Net income per share - basic	\$ 1.53	\$ 1.00	\$ 3.79	\$ 4.13
<b>Diluted Net Income Per Share</b>				
Net income	\$ 69,217	\$ 44,862	\$ 171,211	\$ 185,056
Weighted average shares - basic	45,140	45,046	45,225	44,852
Effect of dilutive securities	555	1,090	710	1,295
Weighted average shares - diluted	45,695	46,136	45,935	46,147
Net income per share - diluted	\$ 1.51	\$ 0.97	\$ 3.73	\$ 4.01

Share-based compensation awards of approximately 0.3 million and 0.2 million shares for the three months ended December 31, 2019, and 2018, respectively, and approximately 0.2 million shares for each of the nine months ended December 31, 2019 and 2018, respectively, were outstanding but were not included in the computation of diluted net income per share because the effect of including such shares would have been anti-dilutive or are contingently issuable upon meeting performance criteria in the periods presented.

**Note 4. Revenue Recognition****Adoption of Topic 606, Revenue from Contracts with Customers**

The Company adopted Topic 606 on April 1, 2018, using the modified retrospective method for all contracts not completed as of the date of adoption. The adoption of Topic 606 did not have a material impact on the Company's consolidated balance sheet, statement of operations, stockholders' equity or cash flows as of the adoption date or for the three and nine months ended December 31, 2019.

The Company has made the following accounting policy elections and elected to use certain practical expedients, as permitted by the FASB, in applying Topic 606: (1) the Company accounts for amounts collected from customers for sales and other taxes, net of related amounts remitted to tax authorities; (2) the Company does not adjust the promised amount of consideration for the effects of a significant financing component because, at contract inception, the Company expects the period between the time when the Company transfers a promised good or service to the customer and the time when the customer pays for that good or service will be one year or less; (3) the Company expenses costs to obtain a contract as they are incurred if the expected period of benefit, and therefore the amortization period, is one year or less; (4) the Company accounts for shipping and handling activities that occur after control transfers to the customer as a fulfillment cost rather than an additional promised service and these fulfillment costs are recorded as selling, general and administrative expenses; (5) the Company does not assess whether promised goods or services are performance obligations if they are immaterial in the context of the contract with the customer; and (6) the Company does not disclose the transaction price allocated to unsatisfied performance obligations when the original expected contract duration is one year or less.

The Company generates revenue primarily from the sale of Impella 2.5, Impella CP, Impella 5.0, Impella LD, Impella RP, Impella 5.5, and Impella AIC products. The Company also earns revenue from preventative maintenance service contracts and maintenance calls.

The Company determines revenue recognition through the following steps:

- Identification of the contract, or contracts, with a customer
- Identification of the performance obligation in the contract
- Determination of the transaction price
- Allocation of the transaction price to the performance obligation in the contract
- Recognition of revenue when, or as, a performance obligation is satisfied

**Identification of contracts and performance obligations**

The Company accounts for a contract with a customer when there is an approval and commitment from both parties, the rights of the parties are identified, payment terms are identified, the contract has commercial substance and collectability of the consideration is probable. The Company's performance obligations consist mainly of transferring control of products and services identified in the contracts, purchase orders or invoices. For each contract, the Company considers the obligation to transfer products and services to the customer, each of which are distinct, to be performance obligations.

**Transaction price and allocation to performance obligations**

Transaction prices of products or services are typically based on contracted rates with customers and there is only variable consideration in limited instances. To the extent that the transaction price includes variable consideration, the Company estimates the amount of variable consideration that should be included in the transaction price utilizing the expected value method or the most likely amount, depending on the circumstances, to which the Company expects to be entitled. An expected value method may be an appropriate estimate of the amount of variable consideration if an entity has a large number of contracts with similar characteristics whereas the most likely amount method may be an appropriate estimate of the amount of variable consideration if the contract has only two possible outcomes. Variable consideration is included in the transaction price if, in the Company's judgment, it is probable that a significant future reversal of cumulative revenue under the contract will not occur. Estimates of variable consideration and determination of whether to include estimated amounts in the transaction price are based largely on an assessment of the Company's anticipated performance and all information (historical, current and forecasted) that is reasonably available. Sales and other taxes collected on behalf of third parties are excluded from revenue.

The Company does not provide for rights of return to customers on product sales and, therefore, does not record a provision for returns. Customers typically have a limited time frame to notify the Company of any defective or non-conforming products. The Company's limited warranty provision is accounted for using the cost accrual method and is recognized as expense when products are sold and is not considered a separate performance obligation.

If a contract contains a single performance obligation, the entire transaction price is allocated to the single performance obligation. Contracts that contain multiple performance obligations require an allocation of the transaction price based on the estimated relative standalone selling prices of the promised products or services underlying each performance obligation. The Company determines standalone selling prices based on the price at which the performance obligation is sold separately.

**Revenue Recognition**

Revenue is recognized when, or as, obligations under the terms of a contract are satisfied, which occurs when control of the promised products or services is transferred to customers. Revenue is measured as the amount of consideration the Company expects to receive in exchange for transferring products or services to a customer.

Product revenue is generally recognized when the customer obtains control of the Company's products, which occurs at a point in time, and may be upon shipment or upon delivery based on the contractual shipping terms of a contract.

Service revenue is generally recognized over time as the services are rendered to the customer based on the extent of progress towards completion of the performance obligation. The Company recognizes service revenue over the term of the service contract. Services are expected to be transferred to the customer throughout the term of the contract and the Company believes recognizing revenue ratably over the term of the contract best depicts the transfer of value to the customer. Revenue generated from preventative maintenance calls is recognized at a point in time when the services are provided to the customer.

Revenue from the sale of products and services are evidenced by either a contract with the customer or a valid purchase order and an invoice which includes all relevant terms of sale and shipment of product or service provided has been incurred. The Company performs a review of each specific customer's credit worthiness and ability to pay prior to acceptance as a customer. Further, the Company performs periodic reviews of its customers' creditworthiness prospectively.

#### Disaggregation of Revenue

The Company generally sells most of its products and services through a direct sales force in the U.S., Germany and Japan and through direct sales or distribution agreements in other international markets (e.g., certain other European markets, Canada, Latin America, Middle East and Asia-Pacific). Revenue is categorized as Impella product revenue and service and other revenue and by geography, which the Company believes best depicts how the nature, amount, timing, and uncertainty of revenues and cash flows are affected by economic factors.

The following table categorizes the Company's revenue by products and services:

	For the Three Months Ended December 31,		For the Nine Months Ended December 31,	
	2019	2018	2019	2018
	(in \$000's)		(in \$000's)	
Impella product revenue	\$ 212,626	\$ 193,253	\$ 609,430	\$ 542,198
Service and other revenue	8,958	7,310	24,795	20,153
Total revenue	\$ 221,584	\$ 200,563	\$ 634,225	\$ 562,351

The following table categorizes the Company's revenue by geographical location:

	For the Three Months Ended December 31,		For the Nine Months Ended December 31,	
	2019	2018	2019	2018
	(in \$000's)		(in \$000's)	
U.S. revenue	\$ 185,569	\$ 172,548	\$ 533,070	\$ 488,386
International revenue	36,015	28,015	101,155	73,965
Total revenue	\$ 221,584	\$ 200,563	\$ 634,225	\$ 562,351

#### Variable Consideration

Revenues from product sales are recorded at the net sales price (transaction price), which includes estimates of variable consideration for which reserves are established and which result from discounts or rebates that are offered within contracts between the Company and its customers relating to the Company's sales of its products. These reserves are based on the amounts earned or are expected to be claimed on the related sales and are classified as a liability. Where appropriate, these estimates take into consideration relevant factors such as the Company's historical experience, current contractual and statutory requirements, specific known market events and trends, industry data and forecasted customer buying and payment patterns. These reserves reflect the Company's best estimates of the amount of consideration to which it is entitled based on the terms of the contract. Actual amounts of consideration ultimately received may differ from the Company's estimates. If actual results in the future vary from the Company's estimates, the Company adjusts these estimates, which would affect revenue and earnings in the period such variances become known.

#### Rebates and Discounts

The Company provides certain customers with rebates and discounts that are defined in the Company's contract arrangements with customers and are recorded as a reduction of revenue in the period the related product revenue is recognized, resulting in a reduction to revenue and the establishment of a liability, which are all included in accrued expenses in the consolidated balance sheets. Rebates normally result from administrative fees required by certain customers and performance-based offers that are primarily based on attaining contractually specified sales volumes as well as product usage. Discounts are normally from early payment incentives. The Company estimates the amount of rebates and discounts based on an estimate of the third-party's sales and the respective rebate or discount defined in the customer contractual arrangement. Revenue adjustments that relate to performance obligations satisfied in prior periods during the three and nine months ended December 31, 2019 and 2018 were not material.

**Contract Balances**

The timing of revenue recognition, billings, shipments and cash collections results in accounts receivables and deferred revenue on the consolidated balance sheet. A receivable is recognized in the period the Company's right to the consideration from the customer is unconditional. The change in the accounts receivable balances relate to the timing of revenue recognition, billings and cash collections. The Company generally does not have any performance obligations with a term of more than one year.

Payment terms vary by contract type and type of customer and generally range from 30 to 60 days for direct sales customers. Payment terms with certain international distributors can range from 60 to 120 days. The Company's contracts with customers do not typically include extended payment terms.

**Deferred Revenue**

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, deferred revenue is recorded. Deferred revenue is recognized as revenue after control of the products or services is transferred to the customer and all revenue recognition criteria have been met.

The Company's deferred revenue balance was \$19.2 million as of December 31, 2019 and \$16.4 million as of March 31, 2019 respectively. The Company's deferred revenue is comprised primarily of product shipments in which the customer has not obtained control of the product and upfront payments received on preventive maintenance service contracts in which service has not been fully performed. This deferred revenue is recognized as revenue when the customer obtains control of the product for product sales, and revenue is recognized on service contracts ratably over the term of the service contract. During the three and nine months ended December 31, 2019, the Company recognized \$2.3 million and \$15.0 million of revenue that was included in the deferred revenue balance as of March 31, 2019, respectively.

**Costs to Obtain or Fulfill a Customer Contract**

The Company has certain costs to obtain and fulfill a customer contract, such as commissions and shipping costs. The Company recognizes the incremental costs of obtaining contracts as an expense when incurred if the amortization period of the assets that the Company otherwise would have recognized is one year or less. The Company accounts for shipping and handling activities related to contracts with customers as costs to fulfill the promise to transfer the associated products. These costs are included in Selling, general, and administrative expenses.

**Note 5. Financial Instruments****Cash Equivalents, Marketable Securities**

The Company's cash equivalents and marketable securities at December 31, 2019 and March 31, 2019 are classified on the balance sheet as follows:

	December 31, 2019	(in \$000's)	March 31, 2019
Cash equivalents	\$ 56,674		\$ 80,089
Short-term marketable securities	309,569		370,677
Long-term marketable securities	167,981		21,718
	<u>\$ 534,224</u>		<u>\$ 472,484</u>

The Company's cash equivalents and marketable securities at December 31, 2019 and March 31, 2019 are invested in the following:

	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Fair Market Value
December 31, 2019:				
			(in \$000's)	
Money market funds	\$ 36,674	\$ —	\$ —	\$ 36,674
Repurchase agreements	20,000	—	—	20,000
Short-term U.S. Treasury mutual fund securities	37,158	23	—	37,181
Short-term government-backed securities	108,117	121	(11)	108,227
Short-term corporate debt securities	124,113	149	(4)	124,258
Short-term commercial paper	39,903	9	(9)	39,903
Long-term U.S. Treasury mutual fund securities	10,086	2	—	10,088
Long-term government-backed securities	71,963	46	(26)	71,983
Long-term corporate debt securities	85,348	562	—	85,910
	<u>\$ 533,362</u>	<u>\$ 912</u>	<u>\$ (50)</u>	<u>\$ 534,224</u>
March 31, 2019:				
			(in \$000's)	
Money market funds	\$ 60,089	\$ —	\$ —	\$ 60,089
Repurchase agreements	20,000	—	—	20,000
Short-term U.S. Treasury mutual fund securities	58,786	13	(12)	58,787
Short-term government-backed securities	126,336	60	(15)	126,381
Short-term corporate debt securities	128,626	97	(9)	128,714
Short-term commercial paper	56,780	16	(1)	56,795
Long-term corporate debt securities	21,529	189	—	21,718
	<u>\$ 472,146</u>	<u>\$ 375</u>	<u>\$ (37)</u>	<u>\$ 472,484</u>

#### Derivative Instruments

In October 2019, the Company entered into an intercompany agreement in which it loaned 85.0 million Euro to its Abiomed Europe GMBH, its German subsidiary. In conjunction with this intercompany loan agreement, the Company entered into a cross-currency swap agreement to convert a notional amount of 85.0 million Euro equivalent to \$93.5 million denominated intercompany loan into U.S. dollars. The objective of this cross-currency swap is to hedge the variability of cash flows related to the forecasted interest and principal payments on the Euro denominated fixed rate loan against changes in the exchange rate between the U.S. dollar and the Euro. Under the terms of this cross-currency swap contract, which has been designated as a cash flow hedge, the Company will make interest payments in Euro and receive interest in U.S. dollars. Upon the maturity of this contract, the Company will pay the principal amount of the loan in Euro and receive U.S. dollars from the counterparty. The cross-currency swap is carried on the consolidated balance sheet at fair value, and changes in the fair values are recorded as unrealized gains or losses in Accumulated Other Comprehensive Income ("AOCI").

The Company uses a foreign-exchange-related derivative instrument to manage its exposure related to changes in the exchange rate on its intercompany loan. The Company does not enter into derivative instruments for any purpose other than cash flow hedging.

The following table summarizes the terms of the cross-currency swap agreement as of December 31, 2019 (dollar amounts in thousands):

	Effective Date	Maturity	Fixed Rate	December 31, 2019 Aggregate Notional Amount
Pay EUR	October 15,	October 15,	2.75%	EUR 85,000
Receive U.S.\$	2019	2024	4.64%	USD 93,457

The following table presents the notional amount and fair value of the Company's derivative instrument as of December 31, 2019:

Derivatives designated as hedging instruments under ASC 815	Balance Sheet classification	December 31, 2019	
			Fair Value
Cross-currency swap	Other assets (long term liabilities)	\$	(3,278)

The Company has structured its cross-currency swap agreement to be 100% effective and, as a result, there was no net impact to earnings resulting from hedge ineffectiveness. Changes in the fair value of the cross-currency swap designated as a hedging instrument that effectively offsets the variability of cash flows are reported in AOCI. These amounts subsequently are reclassified into the consolidated income statement in the same period in which the related hedged item affects earnings.

For the three and nine months ended December 31, 2019, the Company recorded a \$0.4 million in other income, net, included in the consolidated statements of operations related to the interest rate differential of the cross-currency swaps.

#### Contingent Consideration

The Company's contingent consideration consists of potentially payable amount related to the acquisition of ECP Entwicklungsgesellschaft mbH, or ECP, and AIS GmbH Aachen Innovative Solutions, or AIS, in July 2014. The Company acquired ECP and AIS for \$13.0 million in cash, with additional potential payouts totaling \$15.0 million based on the achievement of CE Mark approval in the European Union and a revenue-based milestone related to the development of the future Impella ECPTM expandable catheter pump technology. These potential milestone payments may be made, at the Company's option, by a combination of cash or Company common stock. As of December 31, 2019, the Company used a combination of an income approach, based on various revenue and cost assumptions and applying a probability to each outcome and a Monte-Carlo valuation model. For the clinical and regulatory milestone, probabilities were applied to each potential scenario and the resulting values were discounted using a rate that considers the weighted average cost of capital as well as a specific risk premium associated with the riskiness of the earn out itself, the related projections, and the overall business. The revenue-based milestone is valued using a Monte-Carlo valuation model, which simulates estimated future revenues during the earn out-period using management's best estimates. Projected revenues are based on the Company's most recent internal operational budgets and long-range strategic plans.

#### Fair Value Hierarchy

Fair value is defined as the price that would be received upon the sale of an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. Financial assets and liabilities carried at fair value are to be classified and disclosed in one of the following three categories:

Level 1: Quoted market prices in active markets for identical assets or liabilities.

Level 2: Observable market-based inputs or unobservable inputs that are corroborated by market data.

Level 3: Unobservable inputs that are not corroborated by market data.

Level 1 primarily consists of financial instruments whose values are based on quoted market prices such as exchange-traded instruments and listed equities.

Level 2 includes financial instruments that are valued using models or other valuation methodologies. These models are primarily industry-standard models that consider various assumptions, including time value, yield curve, volatility factors, prepayment speeds, default rates, loss severity, current market and contractual prices for the underlying financial instruments, as well as other relevant economic measures. Substantially all of these assumptions are observable in the marketplace, can be derived from observable data or are supported by observable levels at which transactions are executed in the marketplace.

Level 3 is comprised of unobservable inputs that are supported by little or no market activity. Financial assets are considered Level 3 when their fair values are determined using pricing models, discounted cash flows or similar techniques and at least one significant model assumption or input is unobservable.

The following tables presents the Company's fair value hierarchy for its financial instruments measured at fair value as of December 31, 2019 and March 31, 2019:

	Level 1	Level 2	Level 3	Total
<b>December 31, 2019:</b>				
(in \$000's)				
<b>Assets</b>				
Money market funds	\$ 36,674	\$ —	\$ —	\$ 36,674
Repurchase agreements	—	20,000	—	20,000
Short-term U.S. Treasury mutual fund securities	—	37,181	—	37,181
Short-term government-backed securities	—	108,227	—	108,227
Short-term corporate debt securities	—	124,258	—	124,258
Short-term commercial paper	—	39,903	—	39,903
Long-term U.S. Treasury mutual fund securities	—	10,088	—	10,088
Long-term government-backed securities	—	71,983	—	71,983
Long-term corporate debt securities	—	85,910	—	85,910
Investment in Shockwave Medical	73,735	—	—	73,735
<b>Liabilities</b>				
Cross-currency swap agreement	—	3,278	—	3,278
Contingent consideration	—	—	10,440	10,440
<b>March 31, 2019:</b>				
(in \$000's)				
<b>Assets</b>				
Money market funds	\$ 60,089	\$ —	\$ —	\$ 60,089
Repurchase agreements	—	20,000	—	20,000
Short-term U.S. Treasury mutual fund securities	—	58,787	—	58,787
Short-term government-backed securities	—	126,381	—	126,381
Short-term corporate debt securities	—	128,714	—	128,714
Short-term commercial paper	—	56,795	—	56,795
Long-term corporate debt securities	—	21,718	—	21,718
Investment in Shockwave Medical	56,195	—	—	56,195
<b>Liabilities</b>				
Contingent consideration	—	—	9,575	9,575

The Company has determined that the estimated fair value of its money market funds and its investment in Shockwave Medical, a publicly traded medical device company, are reported as Level 1 financial assets as they are valued at quoted market prices in active markets. The investment in Shockwave Medical is classified within other assets in the consolidated balance sheet.

The Company has determined that the estimated fair value of its repurchase agreements, U.S. Treasury mutual fund securities, government-backed securities, corporate debt securities, commercial paper and cross-currency rate swap are reported as Level 2 financial assets as they are based on model-driven valuations in which all significant inputs are observable, or can be derived from or corroborated by observable market data for substantially the full term of the asset.

The Company's contingent consideration liability is reported as Level 3 as the estimated fair value of the contingent consideration related to the acquisition of ECP requires significant management judgment or estimation and is calculated using the following valuation methods:

	Milestone Payment	Fair Value at December 31, 2019	Valuation Methodology	Significant Unobservable Input	Weighted Average (range, if applicable)
	(in \$000's)				
Clinical and regulatory milestone	\$ 7,000	\$ 5,617	Probability weighted income approach	Projected fiscal year of milestone payments	2021 to 2023
				Discount rate	2.84% to 2.86%
				Probability of occurrence	Probability adjusted level of 45% for the base case scenario and 15% to 40% for various downside and upside scenarios
Revenue-based milestone	8,000	4,823	Monte Carlo simulation model	Projected fiscal year of milestone payments	2025 to 2035
				Discount rate	18%
				Expected volatility for forecasted revenues	50%
				Probability of payment (risk-neutral)	73.8%
	<u>\$ 15,000</u>	<u>\$ 10,440</u>			

The following table summarizes the change in fair value, as determined by Level 3 inputs, of the contingent consideration for the three and nine months ended December 31, 2019 and 2018:

	For the Three Months Ended December 31,		For the Nine Months Ended December 31,	
	2019	2018	2019	2018
	(in \$000's)			
Beginning balance	\$ 10,236	\$ 10,331	\$ 9,575	\$ 10,490
Additions	—	—	—	—
Payments	—	—	—	—
Change in fair value	204	252	865	93
Ending balance	<u>\$ 10,440</u>	<u>\$ 10,583</u>	<u>\$ 10,440</u>	<u>\$ 10,583</u>

The change in fair value of the contingent consideration was primarily due to estimates related to development timelines and the passage of time on the fair value measurement of milestones. Adjustments associated with the change in fair value of contingent consideration are included in research and development expenses in the Company's consolidated statements of operations. Significant increases or decreases in any of the probabilities of success or changes in expected timelines for achievement of any of these milestones could result in a significantly higher or lower fair value of the liability. The fair value of the contingent consideration at each reporting date is updated by reflecting the changes in fair value reflected in the Company's consolidated statement of operations. There is no assurance that any of the conditions for the milestone payments will be met.



**Note 6. Property and Equipment**

The components of property and equipment are as follows:

	December 31, 2019	March 31, 2019
	(in \$000's)	
Land	\$ 7,261	\$ 7,262
Building and building improvements	98,819	86,705
Leasehold improvements	14,150	2,190
Machinery and equipment	66,793	59,146
Furniture and fixtures	14,619	11,456
Construction in progress	13,148	17,946
Total cost	214,790	184,705
Accumulated depreciation	(52,730)	(39,700)
Property and equipment, net	\$ 162,060	\$ 145,005

**Note 7. Goodwill, In-Process Research and Development and Other Assets****Goodwill**

The carrying amount of goodwill at December 31, 2019 and March 31, 2019 was \$32.6 million and \$32.6 million, respectively, and has been recorded in connection with the Company's acquisition of Impella Cardiosystems AG, in May 2005 and ECP and AIS in July 2014. The carrying value of goodwill and the change in the balance for the nine months ended December 31, 2019 are as follows:

	(in \$000's)
Balance, March 31, 2019	\$ 32,601
Foreign currency translation impact	(7)
Balance, December 31, 2019	\$ 32,594

The Company evaluates goodwill at least annually at October 31, as well as whenever events or changes in circumstances suggest that the carrying amount may not be recoverable. The Company has no accumulated impairment losses on goodwill.

**In-Process Research & Development**

The carrying amount of in-process research & development, or IPR&D, assets at December 31, 2019 and March 31, 2019 was \$15.2 million for each date, respectively, and was recorded in conjunction with the Company's acquisition of ECP and AIS, in July 2014. The estimated fair value of IPR&D assets at the acquisition date was determined using a probability-weighted income approach, which discounts expected future cash flows to present value. The projected cash flow estimates for the future Impella ECPTM expandable catheter pump technology was based on certain key assumptions, including estimates of future revenue and expenses, taking into account the stage of development of the technology at the acquisition date and the time and resources needed to complete development. The Company used an original discount rate of 21% and cash flows that have been probability adjusted to reflect the risks of product commercialization, which the Company believes is appropriate and representative of market participant assumptions.

The carrying value of the Company's IPR&D assets and the change in the balance for the nine months ended December 31, 2019 are as follows:

	(in \$000's)
Balance, March 31, 2019	\$ 15,208
Foreign currency translation impact	(3)
Balance, December 31, 2019	\$ 15,205

The Company evaluates IPR&D assets at least annually at October 31, as well as whenever events or changes in circumstances suggest that the carrying amount may not be recoverable. The Company has no accumulated impairment losses on IPR&D assets.

**Other Assets**

Other assets are made of the following:

	December 31, 2019	March 31, 2019
	(in \$000's)	
Equity method and other investments	\$ 117,036	\$ 80,779
Right of use asset - leases (Note 8)	11,455	—
Other intangible assets and other assets	6,676	4,336
Total other assets	\$ 135,167	\$ 85,115

**Equity Method Investment and Other Investments**

The Company periodically makes investments in medical device companies that focus on heart failure, heart pump and other medical device technologies. For investments in convertible debt or preferred stock securities that do not have readily determinable market values, the Company measures these investments at cost minus impairment, if any, plus or minus changes resulting from observable price changes in orderly transactions for an identical or similar investment. The Company measures investments in equity securities at fair value and recognize changes in fair value in net income. For equity method investments, the amount of the Company's initial investment is adjusted each period by the Company's share of the investee's income or loss. The Company monitors any events or changes in circumstances that may have a significant effect on the fair value of investments, either due to impairment or based on observable price changes, and makes any necessary adjustments.

The following table summarizes the Company's equity method and other investments as of December 31, 2019 and March 31, 2019, which are classified as other assets in the consolidated balance sheets:

	December 31, 2019	March 31, 2019
	(in \$000's)	
Other investments	\$ 114,169	\$ 80,779
Equity method investment	2,867	—
Total equity and other investments	\$ 117,036	\$ 80,779

The carrying value of the Company's portfolio of equity method and other investments and the change in the balance for the three and nine months ended December 31, 2019 and 2018 are as follows:

	For the Three Months Ended December 31,		For the Nine Months Ended December 31,	
	2019	2018	2019	2018
	(in \$000's)			
Beginning balance	\$ 81,836	\$ 22,325	\$ 80,779	\$ 12,649
Additions	12,600	18,459	19,600	28,135
Disposals	(750)	—	(750)	—
Change in fair value, net	23,350	—	17,407	—
Ending balance	\$ 117,036	\$ 40,784	\$ 117,036	\$ 40,784

In fiscal 2019, the Company invested \$25.0 million in Shockwave Medical. The fair value of this investment as of December 31, 2019 and March 31, 2019 was \$73.7 million and \$56.2 million, respectively. The Company recognized a pre-tax unrealized gain of \$23.5 million and \$17.5 million on its investment in Shockwave Medical for the three and nine months ended December 31, 2019, respectively.

In July 2019, the Company invested \$3.0 million in a small private medical device company. Based on the Company's controlling economic interest and significant influence exertion over the investee's operating and financial policies, this investment was accounted for using the equity method. The Company recognizes its share of the results of operations related to this equity method investment one quarter in arrears when the results of the entity become available, in other income (expense), net of tax in the condensed consolidated statement of operations. The Company's share of income statement activity for this equity method investment for the three and nine months ended December 31, 2019 was a loss of \$0.1 million.

During the nine months ended December 31, 2019, the Company made additional other investments of \$16.6 million in other private medical device companies.

#### Other Intangible Assets and Other

Included within other intangible assets and other assets is \$4.1 million related to license manufacturing rights to certain technology from third parties. These intangible assets are classified with other assets in the Company's consolidated balance sheet and are amortized over their useful life of 15 years.

#### Note 8. Leases

The Company has lease agreements for real estate including corporate offices, warehouse space, vehicles and certain office equipment.

At the inception of a contractual arrangement, the Company determines whether it contains a lease by assessing whether there is an identified asset and whether the contract conveys the right to control the use of the identified asset in exchange for consideration over a period of time. If both criteria are met, the Company calculates the associated lease liability and corresponding right-of-use, or ROU, asset upon lease commencement. Operating lease assets and liabilities are recognized based on the present value of minimum lease payments over the lease term using an appropriate discount rate. ROU assets also include any lease payments made at or before lease commencement and any initial direct costs incurred and exclude any lease incentives received.

The discount rate used is the rate that the Company would have to pay to borrow on a collateralized basis over a similar term for an amount equal to the lease payments in a similar economic environment. 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 lease do not contain an implicit rate, the Company's incremental borrowing rate is used as the discount rate. Discount rates are updated when there is a new lease or a modification to an existing lease, and the methodology is reassessed annually.

The Company records operating lease liabilities within current liabilities or long-term liabilities based upon the length of time associated with the lease payments. The Company records its operating lease ROU assets as long-term assets. Leases with an initial term of 12 months or less are not recognized on the consolidated balance sheet. The Company have elected the practical expedient where lease agreements with lease and non-lease components are accounted for as a single lease component for all assets. The Company's financing leases are not material to our financial statements.

The Company adopted ASC Topic 842 on April 1, 2019 using the optional transition method. As such, the disclosures required under ASC Topic 842 are not presented for periods before the date of adoption. For the comparative period prior to adoption, the Company presents the disclosures which were previously required under ASC Topic 840.

The Company elected the package of transitional practical expedients for leases existing prior to the adoption date. The Company did not reassess whether existing contracts are or contain leases, leases retained their historical lease classification and initial direct costs were not reassessed for capitalization under the new standard. Operating lease assets and operating lease liabilities were recognized based on the present value of minimum lease payments over the remaining lease term as of the adoption date.

The following table presents supplemental balance sheet information related to our operating leases:

	<u>December 31, 2019</u>	
	(in \$000's)	
<b>Assets</b>		
Operating lease right-of-use assets in other assets	\$	11,455
<b>Liabilities</b>		
Operating lease liabilities in other current liabilities		3,115
Operating lease liabilities in other long-term liabilities		9,506
Total operating lease liabilities	\$	<u>12,621</u>

Expense charged to operations under operating leases was \$1.2 million and \$3.2 million during the three and nine months ended December 31, 2019, respectively. Short-term lease expenses were not material.

Under ASC Topic 840, Leases ("ASC 840"), the Company recognized rent expense on a straight-line basis over the term of the lease and recorded the difference between the amount charged to expense and the rent paid as prepaid rent or deferred rent liability. As of March 31, 2019, the amount of deferred rent was \$0.3 million, which was subsequently reclassified as contra-asset against the ROU asset upon adoption of ASU No. 2016-02 on April 1, 2019.

Maturities of operating lease liabilities as of December 31, 2019 are as follows:

(in thousands, except lease term and discount rate)

Fiscal Years Ended March 31,	
2020	\$ 895
2021	3,378
2022	2,561
2023	1,533
2024	1,442
Thereafter	3,322
Total minimum lease payments	<u>13,131</u>
Less: imputed interest	<u>(510)</u>
Present value of operating lease liabilities	<u>\$ 12,621</u>
Weighted average remaining lease term	5.59
Weighted average discount rate	3.23%

Minimum future lease payments previously disclosed under ASC 840 in our Annual Report on Form 10-K for the year ended March 31, 2019 were as follows:

Fiscal Years Ended March 31,		(in \$000's)
2020	\$	3,398
2021		2,712
2022		2,000
2023		1,462
2024		1,414
Thereafter		3,288
Total minimum lease payments	\$	<u>14,274</u>

#### Note 9. Accrued Expenses

Accrued expenses consist of the following:

	December 31, 2019	(in \$000's)	March 31, 2019
Employee compensation	\$ 34,151	\$	32,926
Sales and income taxes	21,773		12,262
Research and development	4,702		3,309
Professional, legal, and accounting fees	3,361		2,757
Marketing	2,212		1,707
Warranty	1,698		1,272
Other	3,979		3,187
	<u>\$ 71,876</u>	\$	<u>57,420</u>

Employee compensation consists primarily of accrued bonuses, commissions, employee benefits and, payroll taxes at December 31, 2019 and March 31, 2019.

**Note 10. Stockholders' Equity****Stock Repurchase Program**

In August 2019, the Company's Board of Directors authorized a stock repurchase program for up to \$200.0 million of shares of its common stock. Under this stock repurchase program, the Company is authorized to repurchase shares through open market purchases, privately negotiated transactions or otherwise in accordance with applicable federal securities laws, including through Rule 10b5-1 trading plans and under Rule 10b-18 of the Securities Exchange Act of 1934 (the "Exchange Act"). The stock repurchase program has no time limit and may be suspended for periods or discontinued at any time. The Company is funding the stock repurchase program with its available cash and marketable securities. Through December 31, 2019, the Company has repurchased a total of 318,361 shares for \$59.9 million under the stock repurchase program. The remaining authorization under the stock repurchase program was \$140.1 million as of December 31, 2019.

The following table provides share repurchase activities:

	For the Three Months Ended December 31,		For the Nine Months Ended December 31,	
	2019	2018	2019	2018
Shares repurchased	137,432	—	318,361	—
Average price per share	\$ 181.94	—	\$ 188.08	—
Value of shares repurchased (in millions)	\$ 25.0	—	\$ 59.9	—

**Accumulated Other Comprehensive Income (Loss)**

The components of accumulated other comprehensive income (loss), are as follows (in thousands):

	Nine Months Ended December 31, 2019			
	Foreign Currency Items	Unrealized Gains and Losses on Investments	Gains and Losses on cash flow hedge	Total
Balance, April 1, 2019	(15,028)	339	—	(14,689)
Other comprehensive income (loss)	2,334	600	—	2,934
Balance, June 30, 2019	(12,694)	939	—	(11,755)
Other comprehensive income (loss)	(5,716)	(85)	—	(5,801)
Balance, September 30, 2019	(18,410)	854	—	(17,556)
Other comprehensive income (loss)	1,945	8	(1,392)	561
Balance, December 31, 2019	\$ (16,465)	\$ 862	\$ (1,392)	\$ (16,995)

	Nine Months Ended December 31, 2018			
	Foreign Currency Items	Unrealized Gains and Losses on Investments	Gains and Losses on cash flow hedge	Total
Balance, April 1, 2018	(3,597)	(607)	—	(4,204)
Other comprehensive income (loss)	(6,852)	143	—	(6,709)
Balance, June 30, 2018	(10,449)	(464)	—	(10,913)
Other comprehensive income (loss)	(600)	(22)	—	(622)
Balance, September 30, 2018	(11,049)	(486)	—	(11,535)
Other comprehensive income (loss)	(1,015)	234	—	(781)
Balance, December 31, 2018	\$ (12,064)	\$ (252)	\$ —	\$ (12,316)

**Note 11. Stock-Based Compensation**

The following table summarizes stock-based compensation expense by financial statement line item in the Company's condensed consolidated statements of operations for the three and nine months ended December 31, 2019 and 2018:

	For the Three Months Ended December 31,		For the Nine Months Ended December 31,	
	2019	2018	2019	2018
	(in \$000's)			
Cost of product revenue	\$ 809	\$ 773	\$ 2,531	\$ 2,122
Research and development	1,586	2,638	5,292	7,222
Selling, general and administrative	8,179	12,167	29,196	34,413
	<u>\$ 10,574</u>	<u>\$ 15,578</u>	<u>\$ 37,019</u>	<u>\$ 43,757</u>

**Stock Options**

The following table summarizes the stock option activity for the nine months ended December 31, 2019:

	Options (in thousands)	Weighted Average Exercise Price	Weighted Average Remaining Contractual Term (years)	Aggregate Intrinsic Value (in thousands)
Outstanding at beginning of period	853	\$ 87.14	5.57	
Granted	117	259.52		
Exercised	(65)	48.67		
Cancelled and expired	(14)	235.87		
Outstanding at end of period	<u>891</u>	<u>\$ 110.27</u>	5.46	\$ 79,843
Exercisable at end of period	<u>668</u>	<u>\$ 62.60</u>	4.39	\$ 77,717
Options vested and expected to vest at end of period	<u>888</u>	<u>\$ 110.28</u>	5.46	\$ 79,672

Stock options generally vest and become exercisable annually over three years. The remaining unrecognized stock-based compensation expense for unvested stock option awards at December 31, 2019 was approximately \$15.2 million and the estimated weighted-average period over which this cost will be recognized is 2.0 years.

The aggregate intrinsic value of options exercised was \$12.2 million for the nine months ended December 31, 2019. The total cash received as a result of employee stock option exercises for the nine months ended December 31, 2019 was approximately \$3.2 million.

The Company estimates the fair value of each stock option granted at the grant date using the Black-Scholes option valuation model. The weighted average grant-date fair values and weighted average assumptions used in the calculation of fair value of options granted during the three and nine months ended December 31, 2019 and 2018 was as follows:

	For the Three Months Ended December 31,		For the Nine Months Ended December 31,	
	2019	2018	2019	2018
Weighted average grant-date fair value	\$ 74.61	\$ 117.50	\$ 93.68	\$ 142.08
Valuation assumptions:				
Risk-free interest rate	1.68%	2.81%	1.99%	2.93%
Expected option life (years)	4.10	4.04	4.14	4.04
Expected volatility	42.36%	45.2%	42.34%	42.8%

## Restricted Stock Units

The following table summarizes activity of restricted stock units for the nine months ended December 31, 2019:

	Number of Shares (in thousands)	Weighted Average Grant Date Fair Value (per share)
Restricted stock units at beginning of period	620	\$ 193.53
Granted	159	260.13
Vested	(391)	144.39
Forfeited	(65)	307.40
Restricted stock units at end of period	323	\$ 264.48

Restricted stock units generally vest annually over three years. The remaining unrecognized compensation expense for outstanding restricted stock units, including performance awards, as of December 31, 2019 was \$41.1 million and the estimated weighted-average period over which this cost will be recognized is 1.8 years.

The weighted average grant-date fair value for restricted stock units granted during the nine months ended December 31, 2019 was \$260.13. The total fair value of restricted stock units vested during the nine months ended December 31, 2019 was \$99.1 million.

### Performance-Based Awards

In May 2019, performance-based awards of restricted stock units for the potential issuance of up to 196,580 shares of common stock were issued to certain executive officers and employees, which vest upon achievement of prescribed service milestones by the award recipients and the achievement of prescribed performance milestones by the Company. As of December 31, 2019, the Company is recognizing compensation expense based on the probable outcome related to the prescribed performance targets on the outstanding awards.

## Note 12. Income Taxes

The Company's income tax provision was \$27.8 million and \$19.6 million for the three months ended December 31, 2019 and 2018, respectively. The Company's income tax provision was \$46.3 million for the nine months ended December 31, 2019 and the Company had an income tax benefit of \$20.2 million for the nine months ended December 31, 2018. The Company's effective tax rate was 28.7% and 30.5% for the three months ended December 31, 2019 and 2018, respectively. The Company's effective tax rate was 21.3% and (12.3)% for the nine months ended December 31, 2019 and 2018, respectively.

The significant differences between the statutory income tax rate and effective income tax rate for the three and nine months ended December 31, 2019 and 2018 were as follows:

	For the Three Months Ended December 31,		For the Nine Months Ended December 31,	
	2019	2018	2019	2018
Statutory income tax rate	21.0 %	21.0 %	21.0 %	21.0 %
Increase (decrease) resulting from:				
Excess tax benefits from stock-based awards	(0.5)	(2.6)	(6.3)	(41.5)
Credits	(1.6)	(1.7)	(1.6)	(1.7)
State taxes, net	3.3	4.3	3.3	4.3
Permanent differences	1.8	1.8	1.8	1.8
Excess foreign tax credits	4.0	7.9	2.7	3.7
Other	0.7	(0.2)	0.4	0.1
Effective tax rate	28.7 %	30.5 %	21.3 %	(12.3) %

The Company recognizes excess tax benefits and shortfalls in the income tax provision as discrete items in the period in which restricted stock units vest or stock option exercises occur. The Company recognized excess tax benefits associated with stock-based awards of \$0.5 million and \$1.7 million as an income tax benefit for the three months ended December 31, 2019 and 2018, respectively. The Company recognized excess tax benefits associated with stock-based awards of \$13.8 million and \$68.5 million as an income tax benefit for the nine months ended December 31, 2019 and 2018, respectively. These recognized excess tax benefits resulted from restricted stock units that vested or stock options that were exercised during each period. The amount of future excess tax benefits or shortfalls will likely fluctuate from period to period based on the price of the Company's stock, the number of restricted stock units that vest or stock options that are exercised, and the fair value assigned to such stock-based awards under U.S. GAAP.

The Company and its subsidiaries are subject to U.S. federal income tax, as well as income tax in multiple state and foreign jurisdictions. During fiscal 2019, the Company closed an income tax audit in Germany, which covered fiscal years 2012 through 2015 and an Internal Revenue Service audit in the U.S. relating to its fiscal year 2016 tax return. These audits did not materially impact our financial statements. All other tax years remain subject to examination by the federal, state and foreign tax authorities.

### **Note 13. Commitments and Contingencies**

From time to time, the Company is involved in legal and administrative proceedings and claims of various types. In some actions, the claimants seek damages, as well as other relief, which, if granted, would require significant expenditures. The Company records a liability in its consolidated financial statements for these matters when a loss is known or considered probable and the amount can be reasonably estimated. The Company reviews these estimates each accounting period as additional information is known and adjusts the loss provision when appropriate. If a matter is both probable to result in liability and the amount of loss can be reasonably estimated, the Company estimates and discloses the possible loss or range of loss. If the loss is not probable or cannot be reasonably estimated, a liability is not recorded in its consolidated financial statements.

#### ***Thoratec Matters***

Thoratec Corporation (“Thoratec”), a subsidiary of Abbott Laboratories, has challenged a number of Company-owned patents in Europe in connection with the launch of Thoratec’s HeartMate PHPTM medical device (“PHP”) in Europe and the Company has counterclaimed for infringement in the District Court in Düsseldorf. The litigation was stayed pending the highest Court’s ruling on the validity and scope of the litigated patents. In September 2019, the Federal Court of Justice in Germany upheld the Company’s patents that are the subject of the patent infringement action for the sales and marketing of Thoratec’s PHP pump in Germany. Subsequently, the District Court in Düsseldorf lifted the stay and re-opened the litigation proceedings.

These actions relate solely to Thoratec’s ability to manufacture and sell its PHP product in Europe and have no impact on the Company’s ability to manufacture or sell its Impella® line of medical devices. The actions do not expose the Company to liability risk, except under local German law that requires a losing party in a proceeding to pay a portion of the other party’s legal fees.

#### ***Maquet Matters***

In December 2015, the Company received a letter from Maquet Cardiovascular LLC (“Maquet”), a subsidiary of Getinge AB, asserting that the Company’s Impella® devices infringe certain claims with guidewire, lumen, rotor, purge and sensor features, which were in two Maquet patents and one pending patent application (which has since issued as a third patent) in the U.S. and elsewhere, and attaching a draft litigation complaint. The letter encouraged the Company to take a license from Maquet. In May 2016, the Company filed suit in U.S. District Court for the District of Massachusetts (“D. Mass.” or “the Court”) against Maquet, seeking a declaratory judgment that the Company’s Impella devices do not infringe Maquet’s cited patent rights. The three Maquet patents will expire in September 2020, December 2020 and October 2021.

In August 2016, Maquet sent a letter to the Company identifying four new Maquet U.S. continuation patent filings with claims that Maquet alleges are infringed by the Company’s Impella devices. The four U.S. continuation applications have been issued as patents of Maquet and will expire in September 2020.

In September 2016, Maquet filed a response to the Company’s suit in D. Mass., including various counterclaims alleging that the Company’s Impella 2.5®, Impella CP®, Impella 5.0®, and Impella RP® heart pumps infringe certain claims of the three original issued U.S. patents (“2016 Action”). In July 2017, the Court granted a motion to add three of the four additional continuation patents to the 2016 Action. In April 2018, the Court conducted a Markman hearing on claim interpretation. On September 7, 2018, the judge issued a Memorandum and Order on Claim Construction, where he interpreted the disputed claim terms in the case. Maquet then filed a motion for reconsideration of the Court’s construction of one of the disputed claim terms. That motion was denied on May 22, 2019. The motion was denied on May 22, 2019. As a result of the Court’s denial, only one of the six originally asserted patents is in dispute. The Company filed a motion for summary judgement for the remaining patent on September 18, 2019. The parties briefed the motion on November 19, 2019 and are waiting for Court’s resolution. The Court has not set a date for trial.

In November 2017, Maquet filed a second action in D. Mass (the “2017 Action”) alleging that the Company’s Impella 2.5®, Impella CP®, and Impella 5.0® heart pumps infringe certain claims of the fourth additional U.S. continuation patent mentioned above (the seventh patent overall). Discovery in the 2017 Action is ongoing.

In a series of letters during January and February 2019, Maquet informed the Company of seven new patent applications filed from the patents in the 2016 Action and 2017 Action with claims Maquet alleges would be infringed by the Impella® products if the new applications were to issue as patents. All seven applications issued as patents between February and July of 2019 and will expire in September 2020. One of the newly issued patents has been added to the 2017 Action. A Markman hearing for the newly-added patent was held on November 18, 2019. A Markman order has not been issued yet. Discovery remains ongoing.

In the 2016 Action and 2017 Action, Maquet seeks injunctive relief and monetary damages in the form of a reasonable royalty, with three times the amount for alleged willful infringement. In its responses to the Company’s counterclaims, Maquet admits that its current commercially available products do not embody the claims of the asserted patents.



The Company is unable to estimate the potential liability with respect to the legal matters noted above. There are numerous factors that make it difficult to meaningfully estimate possible loss or range of loss at this stage of the legal proceedings, including the significant number of legal and factual issues still to be resolved in the Maquet and Thoratec patent disputes.

#### ***Securities Class Action Litigation***

On or about August 6, 2019, the Company received a securities class action complaint filed on behalf of a single shareholder in the U.S. District Court for the Southern District of New York (“SDNY”), on behalf of himself and persons or entities that purchased or acquired the Company’s securities between January 31, 2019 through July 31, 2019. On October 7, 2019, a similar purported class action complaint was filed by a different shareholder on behalf of himself and persons or entities that purchased or acquired the Company’s securities between November 1, 2018 and July 31, 2019. Also, on October 7, 2019, four shareholders filed applications to be appointed lead plaintiff and for their counsel to be appointed lead counsel for the class. Two of those shareholders also filed motions to consolidate the two cases. Since October 7, 2019, two of the shareholders have withdrawn their applications to be lead plaintiff. After the court selects one of the two remaining shareholders as lead plaintiff, that plaintiff is expected to file an amended complaint.

The complaints allege that the Company violated Sections 10(b) and 20(a) of and Rule 10b-5 under the Exchange Act, in connection with allegedly misleading disclosures made by the Company regarding its financial condition and results of operations. The Company has reviewed and not yet responded to the complaints. The Company believes that the allegations are without merit and plans to defend itself vigorously.

#### ***Shareholder Derivative Litigation***

On November 6 and 7, 2019, two shareholders filed derivative actions in SDNY that were subsequently consolidated. On November 8, 2019, another shareholder filed a derivative action in Massachusetts Suffolk County Superior Court. On January 7, 2020, another shareholder derivative action was filed in the U.S. District Court for the District of Delaware. The complaints in these actions rely on many of the same allegations as in the securities class actions, and assert that, between November 1, 2018 and July 31, 2019, the directors of the Company made or allowed to be made misleading public statements regarding the Company’s growth, ultimately harming the Company.

The Company has agreed with plaintiffs in the consolidated SDNY and Delaware actions to stay those cases pending resolution of a motion to dismiss in the securities class actions, and is negotiating a similar stay with the plaintiff in the Massachusetts case. On January 27, 2020, the Delaware case was administratively closed and subject to reopening after resolution of a motion to dismiss in the securities class actions.

The Company is unable to estimate the potential liability with respect to the legal matters noted above. There are numerous factors that make it difficult to estimate reasonably possible loss or range of loss at this stage of the legal proceedings, including the significant number of legal and factual issues still to be resolved in the securities class action litigation.

#### **Note 14. Segment and Enterprise Wide Disclosures**

The Company operates in one business segment: the research, development and sale of medical devices to assist or replace the pumping function of the failing heart. The Company’s chief operating decision maker (determined to be the Chief Executive Officer) does not manage any part of the Company separately, and the allocation of resources and assessment of performance are based on the Company’s consolidated operating results. International sales (meaning sales outside the U.S., primarily in Europe and Japan) accounted for 16% and 14% of total revenue for the three months ended December 31, 2019 and 2018, respectively, and 16% and 13% of total revenue for the nine months ended December 31, 2019 and 2018, respectively. The Company’s long-lived assets are located in the U.S., except for \$46.6 million and \$43.4 million at December 31, 2019 and March 31, 2019, respectively, which are located primarily in Germany.

**Forward Looking Statements**

*This Report, including the documents incorporated by reference in this Report, includes forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. All statements, other than statements of historical facts, may be forward-looking statements. These forward-looking statements may be accompanied by such words as "anticipate," "believe," "estimate," "expect," "forecast," "intend," "may," "plan," "potential," "project," "target," "should," "likely," "will" and other words and terms of similar meaning. Each forward-looking statement in this Report is subject to risks and uncertainties that could cause actual results to differ materially from those expressed or implied by such statement. Factors that could cause actual results or conditions to differ from those anticipated by these and other forward-looking statements include: our dependence on Impella® products for all of our revenues; our ability to successfully compete against our existing or potential competitors; the acceptance of our products by cardiac surgeons and interventional cardiologists, especially those with significant influence over medical device selection and purchasing decisions; long sales and training cycles associated with expansion into new hospital cardiac centers; reduced market acceptance of our products due to lengthy clinician training process; our ability to effectively manage our growth; our ability to successfully commercialize our products; our ability to obtain regulatory approvals and market and sell our products in certain jurisdictions; enforcement actions and product liability suits relating to off-label uses of our products; unsuccessful clinical trials or procedures relating to products under development; our ability to maintain compliance with regulatory requirements; mandatory or voluntary product recalls; shutdowns of the U.S. federal government; third-party payers' failure to provide reimbursement of our products; changes in healthcare reimbursement systems in the U.S. and other foreign jurisdictions; our failure to comply with healthcare "fraud and abuse" laws; our failure to comply with the U.S. Foreign Corrupt Practices Act and other anti-corruption laws, export control laws, import and customs laws, trade and economic sanctions laws and other laws governing our operations; uncertainties associated with our product development efforts; our ability to increase manufacturing capacity to support continued demand for our products; our or our vendors' failure to achieve and maintain high manufacturing standards; our ability to attract and retain key personnel; our suppliers' failure to provide the components we require; our ability to expand our direct sales activities into international markets; the economic effects of "Brexit"; poor performance of our distributors in the international markets; our ability to sustain profitability; our potential "ownership change" for U.S. federal income tax purposes and our limited utilization of net operating losses from prior tax years; impact of changes in tax laws, including recently enacted U.S. Tax Reform; our ability to develop and commercialize new products or acquire desirable companies, products or technologies; our failure to protect our intellectual property or develop or acquire additional intellectual property; increased risk of material product liability claims; inventory write-downs and other costs due to product quality problems; liabilities due to failure to protect the confidentiality of patient health information; disruptions of critical information systems or material breaches in the security of our systems; risks and liabilities associated with acquisitions of other companies or businesses; changes in accounting standards, tax laws and financial reporting requirements; changes in methods, estimates and judgments we use in applying our accounting policies; liabilities, expenses and restrictions associated with environmental and health safety laws; fluctuations in foreign currency exchange rates; the outcome of ongoing securities class action litigation relating to our public disclosures and other factors discussed in Part I, Item 1A, Risk Factors of our Form 10-K for the year ended March 31, 2019 and the filings subsequently filed with or furnished to the SEC. Readers are cautioned not to place undue reliance on any forward-looking statements, which speak only as of the date of this Report. Unless otherwise required by law, the company undertakes no obligation to publicly release the results of any revisions to these forward-looking statements that may be made to reflect events or circumstances that occur after the date of this Report or to reflect the occurrence of unanticipated events.*

**Overview**

We are a leading provider of temporary mechanical circulatory support devices, and we offer a continuum of care to heart failure patients. We develop, manufacture and market proprietary products that are designed to enable the heart to rest, heal and recover by improving blood flow to the coronary arteries and end-organs and/or temporarily assisting the pumping function of the heart. Our products are used in the cardiac catheterization lab, or cath lab, by interventional cardiologists, the electrophysiology lab, the hybrid lab and in the heart surgery suite by cardiac surgeons. A physician may use our devices for patients who are in need of hemodynamic support prophylactically, urgently or emergently before, during or after angioplasty or heart surgery procedures. We believe that heart recovery is the optimal clinical outcome for a patient experiencing heart failure because it enhances the potential for the patient to go home with their own heart, facilitating the restoration of quality of life. In addition, we believe that, for the care of such patients, heart recovery is often the most cost-effective solution for the healthcare system.

Our strategic focus and the driver of our revenue growth is the market penetration of our family of Impella® heart pumps. The Impella device portfolio, which includes the Impella 2.5®, Impella CP®, Impella 5.0®, Impella LD®, Impella 5.5® and Impella RP® devices has supported numerous patients worldwide. We expect that all of our product and service revenue in the near future will be from our Impella devices.

Our Impella 2.5, Impella CP, Impella 5.0, Impella LD, Impella 5.5 and Impella RP devices have U.S Food and Drug Administration (“FDA”) and CE Mark which allows us to market these devices in the U.S. and European Union. We expect to continue to make additional PMA supplement submissions for our Impella portfolio of devices for additional indications.

Our Impella 2.5 and Impella 5.0 devices have regulatory approval from the Ministry Health Labour and Welfare (“MHLW”), in Japan. In March 2019, we received Pharmaceuticals and Medical Devices Agency (“PMDA”) approval from MHLW for our Impella CP heart pump in Japan. We began to sell the Impella CP heart pump as an additional product offering in Japan in the quarter ending September 30, 2019.

## **Our Existing Products**

### ***Impella 2.5®***

The Impella 2.5 device is a percutaneous micro heart pump with an integrated motor and sensors. The device is designed primarily for use by interventional cardiologists to support patients in the cath lab who may require assistance to maintain circulation. The Impella 2.5 heart pump can be quickly inserted via the femoral artery to reach the left ventricle of the heart, where it is directly deployed to draw blood out of the ventricle and deliver it to the circulatory system. This function is intended to reduce ventricular work and provide blood flow to vital organs. The Impella 2.5 heart pump is introduced with normal interventional cardiology procedures and can pump up to 2.5 liters of blood per minute.

In March 2015, we received a PMA from the FDA for the use of the Impella 2.5 device during elective and urgent high-risk percutaneous coronary intervention, or PCI, procedures. With this PMA, the Impella 2.5 device became the first FDA approved hemodynamic support device for use during high-risk PCI procedures. Under this PMA, the Impella 2.5 is a temporary (up to six hours) ventricular support device indicated for use during high-risk PCI performed in elective or urgent hemodynamically stable patients with severe coronary artery disease and depressed left ventricular ejection fraction, when a heart team, including a cardiac surgeon, has determined high-risk PCI is the appropriate therapeutic option. Use of the Impella 2.5 device in these patients may prevent hemodynamic instability that may occur during planned temporary coronary occlusions and may reduce periprocedural and post-procedural adverse events. The product labeling allows for the clinical decision by physicians to leave the Impella 2.5 device in place beyond the intended duration of up to six hours should unforeseen circumstances arise.

In April 2016, the FDA approved a PMA supplement for certain of our devices, including our Impella 2.5 device, to provide treatment for ongoing cardiogenic shock. This PMA supplement covers a set of indications related to the use of the Impella devices in patients suffering cardiogenic shock following acute myocardial infarction, or cardiac surgery, and allows for a longer duration of support. The Impella 2.5 catheter, in conjunction with the Automated Impella Controller, or AIC, was approved as a temporary ventricular support device intended for short term use ( $\leq$  4 days) and indicated for the treatment of ongoing cardiogenic shock that occurs immediately ( $<$  48 hours) following acute myocardial infarction as a result of isolated left ventricular failure that is not responsive to optimal medical management and conventional treatment measures. The intent of the Impella system therapy is to reduce ventricular work and to provide the circulatory support necessary to allow heart recovery and early assessment of residual myocardial function. Optimal medical management and convention treatment measures include volume loading and use of pressors and inotropes, with or without an intra-aortic balloon pump, or IABP.

In September 2016, we received Pharmaceuticals and Medical Device Agency, or PMDA, approval from the Japanese Ministry of Health, Labour & Welfare, or MHLW, for our Impella 2.5 heart pump to provide treatment of drug-resistant acute heart failure in Japan. In July 2017, we received approval from the MHLW for reimbursement of the Impella 2.5 heart pump. Reimbursement in Japan for the Impella 2.5 is equivalent to our average Impella sales price in the U.S.

In February 2018, we received two expanded PMAs from the FDA for certain of our Impella heart pumps. The first expanded PMA includes the Impella 2.5 heart pump for use on patients with cardiogenic shock associated with cardiomyopathy, including peripartum and postpartum cardiomyopathy. The second expanded PMA includes the Impella 2.5 heart pump for use during elective and high-risk PCI procedures. This expanded PMA confirms Impella support as appropriate in patients with severe coronary artery disease, complex anatomy and extensive comorbidities, with or without depressed ejection fraction.

In September 2019, the Company announced the results of PROTECT III, the ongoing, prospective, single-arm FDA post-approval study for the PMA approval of Impella 2.5 and Impella CP in high-risk PCI. PROTECT III follows the PROTECT II randomized controlled trial. The findings of this interim analysis on 898 patients demonstrates a reduction in the primary endpoint of death, stroke, myocardial infarction and repeat procedures at 90 days with Impella-supported Protected PCI, compared to PROTECT II.

The Impella 2.5 device has CE Mark approval in the European Union for up to five days of use and is approved for use in up to 40 countries. The Impella 2.5 device also has Health Canada approval which allows us to market the device in Canada.

## Impella CP®

The Impella CP device provides blood flow of approximately one liter more per minute than the Impella 2.5 device and is primarily used by either interventional cardiologists to support patients in the cath lab or by cardiac surgeons in the heart surgery suite.

In April 2016, the FDA approved a PMA supplement for certain of our devices, including our Impella CP device, to provide treatment for ongoing cardiogenic shock. This PMA supplement covers a set of indications related to the use of the Impella devices in patients suffering cardiogenic shock following acute myocardial infarction, or cardiac surgery, and allows for a longer duration of support. The Impella CP catheter, in conjunction with the AIC, was approved as a temporary ventricular support device intended for short term use ( $\leq 4$  days) and indicated for the treatment of ongoing cardiogenic shock that occurs immediately ( $< 48$  hours) following acute myocardial infarction as a result of isolated left ventricular failure that is not responsive to optimal medical management and conventional treatment measures. The intent of the Impella system therapy is to reduce ventricular work and to provide the circulatory support necessary to allow heart recovery and early assessment of residual myocardial function. Optimal medical management and conventional treatment measures include volume loading and use of pressors and inotropes, with or without an intra-aortic balloon pump, or IABP.

In December 2016, the FDA expanded a previously received PMA that granted approval for the use of the Impella CP device during elective and urgent high-risk PCI procedures in the U.S. With this indication, the Impella CP and the Impella 2.5 devices provide the only minimally invasive treatment options indicated for use during high-risk PCI procedures in the U.S.

In February 2018, we received two expanded PMAs from the FDA for certain of our Impella heart pumps. The first expanded PMA includes the Impella CP heart pump for use on patients with cardiogenic shock associated with cardiomyopathy, including peripartum and postpartum cardiomyopathy. The second expanded PMA includes the Impella CP heart pump for use during elective and high-risk PCI procedures, and it confirms Impella support as appropriate in patients with severe coronary artery disease, complex anatomy and extensive comorbidities, with or without depressed ejection fraction. These PMAs allow the Impella CP to be used as a temporary ( $\leq 6$  hours) ventricular support system indicated for use during high risk PCI procedures performed in elective or urgent hemodynamically stable patients with severe coronary artery disease and depressed left ventricular ejection fraction, when a heart team, including a cardiac surgeon, has determined that high-risk PCI is the appropriate therapeutic option. The product labeling allows for the clinical decision by physicians to leave the Impella CP device in place beyond the intended duration of up to six hours should unforeseen circumstances arise.

In April 2018, we received FDA approval for our Impella CP SmartAssist™ platform. The SmartAssist platform includes optical sensor technology for improved positioning, the use of algorithms that enable improved native heart assessment during the weaning process and cloud-based technology that enables secure, real-time, remote viewing of the Impella console for physicians and hospital staff from anywhere with internet connectivity. The platform is intended to provide enhanced monitoring capability, reduce setup time and improve ease of use for physicians. The SmartAssist platform is also approved under CE Mark in the European Union and other countries that require a CE Mark approval. We have begun a controlled roll-out of the SmartAssist platform at certain hospital sites.

In November 2018, we announced the results of our FDA approved prospective multi-center feasibility study, “STEMI Door to Unloading with Impella CP system in acute myocardial infarction” (STEMI DTU). The trial focused on the feasibility and safety of unloading the left ventricle using the Impella CP heart pump prior to primary PCI in patients presenting with ST segment elevation myocardial infarction, or STEMI, without cardiogenic shock with the hypothesis that this will potentially reduce infarct size. The study, which received FDA investigational device approval to proceed in October 2016, enrolled 50 patients at 10 sites. The hypothesis of this novel approach to treating STEMI patients, based on extensive mechanistic research, is that unloading the left ventricle prior to PCI reduces myocardial work load, oxygen demand and also initiates a cardio-protective effect at the myocardial cell level, which may alleviate myocardial damage caused by reperfusion injury at the time of revascularization. The intent of this study was to help refine the protocol and lay the groundwork for a future pivotal study with more sites and patients and will be designed for statistical significance.

In April 2019, the FDA approved the initiation of the STEMI DTU pivotal randomized controlled trial. The prospective, multi-center, two-arm trial plans to enroll 668 patients undergoing treatment for a STEMI heart attack at up to 60 sites. Half the patients will be randomized to receive delayed reperfusion after 30 minutes of left ventricular unloading with the Impella CP. The other half will receive immediate reperfusion, the current standard of care. The trial will test the hypothesis that unloading the left ventricle for 30 minutes prior to reperfusion will reduce myocardial damage from a heart attack and lead to a reduction in future heart failure related events. We began the trial in the third quarter of fiscal 2020 and we estimate that it will take three to four years to complete enrollment. The trial allows for an adaptive design, which permits adjustments to the study sample size after an interim analysis.

In March 2019, we received PMDA approval from MHLW for our Impella CP heart pump in Japan. We began selling the Impella CP heart pump as an additional product offering in Japan in fiscal 2020.

The Impella CP device has CE Mark approval in the European Union and other countries that require a CE Mark approval for up to five days of use.

### **Impella 5.0® and Impella LD®**

The Impella 5.0 and Impella LD devices are percutaneous micro heart pumps with integrated motors and sensors for use primarily in the heart surgery suite. These devices are designed to support patients who require higher levels of circulatory support as compared to the Impella 2.5.

The Impella 5.0 device can be inserted into the left ventricle via a femoral cut down or through the axillary artery. The Impella 5.0 device is passed into the ascending aorta, across the valve and into the left ventricle. The Impella LD device is similar to the Impella 5.0 device, but it is implanted directly into the ascending aorta through an aortic graft. Both devices are normally used by cardiac surgeons in the surgery suite. The Impella 5.0 and Impella LD devices can pump up to five liters of blood per minute, potentially providing full circulatory support.

In April 2016, the FDA approved a PMA supplement for certain of our devices, including our Impella 5.0 and Impella LD devices, to provide treatment for ongoing cardiogenic shock. This PMA supplement covers a set of indications related to the use of the Impella devices in patients suffering cardiogenic shock following acute myocardial infarction, or cardiac surgery, and allows for a longer duration of support. The Impella 5.0 and LD catheters, in conjunction with the AIC, were approved as temporary ventricular support devices intended for short term use ( $\leq 6$  days) and indicated for the treatment of ongoing cardiogenic shock that occurs immediately ( $< 48$  hours) following acute myocardial infarction as a result of isolated left ventricular failure that is not responsive to optimal medical management and conventional treatment measures. The intent of the Impella system therapy is to reduce ventricular work and to provide the circulatory support necessary to allow heart recovery and early assessment of residual myocardial function.

In September 2016, we received PMDA approval from the Japanese Ministry Health Labour and Welfare, MHLW, for our Impella 5.0 heart pump to provide treatment of drug-resistant acute heart failure in Japan. In July 2017, we received approval from the Japanese MHLW for reimbursement for the Impella 5.0 heart pump. Reimbursement in Japan for the Impella 5.0 is equivalent to our average Impella sales price in the U.S.

In May 2019, we received an expanded PMA from the FDA for labeling of the Impella 5.0 and Impella LD for the treatment of cardiogenic shock. The expansion extends the duration of support for each pump from 6 days to 14 days. This approval expands the previous indication for acute myocardial infarction, cardiogenic shock and post-cardiotomy shock, or PCCS, received in April 2016, and use of the Impella 5.0 and Impella LD heart pumps to provide treatment for heart failure associated with cardiomyopathy leading to cardiogenic shock, received in February 2018.

The Impella 5.0 and Impella LD devices have CE Mark approval in the European Union for up to ten days' duration and are approved for use in over 40 countries.

### **Impella RP®**

The Impella RP is a percutaneous catheter-based axial flow pump that is designed to allow greater than four liters of blood flow per minute and is intended to provide the flow and pressure needed to compensate for right side heart failure. The Impella RP is the first percutaneous single access heart pump designed for right heart support to receive FDA approval. The Impella RP device is approved to provide support of the right heart during times of acute failure for certain patients who have received a left ventricle assist device or have suffered heart failure due to AMI, a failed heart transplant, or following open heart surgery.

In September 2017, we received a PMA from the FDA for the Impella RP heart pump. This latest approval follows the prior FDA humanitarian device exemption, or HDE, received in January 2015 and adds the Impella RP heart pump to our platform of devices with PMAs. The Impella RP heart pump is indicated for providing temporary right ventricular support for up to 14 days in patients with a body surface area  $\geq 1.5$  m<sup>2</sup> who develop acute right heart failure or decompensation following left ventricular assist device implantation, myocardial infarction, heart transplant or open-heart surgery. With this approval, the Impella RP heart pump is the only percutaneous temporary ventricular support device that is FDA-approved as safe and effective for right heart failure as stated in the indication.

In February 2019, the FDA released a letter to health care providers on the Impella RP heart pump reiterating to physicians to follow proper protocols for the use of Impella RP. In May 2019, the FDA issued an update to its February 2019 letter to inform the health care community of these interim post-approval study results which validated that the Impella RP heart pump is safe and effective for the treatment of right heart failure. The results showed a 64% survival rate and 90% heart recovery for the subgroup of Impella RP post approval study patients who met the enrollment criteria of Impella RP's premarket clinical studies. Impella RP is the only percutaneous technology with FDA approval designating it as safe and effective for right heart support

The Impella RP device has CE Mark approval for commercial sale in the European Union and other countries that require a CE Mark approval from commercial sales.

### Impella 5.5®

The Impella 5.5 device is designed to be a percutaneous micro heart pump with integrated motors and sensors. Impella 5.5 delivers peak flows of greater than six liters per minute. A motor housing that is thinner and 45% shorter than the Impella 5.0 improves ease of pump insertion through the vasculature.

In September 2019, the Impella 5.5 device received FDA pre-market approval for safety and efficacy in the therapy of cardiogenic shock for up to 14 days in the U.S. The Impella 5.5 pump is being introduced in the U.S. through a controlled rollout at hospitals with established heart recovery protocols beginning in the third quarter of fiscal 2020. Impella 5.5 received CE marking approval in Europe in April 2018 and was introduced in Europe through a similar controlled rollout.

### Our Product Pipeline

#### Impella ECP™

The Impella ECP pump is designed for blood flow of greater than three liters per minute. It is intended to be delivered on a standard sized catheter and will include an expandable inflow in the left ventricle. We expect to conduct a first-in-human trial outside of the U.S. in calendar year 2020. The Impella ECP pump is still in development and has not been approved for commercial use or sale.

#### Impella BTR™

The Impella BTR device is designed to be a percutaneous micro heart pump with integrated motors and sensors. The Impella BTR device is designed to be smaller, provide up to one year of hemodynamic support and is expected to allow for greater than five liters of blood flow per minute. The Impella BTR device also includes a wearable driver designed for hospital discharge. The Impella BTR pump is still in development and has not been approved for commercial use or sale.

### Critical Accounting Policies and Estimates

Other than the accounting policy changes discussed in [“Note 2. Basis of Preparation and Summary of Significant Accounting Policies”](#) to our consolidated financial statements, which is incorporated herein by reference, there have been no significant changes in our critical accounting policies during the three and nine months ended December 31, 2019, as compared to the critical accounting policies disclosed in Management’s Discussion and Analysis of Financial Condition and Results of Operations included in our Annual Report on Form 10-K for the fiscal year ended March 31, 2019.

### Recently Issued Accounting Pronouncements Not Yet Effective

Information regarding recent accounting pronouncements is included in [“Note 2. Basis of Preparation and Summary of Significant Accounting Policies”](#) to our consolidated financial statements and is incorporated herein by reference.

### Results of Operations for the Three and Nine Months Ended December 31, 2019 compared with the Three and Nine Months Ended December 31, 2018

The following table sets forth certain condensed consolidated statements of operations data for the periods indicated as a percentage of total revenue:

	For the Three Months Ended December 31,		For the Nine Months Ended December 31,	
	2019	2018	2019	2018
Revenue	100.0	100.0	100.0	100.0
Costs and expenses as a percentage of total revenue:				
Cost of revenue	18.1	17.0	17.6	16.8
Research and development	11.6	11.9	11.6	12.1
Selling, general and administrative	38.7	40.0	40.6	42.8
Total costs and expenses	68.3	68.9	69.9	71.7
Income from operations	31.7	31.1	30.1	28.3
Other income (loss) and income tax provision (benefit)	0.5	8.7	(3.1)	(4.6)
Net income as a percentage of total revenue	31.2	22.4	27.0	32.9

## Revenue

The following table categorizes our revenue by products and services:

	For the Three Months Ended December 31,		For the Nine Months Ended December 31,	
	2019	2018	2019	2018
	(in \$000's)			
Impella product revenue	\$ 212,626	\$ 193,253	\$ 609,430	\$ 542,198
Service and other revenue	8,958	7,310	24,795	20,153
Total revenue	\$ 221,584	\$ 200,563	\$ 634,225	\$ 562,351

The following table categorizes our revenue by geographical location:

	For the Three Months Ended December 31,		For the Nine Months Ended December 31,	
	2019	2018	2019	2018
	(in \$000's)			
U.S. revenue	\$ 185,569	\$ 172,548	\$ 533,070	\$ 488,386
International revenue	36,015	28,015	101,155	73,965
Total revenue	\$ 221,584	\$ 200,563	\$ 634,225	\$ 562,351

Impella product revenue encompasses Impella 2.5, Impella CP, Impella 5.0, Impella LD, Impella RP, Impella 5.5 and Impella AIC product sales. Service and other revenue represents revenue earned on service maintenance contracts and preventative maintenance calls.

Total revenue for the three months ended December 31, 2019 increased by \$21.0 million, or 10%, to \$221.6 million from \$200.6 million for the three months ended December 31, 2018. Total revenue for the nine months ended December 31, 2019 increased \$71.8 million, or 13%, to \$634.2 million from \$562.4 million for the nine months ended December 31, 2018. The increase in total revenue was primarily due to higher Impella product revenue from increased utilization in the U.S., Europe, and Japan and the commercial launch of Impella 5.5 in the U.S. and Europe.

Impella product revenue for the three months ended December 31, 2019 increased by \$19.3 million, or 10%, to \$212.6 million from \$193.3 million for the three months ended December 31, 2018. Impella product revenue for the nine months ended December 31, 2019 increased \$67.2 million, or 12%, to \$609.4 million from \$542.2 million for the nine months ended December 31, 2018. Most of the increase in Impella product revenue was from increased device sales in the U.S., as we focus on increasing utilization of our disposable catheter products through continued investment in our field organization and physician training programs. Impella product revenue outside of the U.S. also increased primarily due to increased utilization in Germany and our continued launch of Impella in Japan. We expect worldwide revenue from our Impella devices to continue to increase with our recent PMA approvals in the U.S. and our continued focus on Impella device utilization outside of the U.S., with a primary focus on Germany and Japan.

Service and other revenue for the three months ended December 31, 2019 increased by \$1.7 million, or 23%, to \$9.0 million from \$7.3 million for the three months ended December 31, 2018. Service and other revenue for the nine months ended December 31, 2019 increased \$4.6 million, or 23%, to \$24.8 million from \$20.2 million for the nine months ended December 31, 2018. The increase in service revenue was primarily due to an increase in preventative maintenance service contracts. We have expanded the number of Impella AIC consoles at many of our existing higher volume customer sites and continue to sell additional consoles to new customer sites. We expect revenue growth for service revenue to be consistent with recent history as most of these using sites in the U.S. have service contracts that normally have three year terms.

## Costs and Expenses

### Cost of Revenue

Cost of revenue for the three months ended December 31, 2019 increased by \$6.0 million, or 18%, to \$40.0 million from \$34.0 million for the three months ended December 31, 2018. Gross margin was 82.0% for the three months ended December 31, 2019 and 83.0% for the three months ended December 31, 2018.

Cost of revenue for the nine months ended December 31, 2019 increased by \$17.2 million, or 18%, to \$111.9 million from \$94.7 million for the nine months ended December 31, 2018. Gross margin was 82.4% for the nine months ended December 31, 2019 and 83.2% for the nine months ended December 31, 2018.

The increase in cost of product revenue was related to higher demand for our Impella devices and higher production volume and costs to support demand for our Impella devices. The decrease in gross margin for the three and nine months ended December 31, 2019 was primarily due to increased investment in direct labor and overhead as we expand our manufacturing capacity in both our manufacturing facilities in the U.S. and Germany and our initial launch of Impella 5.5 and Impella CP SmartAssist, which enlists optical sensor technology in our pumps.

We expect that our ongoing investment in manufacturing capacity and the expansion of our Impella CP SmartAssist platform may decrease gross margin slightly in the near future.

#### **Research and Development Expenses**

Research and development expenses for the three months ended December 31, 2019 increased by \$1.7 million, or 7%, to \$25.7 million from \$24.0 million for three months ended December 31, 2018. Research and development expense for the nine months ended December 31, 2019 increased \$5.4 million, or 8%, to \$73.4 million from \$68.0 million for the nine months ended December 31, 2018. The increase in research and development expenses was primarily due to product development initiatives relating to our existing and pipeline products, such as optical sensor technology related to the development of Impella 5.5® and Impella ECPTM devices, the expansion of our engineering organization, increased clinical spending primarily related to our ongoing clinical studies, including the STEMI DTU pivotal randomized controlled trial, and our continued focus on quality initiatives for our Impella products.

We expect research and development expenses to continue to increase as we continue to increase clinical spending related to our ongoing and potential future clinical studies and as we continue to focus on engineering initiatives to improve our existing products and develop new technologies.

#### **Selling, General and Administrative Expenses**

Selling, general and administrative expenses for the three months ended December 31, 2019 increased by \$5.5 million, or 7%, to \$85.7 million from \$80.2 million for the three months ended December 31, 2018. Selling, general, and administrative expenses for the nine months ended December 31, 2019 increased \$17.4 million, or 7%, to \$257.7 million from \$240.3 million for the nine months ended December 31, 2018. The increase in selling, general and administrative expenses was primarily due to the hiring of additional field sales and clinical personnel in the U.S., Germany and Japan, increased spending on marketing initiatives as we continue to educate physicians on the benefits to patients of hemodynamic support with our Impella products, and legal expenses related to ongoing patent litigation and other legal matters discussed in “Note 13. Commitments and Contingencies” to our consolidated financial statements, partially offset by lower stock-based compensation expense.

We expect to continue to increase our expenditures on sales and marketing activities, with particular investments in field sales and clinical personnel with cath lab expertise to drive recovery awareness for acute heart failure patients. We also plan to increase our marketing, service and training investments in the U.S. for our Impella devices and as we continue our expansion in Germany, Japan and other new markets outside of the U.S. We expect to continue to have significant stock-based compensation expense in the future. We also expect to continue to incur significant legal expenses for the foreseeable future related to ongoing patent litigation, securities class action litigation and other legal matters discussed in “Note 13. Commitment and Contingencies” to our consolidated financial statements.

#### **Income Tax Provision**

Our income tax provision was \$27.8 million and \$19.6 million for the three months ended December 31, 2019 and 2018, respectively and our income tax provision was \$46.3 million for the nine months ended December 31, 2019 and an income tax benefit of \$20.2 million for the nine months ended December 31, 2018. Our effective tax rate was 28.7% and 30.5% for the three months ended December 31, 2019 and 2018, respectively, and 21.3% and (12.3)% for the nine months ended December 31, 2019 and 2018, respectively. The increase in the effective income tax rate was due primarily to lower excess tax benefits recognized associated with stock-based awards of \$0.5 million and \$1.7 million as an income tax benefit for the three months ended December 31, 2019 and 2018, respectively, and of \$13.8 million and \$68.5 million recorded as an income tax benefit for the nine months ended December 31, 2019 and 2018, respectively. These recognized excess tax benefits resulted from restricted stock units that vested or stock options that were exercised during the three and nine months ended December 31, 2019, respectively.

#### **Net Income**

For the three months ended December 31, 2019, net income was \$69.2 million, or \$1.53 per basic share and \$1.51 per diluted share, compared to \$44.9 million, or \$1.00 per basic share and \$0.97 per diluted share, for three months ended December 31, 2018. For the nine months ended December 31, 2019, net income was \$171.2 million, or \$3.79 per basic share and \$3.73 per diluted share, compared to \$185.1 million, or \$4.13 per basic share and \$4.01 per diluted share for the nine months ended December 31, 2018.



Our net income for three and nine months ended December 31, 2019 was also driven by higher Impella product revenue due to greater utilization of our Impella devices and our focus on managing expenses in line with revenues.

Net income for the three months ended December 31, 2019 included excess tax benefits related to stock-based awards of \$0.5 million, or \$0.01 per basic and diluted share, and a \$17.8 million unrealized gain, net of tax, or \$0.39 per basic and diluted share, related to our investment in Shockwave Medical. Net income for the nine months ended December 31, 2019 included excess tax benefits related to stock-based awards of \$13.8 million, or \$0.30 per basic and diluted share, and a \$13.3 million unrealized gain, net of tax, or \$0.29 per basic and diluted share, related to our investment in Shockwave Medical. Net income for the three months ended December 31, 2018, included excess tax benefits of \$1.7 million, or \$0.04 per basic share and diluted share. Net income for the nine months ended December 31, 2018 included excess tax benefits of \$68.5 million, or \$1.53 per basic share and \$1.48 per diluted share.

#### Liquidity and Capital Resources

At December 31, 2019, our total cash, cash equivalents and marketable securities totaled \$595.5 million, an increase of \$82.1 million compared to \$513.4 million at March 31, 2019. The increase in our cash, cash equivalents and marketable securities during the nine months ended December 31, 2019 was primarily due to cash flows provided by operating activities offset by cash used to fund our stock repurchase program, annual bonuses, taxes paid related to net settlement of vesting of stock awards during the period and purchases of property and equipment.

Following is a summary of our cash flow activities:

	For the Nine Months Ended December 31,	
	2019	2018
Net cash provided by operating activities	\$ 228,327	\$ 181,806
Net cash used for by investing activities	(135,416)	(80,701)
Net cash used for financing activities	(95,950)	(58,794)
Effect of exchange rate changes on cash	(12)	(1,105)
Net (decrease) increase in cash and cash equivalents	\$ (3,051)	\$ 41,206

#### Cash Provided by Operating Activities

For the nine months ended December 31, 2019, cash provided by operating activities consisted of net income of \$171.2 million, adjustments for non-cash items of \$70.2 million and cash used in working capital of \$13.1 million. The change in net income was primarily due to higher revenue from increased utilization of our Impella devices and an unrealized gain related to our investment in Shockwave Medical. Adjustments for non-cash items consisted primarily of \$37.0 million of stock-based compensation expense, \$30.6 million in deferred tax provision, \$14.4 million of depreciation and amortization expense, \$2.7 million in accretion on marketable securities, and \$4.0 million in inventory and other write-downs. The change in cash from working capital included a \$13.3 million increase in inventory to support demand for our Impella devices, \$10.3 million increase in accounts receivable due to timing of collections offset by a \$12.0 million increase in accounts payable and accrued expenses and a \$2.8 million increase in deferred revenue.

For the nine months ended December 31, 2018, cash provided by operating activities consisted of net income of \$185.1 million, adjustments for non-cash items of \$29.8 million and cash used in working capital of \$33.1 million. The increase in net income was primarily due to higher revenue from increased utilization of our Impella devices. Adjustments for non-cash items consisted primarily of \$43.8 million of stock-based compensation expense, a \$26.0 million change in deferred tax provision, \$9.9 million of depreciation and amortization expense, \$3.2 million in inventory and other write-downs, and \$1.6 million in accretion on marketable securities. Cash used in working capital consisted of a \$19.3 million increase in accounts receivable due to increased sales and a \$26.5 million increase in inventory to support growing demand for our Impella devices, offset by an \$11.8 million increase in accounts payable and accrued expenses primarily due to increased expenditures.

#### Cash Used for Investing Activities

For the nine months ended December 31, 2019, net cash used for investing activities primarily consisted of \$81.1 million in maturities (net of purchases) of marketable securities and \$33.5 million used in the purchase of property and equipment primarily related to continued expansion of manufacturing capacity, office space and research development facilities in Danvers and Aachen, Germany. We invested an additional \$20.9 million of investments in other assets and intangible assets during fiscal 2020.

For the nine months ended December 31, 2018, net cash used for investing activities primarily consisted of \$14.8 million in maturities (net of purchases) of marketable securities and \$35.5 million for the purchase of property and equipment primarily related to continued expansion of manufacturing capacity, office space and research development facilities in Danvers, Massachusetts and Aachen, Germany. We also made \$30.4 million of investments in other assets and intangible assets.

#### **Cash Used for Financing Activities**

For the nine months ended December 31, 2019, net cash used for financing activities included \$41.6 million in payments in lieu of issuance of common stock for payroll withholding taxes upon vesting of certain equity awards and \$59.9 million for the repurchase of our common stock. These amounts were offset by \$3.2 million in proceeds from the exercise of stock options and \$2.4 million in proceeds from the issuance of stock under the employee stock purchase plan.

For the nine months ended December 31, 2018, net cash used for financing activities included \$71.2 million in payments in lieu of issuance of common stock for payroll withholding taxes upon vesting of certain equity awards. This amount was offset by \$11.0 million in proceeds from the exercise of stock options and \$1.4 million in proceeds from the issuance of stock under the employee stock purchase plan.

#### **Operating Capital and Liquidity Requirements**

We believe that cash receipts from our revenue together with existing resources will be sufficient to fund our operations for at least the next twelve months, exclusive of activities involving any future acquisitions of products or companies that complement or augment our existing line of products.

Our primary liquidity requirements are to fund the expansion of our commercial and operational infrastructure, increase our manufacturing capacity, increase our inventory levels in order to meet growing customer demand for our Impella devices, fund new product development initiatives, continue our controlled commercial launch of Impella devices in Japan and expand to potential new markets, increase clinical spending, cover legal expenses related to ongoing patent litigation, cover payments in lieu of issuing of common stock for payroll withholding taxes upon vesting of certain equity awards, fund our stock repurchase program, fund business development initiatives and provide for general working capital needs. To date, we have primarily funded our operations through product sales and, to a lesser extent the sale of equity securities.

Capital expenditures for fiscal 2020 are estimated to range from \$40 million to \$60 million, including additional capital expenditures for manufacturing capacity expansions in our Danvers and Aachen facilities, additional office space, building and leasehold improvements and information systems development projects.

Our liquidity is influenced by our ability to sell our products in a competitive industry and our customers' ability to pay for our products. Factors that may affect liquidity include our ability to penetrate the market for our products, our ability to maintain or reduce the length of the selling cycle for our products, capital expenditures, investments in collaborative arrangements with other partners, and our ability to collect cash from customers after our products are sold. We also expect to continue to incur legal expenses for the foreseeable future related to ongoing patent litigation and other legal matters. We continue to review our short-term and long-term cash needs on a regular basis. At December 31, 2019 we had no long-term debt outstanding.

In August 2019, our Board of Directors authorized a stock repurchase program for up to \$200 million of shares of its common stock. Under this stock repurchase program, we are authorized to repurchase shares through open market purchases, privately negotiated transactions or otherwise in accordance with applicable federal securities laws, including through Rule 10b5-1 trading plans and under Rule 10b-18 of the Exchange Act. The stock repurchase program has no time limit and may be suspended for periods or discontinued at any time. The Company is funding the stock repurchase program with its available cash and marketable securities. Through December 31, 2019, the Company has repurchased a total of 318,361 shares for \$59.9 million under the stock repurchase program. The remaining authorization under the stock repurchase program was \$140.1 million as of December 31, 2019.

The following table provides share repurchase activities:

	<b>For the Three Months Ended December 31,</b>		<b>For the Nine Months Ended December 31,</b>	
	<b>2019</b>	<b>2018</b>	<b>2019</b>	<b>2018</b>
Shares repurchased	137,432	—	318,361	—
Average price per share	\$181.94	—	\$188.08	—
Value of shares repurchased (in millions)	\$25.0	—	\$59.9	—

Marketable securities at December 31, 2019 and March 31, 2019 consisted of \$477.6 million and \$392.4 million, respectively, held in investment funds that are invested in U.S. Treasury, government-backed and corporate debt securities, and commercial paper. As of December 31, 2019, the Company is not a party to any interest rate swaps and have no exposure to auction rate securities markets.

Cash and cash equivalents held by our foreign subsidiaries totaled \$20.9 million and \$25.2 million at December 31, 2019 and March 31, 2019, respectively. Our operating income outside the U.S. is deemed to be permanently reinvested in foreign jurisdictions. Since most of our cash and cash equivalents held by foreign subsidiaries which are disregarded entities for domestic tax purposes, any repatriation of foreign subsidiary earnings to the U.S. would likely have a nominal tax impact.

***Off-Balance Sheet Arrangements***

We had no off-balance sheet arrangements or guarantees of third-party obligations during the periods presented. An “off-balance sheet arrangement” generally entails a transaction, agreement or other contractual arrangement to which an entity unconsolidated with us, is a party under which we have any obligation arising under a guarantee contract, derivative instrument or variable interest or a retained or contingent interest in assets transferred to such entity or similar arrangement that serves as credit, liquidity or market risk support for such assets.

***Contractual Obligations and Commercial Commitments***

We have various contractual obligations, which are recorded as liabilities in our consolidated condensed financial statements. Other items are not recognized as liabilities in our consolidated condensed financial statements but are required to be disclosed. There have been no material changes, outside of the ordinary course of business, to our contractual obligations as previously disclosed in our Annual Report on Form 10-K for the fiscal year ended March 31, 2019.

**ITEM 3: QUANTITATIVE AND QUALITATIVE DISCLOSURE ABOUT MARKET RISK**

There have been no material changes to our quantitative and qualitative disclosures about market risk as compared to the quantitative and qualitative disclosures about market risk described in our Annual Report on Form 10-K for the fiscal year ended March 31, 2019.

**ITEM 4. CONTROLS AND PROCEDURES**

***Evaluation of Disclosure Controls and Procedures***

Our management, with the participation of our principal executive officer and principal financial officer, has evaluated the effectiveness of our disclosure controls and procedures (as defined in Rule 13a-15(e) under the Exchange Act), as of December 31, 2019. Based on this evaluation, our principal executive officer and principal financial officer concluded that, as of December 31, 2019, these disclosure controls and procedures were effective to provide reasonable assurance that material information required to be disclosed by us, including our consolidated subsidiaries, in reports that we file or submit under the Exchange Act, is recorded, processed, summarized and reported, within the time periods specified in SEC rules and forms. Disclosure controls and procedures include, without limitation, controls and procedures designed to ensure that information required to be disclosed by us in the reports that we file or submit under the Exchange Act is accumulated and communicated to our management, including our principal executive officer and principal financial officer, as appropriate to allow timely decisions regarding required disclosure.

***Changes in Internal Control over Financial Reporting***

During the third quarter of our fiscal year ending March 31, 2020, there were no changes in our internal control over financial reporting that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

**ITEM 1. LEGAL PROCEEDINGS**

We are from time to time involved in various legal actions, the outcomes of which are not within our complete control and may not be known for prolonged periods of time. In some actions, the claimants seek damages, as well as other relief, which, if granted, would require significant expenditures and could impair our business and results of operations. Material legal proceedings are discussed in [“Note 13. Commitments and Contingencies”](#) to our condensed consolidated financial statements and such information is incorporated herein by reference.

**ITEM 1A. RISK FACTORS**

Investing in our common stock involves a high degree of risk. In addition to the other information set forth in this Report, you should carefully consider the factors discussed in Part I, “Item 1A. Risk Factors” in our Annual Report on Form 10-K for the year ended March 31, 2019, which could materially affect our business, financial condition or future results. As of the date of this Report, there has been no material change in any of the risk factors described in our Annual Report on Form 10-K for the fiscal year ended March 31, 2019, other than with respect to the below.

**Risks Related to Our Business*****Environmental and health safety laws may result in liabilities, expenses and restrictions on our operations.***

Federal, state, local and foreign laws regarding environmental protection, hazardous substances and human health and safety may adversely affect our business. Using hazardous substances in our operations exposes us to the risk of accidental injury, contamination or other liability from the use, storage, importation, handling or disposal of hazardous materials. If our or our suppliers’ operations result in pollution of the environment or expose individuals to hazardous substances, we could be liable for damages, expenses, and fines, and any liability could significantly exceed our insurance coverage and have a material adverse effect on our financial condition. Additionally, increased costs on our suppliers stemming from compliance with new or existing environmental or health safety laws and regulations may adversely affect us, as such laws and regulations could result in operational impacts, including facility shutdowns. Suppliers may also choose to pass compliance costs to us in the form of adjusted pricing.

Recent and any future environmental regulatory action regarding medical device sterilization may adversely impact us in the ways described above. Many of our products require sterilization prior to sale, and we contract with third-party sterilizers to perform this service, including ethylene oxide sterilizers. On November 6, 2019, the U.S. Environmental Protection Agency (the “EPA”) proposed amendments to the Miscellaneous Organic Chemical Manufacturing National Emission Standards for Hazardous Air Pollutants to reduce hazardous air pollutants, including emissions of ethylene oxide, by adding requirements for process vents, storage tanks and equipment in ethylene oxide service. Additional regulation to address ethylene oxide emissions at sterilization facilities is expected, including revisions to the EPA’s Ethylene Oxide Emissions Standards for Sterilization Facilities: National Emission Standards for Hazardous Air Pollutants. In addition, as of the date of this Report, state agencies have shut down and/or temporarily suspended operations at ethylene oxide sterilization facilities in Illinois, Michigan and Georgia. The FDA has voiced concerns that these shutdowns may diminish the supply of available sterilization facilities and cause medical device shortages. While the facilities shut down or suspended to date do not sterilize our products and are not otherwise in our supply chain, and our suppliers are not affected directly by these recent regulatory actions, increased scrutiny and regulation of ethylene oxide sterilization facilities in the U.S. could create additional costs for our suppliers, who may be required to take steps with respect to their sterilization processes. These costs could, in turn, be passed on to us and adversely affect our business. Also, to the extent we or our contract sterilizers are unable to sterilize our products, whether due to these regulatory or other constraints (such as capacity or availability of materials for sterilization), we may be unable to transition to other contract sterilizers, sterilizer locations or sterilization methods in a timely or cost effective manner, or at all. This failure to transition our processes due to decreased third-party sterilization capacity could have a materially adverse impact on our results of operations and financial condition.

We maintain insurance for certain environmental risks, subject to deductibles; however, we cannot assure that we can continue to maintain this insurance in the future at an acceptable cost or at all. Future changes to environmental and health safety laws could cause us to incur additional expenses or restrict our operations.

**Risks Related to Our Common Stock*****The market price of our common stock is volatile, which has in the past led to and may in the future lead to securities litigation against us. Such litigation may be costly and result in an adverse outcome.***

The market price of our common stock has fluctuated widely and may continue to do so. Many factors could cause the market price of our common stock to rise and fall. Some of these factors are:

- variations in our quarterly results of operations;
- status of regulatory approvals for our products;
- announcements by the FDA relating to our products and their impact on market perception of our product, including short-term impact;

- reputational risk relating to customer reviews of our products;
- introduction of new products by us or our competitors;
- acquisitions or strategic alliances involving us or our competitors;
- changes in healthcare policy or third-party reimbursement practices;
- changes in estimates of our performance or recommendations by securities analysts;
- the hiring or departure of key personnel;
- results of clinical trials of our products;
- notice of a recall or other safety issue that impacts the ability for customers to use our products;
- future sales of shares of common stock in the public market; and
- the outcome of currently pending litigation and governmental investigations, or the initiation of additional litigation or government investigations against the company; and market conditions in the industry, particularly around reimbursement for our products and the economy as a whole.

In addition, the stock market in general and the market for shares of medical device companies in particular have experienced extreme price and volume fluctuations in recent years. These fluctuations are often unrelated to the operating performance of individual companies. These broad market fluctuations may adversely affect the market price of our common stock. When the market price of a company's stock drops significantly, stockholders often institute securities class action litigation against that company. For instance, in August 2019, two purported class action complaints were filed against us and certain of our officers in the U.S. District Court for the Southern District of New York ("SDNY") by an alleged purchaser of the Company's common stock, on behalf of the plaintiffs themselves and persons or entities that purchased or acquired the Company's securities relating to allegedly misleading disclosures made by us regarding our financial condition and results of operations. In November 2019, two shareholders filed derivative actions in the SDNY that were subsequently consolidated, and another shareholder filed a derivative action in Massachusetts Suffolk County Superior Court. In January 2020, another shareholder derivative action was filed in the U.S. District Court for the District of Delaware. The complaints in these actions rely on many of the same allegations as in the securities class actions. For additional discussion, see "[Note 13. Commitment and Contingencies – Contingencies](#)" to our consolidated financial statements in this report, which is incorporated by reference into this item.

We are generally obliged under our bylaws, to the extent permitted under Delaware law, to indemnify our current and former officers who are named as defendants in these types of lawsuits. While a certain amount of insurance coverage is available for expenses or losses associated with these lawsuits, this coverage may not be sufficient. Based on information currently available, we are unable to estimate reasonably a possible loss or range of possible losses, if any, with regard to the class action litigation; therefore, no litigation reserve has been recorded in our consolidated balance sheet. Although we plan to defend against the class action litigation vigorously, there can be no assurances that a favorable final outcome will be obtained. This litigation and other future litigation against us could cause us to incur substantial costs, divert the time and attention of our management and other resources, or otherwise harm our business.

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

- (a) Not applicable.
- (b) Not applicable.
- (c) The following table provides information about our repurchases of shares of our common stock during the quarter ended December 31, 2019. During that period, we did not act in concert with any affiliate or any other person to acquire any of our common stock and, accordingly, we do not believe that purchases by any such affiliate or other person (if any) are reportable in the following table.

Period	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 Maximum of Shares that May Yet Be Purchased Under the Plans or Programs (in \$000's)
October 1-31, 2019	104,266	\$173.30	104,266	\$147,057
November 1-30, 2019	33,166	209.1	33,166	140,122
December 1-31, 2019	—	—	—	140,122
Total	137,432	(2) \$181.94	137,432	(2) \$140,122 (1)

- (1) In August 2019, the Company's Board of Directors authorized a stock repurchase program of up to \$200.0 million of shares of its common stock. The repurchase program was announced on August 1, 2019 and has no expiration date and may be suspended or discontinued at any time. Through December 31, 2019, the Company has repurchased a total of 318,361 shares for \$59.9 million under the stock repurchase program in open market purchases. The remaining authorization under the stock repurchase program was \$140.1 million as of December 31, 2019.
- (2) The Company's policy is to consider shares to have been repurchased upon the settlement date of the transaction, which is typically three days subsequent to the trading date.

**ITEM 3. DEFAULTS UPON SENIOR SECURITIES**

None.

**ITEM 4. MINE SAFETY DISCLOSURES**

None.

**ITEM 5. OTHER INFORMATION**

(a) *Item 5.03. Amendments to Articles of Incorporation or Bylaws; Change in Fiscal Year.*

On February 4, 2020, the Company's board of directors (the "Board") adopted amendments to the Company's Amended and Restated By-laws (the "By-laws," and as so amended, the "Amended By-laws"), effectively immediately, to change the requirements under which stockholders may (i) nominate persons for election to the Board or bring business before an annual meeting of stockholders and (ii) nominate persons for election to the Board at a special meeting of stockholders called by the Board for that purpose, in each case, without including such matters in the Company's proxy materials. As amended, nominations and notices of other business to be brought before an annual meeting must be received at the Company's principal executive offices not more than 120 days nor less than 90 days prior to the anniversary date of the immediately preceding annual meeting. Director nominations for a special meeting must be received at the Company's principal executive offices not more than 120 days prior to the scheduled date of the special meeting nor less than (i) 90 days prior to the scheduled date of the special meeting or (ii) 10 days following the date on which the Company publicly announces the special meeting. In addition, the amendments to the By-laws expand upon the procedural requirements applicable to stockholders who wish to nominate director candidates or propose other business at a meeting of stockholders, by adding certain customary informational and other requirements regarding the proposing stockholder and any director nominee. The Board made the amendments to the timing and other procedural requirements for stockholder nominations and proposals of other business to align them with peer company norms. The Board also enacted amendments to the provisions of the By-laws that permit the Board to act unanimously without a meeting, by clarifying that Board members may consent to such action by electronic transmission, and made certain other immaterial conforming amendments.

The foregoing summary of the amendments to the By-laws is qualified in its entirety by reference to the Amended By-laws, a copy of which is filed with this Quarterly Report as [Exhibit 3.2.1](#) and incorporated in this Part II, Item 5 by reference. Additionally, a copy of the Amended By-laws, marked to show changes to the By-laws, is also included as [Exhibit 3.2.2](#) hereto (additions are underlined and deletions are struck through) and incorporated herein by reference.

(b) See Item 5(a) above, which supplements the disclosure on the consideration of stockholder nominees for election to the Board in the Company's proxy statement on Schedule 14A, filed with the SEC on June 25, 2019.

Exhibit No.	Description	Filed with This Form 10-Q	Incorporated by Reference		
			Form	Filing Date	Exhibit No.
3.1	<a href="#">Restated Certificate of Incorporation</a>		S-3	September 29, 1997	3.1
3.2.1	<a href="#">Amended &amp; Restated By-Laws, as Amended and Restated February 4, 2020</a>	X			
3.2.2	<a href="#">Amended &amp; Restated By-Laws, as Amended and Restated February 4, 2020 (Marked)</a>	X			
3.3	<a href="#">Amendment to the Company's Restated Certificate of Incorporation to increase the authorized shares of common stock from 25,000,000 to 100,000,000</a>		8-K	March 21, 2007 (File No. 001-09585)	3.4
31.1	<a href="#">Rule 13a—14(a)/15d—14(a) certification of principal executive officer</a>	X			
31.2	<a href="#">Rule 13a—14(a)/15d—14(a) certification of principal accounting officer</a>	X			
32.1	<a href="#">Section 1350 certification</a>	X			
101	The following financial information from the ABIOMED, Inc. Quarterly Report on Form 10-Q for the quarter ended December 31, 2019, formatted in inline Extensible Business Reporting Language (XBRL): (i) Condensed Consolidated Balance Sheets as of December 31, 2019 and March 31, 2019; (ii) Condensed Consolidated Statements of Operations for the three and nine months ended December 31, 2019 and 2018; (iii) Condensed Consolidated Statements of Comprehensive Income for the three and nine months ended December 31, 2019 and 2018; (iv) Condensed Consolidated Statements of Cash Flows for the nine months ended December 31, 2019 and 2018; and (v) Notes to Condensed Consolidated Financial Statements.	X			
104*	Cover page from the ABIOMED, Inc. Quarterly Report on Form 10-Q for the quarter ended December 31, 2019, formatted in iXBRL and contained in Exhibit 101.	X			



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.

ABIOMED, Inc.

Date: February 6, 2020

/s/ TODD A. TRAPP

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Todd A. Trapp  
Vice President and Chief Financial Officer

**Amended and Restated  
By-Laws  
Of  
ABIOMED, Inc.  
A Delaware Corporation  
As Amended and Restated February 4, 2020**

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**By-Laws  
OF  
ABIOMED, Inc.  
(A Delaware Corporation) (the "Corporation" or the "corporation")**

**ARTICLE I.  
Stockholders**

**Annual Meeting**

. An annual meeting of the stockholders for the election of directors to succeed those whose terms expire and for the transaction of such other business as may properly come before the meeting shall be held at the place, if any, within or without the State of Delaware, on the date and at the time that the board of directors shall each year fix. Unless stated otherwise in the notice of the annual meeting of the stockholders of the corporation, such annual meeting shall be at the principal office of the corporation.

**Special Meetings**

. Special meetings of the stockholders may be called at any time by the chairman of the board of directors, the president or by the board of directors. Special meetings of the stockholders shall be held at such time, date and place within or outside of the State of Delaware as may be designated in the notice of such meeting. Only such business shall be conducted at a special meeting of stockholders as shall have been brought before the meeting pursuant to the notice of meeting.

**Notice of Meeting**

. A written notice stating the place, date, and hour of each meeting of the stockholders, and, in the case of a special meeting, the purposes for which the meeting is called, shall be given to each stockholder entitled to vote at such meeting, and to each stockholder who, under the Certificate of Incorporation or these By-laws, is entitled to such notice, by delivering such notice to such person or leaving it at their residence or usual place of business, or by mailing it, postage prepaid, and addressed to such stockholder at his address as it appears upon the books of the corporation, at least ten (10) days and not more than sixty (60) before the meeting. Such notice shall be given by the secretary, an assistant secretary, or any other officer or person designated either by the secretary or by the person or persons calling the meeting.

The requirement of notice to any stockholder may be waived by a written waiver of notice, executed before or after the meeting by the stockholder or his attorney thereunto duly authorized, and filed with the records of the meeting, or if communication with such stockholder is unlawful, or by attendance at the meeting without protesting prior thereto or at its commencement the lack of notice. A waiver of notice of any regular or special meeting of the stockholders need not specify the purposes of the meeting.

If a meeting is adjourned to another time or place, notice need not be given of the adjourned meeting if the time and place are announced at the meeting at which the adjournment is taken, except that if the adjournment is for more than thirty days, or if after the adjournment a new record date is fixed for the adjourned meeting, notice of the adjourned meeting shall be given to each stockholder of record entitled to vote at the meeting.

**Quorum**

. The holders of a majority in interest of all stock issued, outstanding and entitled to vote at a meeting shall constitute a quorum. Any meeting may be adjourned from time to time by a majority of the votes properly cast upon the question, whether or not a quorum is present.

**Voting and Proxies**

. Stockholders shall have one vote for each share of stock entitled to vote owned by them of record according to the books of the corporation, unless otherwise provided by law or by the Certificate of Incorporation. Stockholders may vote either in person or by written proxy, but no proxy shall be voted or acted upon after three years from its date, unless the proxy provides for a longer period. Proxies shall be filed with the secretary of the meeting, or of any adjournment thereof. Except as otherwise limited therein, proxies shall entitle the persons authorized thereby to vote at any

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adjournment of such meeting. A proxy purporting to be executed by or on behalf of a stockholder shall be deemed valid unless challenged at or prior to its exercise and the burden of proving invalidity shall rest on the challenger. A proxy with respect to stock held in the name of two or more persons shall be valid if executed by one of them unless at or prior to exercise of the proxy the corporation receives a specific written notice to the contrary from any one of them.

#### **Action at Meeting**

. When a quorum is present at any meeting, a plurality of the votes properly cast for election to any office shall elect to such office, and a majority of the votes properly cast upon any question other than election to an office shall decide such question, except where a larger vote is required by law, the Certificate of Incorporation or these by-laws. No ballot shall be required for any election unless requested by a stockholder present or represented at the meeting and entitled to vote in the election.

#### **Action Without Meeting**

. No action required to be taken or which may be taken at any annual or special meeting of stockholders of the Corporation may be taken by stockholders without a meeting, and the power of stockholders to consent in writing, without a meeting, to the taking of any action is specifically denied.

#### **Voting of Shares of Certain Holders**

. Shares of stock of the corporation standing in the name of another corporation, domestic or foreign, may be voted by such officer, agent, or proxy as the by-laws of such corporation may prescribe, or, in the absence of such provision, as the board of directors of such corporation may determine.

Shares of stock of the corporation standing in the name of a deceased person, a minor ward or an incompetent person, may be voted by his administrator, executor, court-appointed guardian or conservator without a transfer of such shares into the name of such administrator, executor, court appointed guardian or conservator. Shares of capital stock of the corporation standing in the name of a trustee may be voted by him.

Shares of stock of the corporation standing in the name of a receiver may be voted by such receiver, and shares held by or under the control of a receiver may be voted by such receiver without the transfer thereof into his name if authority so to do be contained in an appropriate order of the court by which such receiver was appointed.

A stockholder whose shares are pledged shall be entitled to vote such shares until the shares have been transferred into the name of the pledgee, and thereafter the pledgee shall be entitled to vote the shares so transferred.

Shares of its own stock belonging to this corporation shall not be voted, directly or indirectly, at any meeting and shall not be counted in determining the total number of outstanding shares at any given time, but shares of its own stock held by the corporation in a fiduciary capacity may be voted and shall be counted in determining the total number of outstanding shares.

#### **Stockholder Lists**

. The secretary (or the corporation's transfer agent or other person authorized by these By-laws or by law) shall prepare and make, at least ten days before every meeting of stockholders, a complete list of the stockholders entitled to vote at the meeting, arranged in alphabetical order, and showing the address of each stockholder and the number of shares registered in the name of each stockholder. Such list shall be open to the examination of any stockholder, for any purpose germane to the meeting, during ordinary business hours, for a period of at least ten days prior to the meeting, either at a place within the city where the meeting is to be held, which place shall be specified in the notice of the meeting, or, if not so specified, at the place where the meeting is to be held. The list shall also be produced and kept at the time and place of the meeting during the whole time thereof, and may be inspected by any stockholder who is present.

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**ARTICLE II.**  
**Board of Directors**

**Definitions**

1) . For purposes of this Article II, the following terms shall have the meanings indicated:

- (a) **“Proposing Person”** means any of the following persons: (i) the stockholder of record providing the notice of nominations or business proposed to be brought before a stockholders’ meeting, (ii) the beneficial owner(s), if different, on whose behalf the nominations or business proposed to be brought before a stockholders’ meeting is made and (iii) any affiliate or associate of such stockholder of record or beneficial owner.
  - (b) **“Public Announcement”** means disclosure in a press release reported by the Dow Jones News Service, Associated Press or comparable national news service or in a document publicly filed by the Corporation with the Securities and Exchange Commission pursuant to Section 13, 14 or 15(d) of the Securities Exchange Act of 1934, as amended (the **“Exchange Act”**).
  - (c) **“Solicitation Statement”** means a statement whether or not the stockholder giving the notice and/or the other Proposing Person(s), if any, will deliver a proxy statement and form of proxy to holders of, in the case of a business proposal, at least the percentage of voting power of all of the shares of capital stock of the Corporation required under applicable law to approve the proposal or, in the case of a nomination or nominations, at least the percentage of voting power of all of the shares of capital stock of the Corporation reasonably believed by such Proposing Person to be sufficient to elect the nominee or nominees proposed to be nominated by such Proposing Person.
  - (d) **“Synthetic Equity Interest”** means any transaction, agreement or arrangement (or series of transactions, agreements or arrangements), including, without limitation, any derivative, swap, hedge, repurchase or so-called “stock borrowing” agreement or arrangement, the purpose or effect of which is to, directly or indirectly: (i) give a person or entity economic benefit and/or risk similar to ownership of shares of any class or series of capital stock of the Corporation, in whole or in part, including due to the fact that such transaction, agreement or arrangement provides, directly or indirectly, the opportunity to profit or avoid a loss from any increase or decrease in the value of any shares of any class or series of capital stock of the Corporation, (ii) mitigate loss to, reduce the economic risk of or manage the risk of share price changes for, any person or entity with respect to any shares of any class or series of capital stock of the Corporation, (iii) otherwise provide in any manner the opportunity to profit or avoid a loss from any decrease in the value of any shares of any class or series of capital stock of the Corporation, or (iv) increase or decrease the voting power of any person or entity with respect to any shares of any class or series of capital stock of the Corporation.
  - (e) **“Timely Notice”** means a Proposing Person’s written notice, which shall be received by the secretary of the Corporation at the principal executive offices of the Corporation not later than the close of business on the ninetieth (90th) day nor earlier than the close of business on the one hundred twentieth (120th) day prior to the one-year anniversary of the preceding year’s annual meeting of stockholders; provided, however, that in the event the annual meeting of stockholders is held more than thirty (30) days before or more than sixty (60) days after such anniversary date, or if no annual meeting of stockholders was held in the preceding year, to be timely, the notice by the Proposing Person must be received by the secretary of the Corporation at the principal executive offices of the Corporation not
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later than the close of business on the later of the ninetieth (90th) day prior to the scheduled date of such annual meeting of stockholders or the tenth (10th) day following the day on which Public Announcement of the date of such meeting is first made.

#### **Powers**

Except as reserved to the stockholders by law, by the Certificate of Incorporation or by these By-laws, the business of the corporation shall be managed under the direction of the board of directors, who shall have and may exercise all of the powers of the corporation. In particular, and without limiting the foregoing, the board of directors shall have the power to issue or reserve for issuance from time to time the whole or any part of the capital stock of the corporation which may be authorized from time to time to such person, for such consideration and upon such terms and conditions as they shall determine, including the granting of options, warrants or conversion or other rights to stock.

#### **Number of Directors: Qualifications**

The board of directors shall consist of such number of directors, not less than 3 nor more than 12, as shall be fixed initially by the incorporator(s) and thereafter by the board of directors. No director need be a stockholder.

#### **Nomination of Directors; Proposals for Other Business**

##### **(a) Annual Meetings of Stockholders.**

(1) Nominations for the election of directors or proposals for other business to be brought before an annual meeting of stockholders may, in each case, be made at an annual meeting of stockholders only (i) if brought before the meeting by the Corporation and specified in the Corporation's notice of meeting delivered pursuant to Section 1.3, (ii) if brought before such annual meeting by or at the direction of the board of directors or (iii) if brought before such annual meeting by any stockholder who (a) is entitled to vote for the election of directors at the meeting, (b) was a stockholder of record (and, with respect to any beneficial owner, if different, on whose behalf any nomination or proposal for other business is made, only if such beneficial owner of shares of stock of the Corporation) at the time of giving of notice provided for in these By-laws and at the time of such annual meeting, (c) is present (in person or by proxy) at the meeting and (d) complies with the notice procedures set forth in these By-laws as to such nomination or proposal for other business. For the avoidance of doubt, other than matters properly brought under Rule 14a-8 (or any successor rule) under the Exchange Act, the foregoing sentence shall describe the exclusive means for a stockholder to bring nominations or other business before an annual meeting, and such stockholder must comply with the notice and other procedures set forth in this Section 2.4 to bring such nominations or other business properly before an annual meeting of stockholders.

(2) For nominations or other business to be properly brought before an annual meeting of stockholders by a stockholder pursuant to Section 2.4(a)(1)(iii) above, the Proposing Person must (i) have given Timely Notice thereof in writing and in proper form, delivered or mailed by first class United States mail, postage prepaid, to the secretary of the Corporation and (ii) have provided any updates or supplements to such notice at the times and in the forms required by this Section 2.4. In no event shall any adjournment of an annual meeting of stockholders or the announcement thereof commence a new time period (or extend any time period) for the giving of a stockholder's notice. To be in proper form, such stockholder's Timely Notice shall set forth:

(A) as to each Proposing Person:

(i) (a) the name and address of the Proposing Person giving the notice (including, if applicable, as they appear on the Corporation's books); (b)



the class or series and number of all shares of capital stock of the Corporation which are, directly or indirectly, owned of record or beneficially (for purposes of these By-laws, as such term is defined in Rule 13d-3 promulgated under the Exchange Act) by such Proposing Person or any of its affiliates or associates (for purposes of these By-laws, as such terms are defined in Rule 12b-2 promulgated under the Exchange Act), including any shares of any class or series of capital stock of the Corporation as to which such Proposing Person or any of its affiliates or associates has a right to acquire beneficial ownership at any time in the future; (c) all Synthetic Equity Interests (as defined below) in which such Proposing Person or any of its affiliates or associates, directly or indirectly, holds an interest including a description of the material terms of each such Synthetic Equity Interest, including without limitation, identification of the counterparty to each such Synthetic Equity Interest and disclosure, for each such Synthetic Equity Interest, as to (1) whether or not such Synthetic Equity Interest conveys any voting rights, directly or indirectly, in such shares to such Proposing Person, (2) whether or not such Synthetic Equity Interest is required to be, or is capable of being, settled through delivery of such shares and (3) whether or not such Proposing Person and/or, to the extent known, the counterparty to such Synthetic Equity Interest has entered into other transactions that hedge or mitigate the economic effect of such Synthetic Equity Interest; (d) any proxy (other than a revocable proxy given in response to a public proxy solicitation made pursuant to, and in accordance with, Section 14(a) of the Exchange Act by way of a solicitation statement filed on Schedule 14A), agreement, arrangement, understanding or relationship pursuant to which such Proposing Person has or shares a right to, directly or indirectly, vote any shares of any class or series of capital stock of the Corporation; (e) any rights to dividends or other distributions on the shares of any class or series of capital stock of the Corporation, directly or indirectly, owned beneficially by such Proposing Person that are separated or separable from the underlying shares of the Corporation, and (f) any performance-related fees (other than an asset-based fee) that such Proposing Person, directly or indirectly, is entitled to based on any increase or decrease in the value of shares of any class or series of capital stock of the Corporation or any Synthetic Equity Interests (the disclosures to be made pursuant to the foregoing clauses (b) through (f), "**Material Ownership Interests**"); provided, however, that Material Ownership Interests shall not include any such disclosures with respect to the ordinary course business activities of any broker, dealer, commercial bank, trust company or other nominee who is a Proposing Person solely as a result of being the stockholder of record directed to prepare and submit the information required by this Section 2.4(a)(2)(A)(i) on behalf of a beneficial owner;

(ii) a description of the material terms of all agreements, arrangements or understandings (whether or not in writing) entered into by any Proposing Person, in the case of nominations, each person, if any, whom a Proposing Person proposes to nominate for election or re-election as a director(s) (each, a "**Proposed Nominee**"), or any of the Proposing Person's respective affiliates or associates, with any other person for the

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purpose of acquiring, holding, disposing or voting of any shares of any class or series of capital stock of the Corporation;

(iii) (a) a description of all agreements, arrangements or understandings by and among any of the Proposing Persons, or by and among any Proposing Persons and any other person (including with any Proposed Nominee(s)), pertaining to the nomination(s) or other business proposed to be brought before the annual meeting of stockholders (which description shall identify the name of each other person who is party to such an agreement, arrangement or understanding) and (b) identification of the names and addresses of other stockholders (including beneficial owners) known by any of the Proposing Persons to support such nominations or other business proposal(s), and to the extent known, the class and number of all shares of the Corporation's capital stock owned of record or beneficially by such other stockholder(s) or other beneficial owner(s);

(iv) in the case of nominations, a description of all direct and indirect compensation and other material monetary agreements, arrangements and understandings during the past three (3) years, and any other material relationships, between or among any Proposing Person, on the one hand, and each Proposed Nominee or his or her respective affiliates and associates, on the other hand, including, without limitation, all information that would be required to be disclosed pursuant to Item 404 under Regulation S-K of the Securities and Exchange Commission if such Proposing Person were the "registrant" for purposes of such regulation and the Proposed Nominee were a director or executive officer of such registrant;

(v) a representation that such Proposing Person is a record holder of the stock of the Corporation at the timing of the giving of the notice, will be entitled to vote at the annual meeting of stockholders and intends to appear in person or by proxy at such annual meeting to nominate the Proposed Nominees named in its notice or, for any proposal that relates to any business other than nominations for election of directors, to bring such business before the annual meeting;

(vi) with respect to nominations, a written representation and agreement that the Proposed Nominee (a) understands his or her duties as a director under the General Corporation Law of the State of Delaware and agrees to act in accordance with those duties while serving as a director, (b) is not or will not become a party to any agreement, arrangement or understanding with, and has not given any commitment or assurance to, any person or entity as to how such nominee, if elected as a director, will act or vote as a director on any issue or question to be decided by the board of directors, in any case, to the extent that such arrangement, understanding, commitment or assurance (1) could limit or interfere with the Proposed Nominee's ability to comply, if elected as director of the Corporation, with his or her fiduciary duties under applicable law or with Corporation policies and guidelines applicable to directors generally or (2) has not been disclosed to the Corporation prior to or concurrently with the Proposing Person's submission of the nomination, (c) if elected as a

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director, will comply with all applicable laws and stock exchange listing standards and the Corporation's policies and guidelines applicable to directors, (d) is not or will not become a party to any direct or indirect compensation or other monetary agreement, arrangement or understanding with any person or entity other than the Corporation (including, without limitation, any agreement, arrangement or understanding with respect to any direct or indirect compensation, reimbursement or indemnification) in connection with service or action as a director that has not been disclosed to the Corporation prior to or concurrently with the Proposing Person's submission of the nomination, and (e) will provide (1) facts and other information in all communications with the Corporation and its stockholders that are or will be true and correct in all material respects and do not and will not omit to state a material fact necessary in order to make the statements made, in light of the circumstances under which they were made, not misleading and (2) all completed and signed questionnaires required generally of the Corporation's directors;

(vii) a Solicitation Statement; and

(viii) any other information relating to such Proposing Person or the proposed business (including, as applicable, information about any Proposed Nominee, including such Proposed Nominee's written consent to being named in the proxy statement as a nominee and to serving as a director if elected) that would be required to be disclosed in a proxy statement or other filing required to be made in connection with solicitations of proxies in support of the nomination for election of directors or the other business proposed to be brought before the annual meeting of stockholders pursuant to Section 14(a) of the Exchange Act.

(B) with respect to nominations, the following information as to each Proposed Nominee:

(i) the name, age, business address and, if known, residence address of the Proposed Nominee;

(ii) the principal occupation or employment of the Proposed Nominee; and

(iii) the class or series and number of shares of capital stock of the Corporation that are, directly or indirectly, owned of record or beneficially by the Proposed Nominee, including any shares of any class or series of the capital stock of the Corporation as to which such Proposed Nominee has a right to acquire beneficial ownership at any time in the future.

(C) as to any other business other than nominations that the Proposing Person proposes to bring before the annual meeting of stockholders, in addition to the information set forth in Section 2.4(a)(2)(A):

(i) a reasonably brief description of the business desired to be brought before the annual meeting of stockholders, the reasons for conducting such business at the annual meeting of stockholders, and any material interest in such business of each Proposing Person; and

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(ii) the text of the proposal or the business (including the text of any resolutions proposed for resolution).

(3) The Corporation may also require any Proposed Nominee for election to the board of directors of the Corporation to furnish such other information (i) as may be reasonably required by the Corporation to determine the eligibility of such Proposed Nominee to serve as an independent director of the Corporation in accordance with the Corporation's policies and guidelines applicable to directors as then in effect or (ii) that could be material to a reasonable stockholder's understanding of the independence, or lack thereof, of such Proposed Nominee.

(4) A Proposing Person providing Timely Notice of nominations or business proposed to be brought before an annual meeting of stockholders shall further update and supplement such notice, if necessary, so that the information (including, without limitation, the Material Ownership Interests information) provided or required to be provided in such notice pursuant to these By-laws shall be true and correct as of the record date for the annual meeting of stockholders and as of the date that is ten (10) business days prior to such annual meeting of stockholders or any adjournment or postponement thereof, and such update and supplement, (i) where required to be made as of the record date, shall be received by the secretary at the principal executive offices of the Corporation not later than the close of business on the fifth (5th) business day after the record date for the annual meeting of stockholders, and (ii) where required to be made as of ten (10) business days prior to the annual meeting of stockholders or any adjournment or postponement thereof, shall be made not later than the close of business on the eighth (8th) business day prior to the date of the annual meeting of stockholders or, if practicable, any adjournment or postponement thereof (and, if not practicable, on the first practicable date prior to the date to which the annual meeting of stockholders has been adjourned or postponed).

(b) Special Meetings of Stockholders.

Only such business shall be conducted at a special meeting of stockholders as shall have been brought before the meeting by or at the direction of the Corporation's board of directors. Nominations of persons for election to the board of directors may be made at a special meeting of stockholders at which directors are to be elected (i) by or at the direction of the board of directors or (ii) provided that the board of directors has determined that the special meeting of stockholders is being called in accordance with Section 1.2 for the purpose of electing directors, by any stockholder of the Corporation who (1) is a stockholder of record both at the time of giving of notice provided for in this Section 2.4(b) and at the time of the meeting, (2) is entitled to vote at the meeting, and (3) complies with the provisions of this Section 2.4(b). For nominations or other business to be properly brought before a special meeting of stockholders by a stockholder pursuant to Section 2.4(b)(ii) above, the stockholder's notice shall contain all of the information required by Section 2.4(a)(2) and (3), as updated consistent with the procedures set forth in Section 1.3(a)(4), and be received by the secretary of the Corporation at the principal executive offices of the Corporation not earlier than the close of business on the one hundred twentieth (120th) day prior to the scheduled date for such special meeting of stockholders and not later than the close of business on the later of the ninetieth (90th) day prior to the scheduled date of such special meeting of stockholders or the tenth (10th) day following the day of the Public Announcement of the date of such meeting and of the nominees proposed by the board of directors to be elected at the special meeting of stockholders is first made. The announcement of a postponement of a special meeting of stockholders after notice of the meeting has been given or an adjournment of a special

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meeting of stockholders shall not commence a new time period for the giving of a stockholder's notice as described in this Section 2.4(b).

(c)

General.

(1) Only such persons who are nominated in accordance with the provisions of these By-laws shall be eligible for election and to serve as directors and only such business shall be conducted at an annual meeting of stockholders or special meeting of stockholders as shall have been brought before the meeting in accordance with the provisions of these By-laws or in accordance with Rule 14a-8 under the Exchange Act. The board of directors or a designated committee thereof shall have the power to determine whether a nomination or any business proposed to be brought before the annual meeting of stockholders or special meeting of stockholders was made in accordance with the provisions of these By-laws. If neither the board of directors nor such designated committee makes a determination as to whether any nomination or other stockholder proposal was made in accordance with the provisions of these By-laws, the presiding officer of the annual meeting of stockholders or special meeting of stockholders shall have the power and duty to determine whether the nomination or other stockholder proposal was made in accordance with the provisions of these By-laws. If the board of directors or a designated committee thereof or the presiding officer, as applicable, determines that nomination or other stockholder proposal was not made in accordance with the provisions of these By-laws, such nomination or other stockholder proposal shall be disregarded and shall not be presented for action at the annual meeting of stockholders or special meeting of stockholders.

(2) Except as otherwise required by law, nothing in this Section 2.4 shall obligate the Corporation or the board of directors to include in any proxy statement or other stockholder communication distributed on behalf of the Corporation or the board of directors information with respect to any nominee for director or any other matter of business submitted by a stockholder.

(3) Notwithstanding the foregoing provisions of this Section 2.4, if the stockholder (or a qualified representative of the stockholder) does not appear at the annual meeting of stockholders or special meeting of stockholders to present a nomination or any business proposed by such stockholder, such nomination or business shall be disregarded, notwithstanding that proxies in respect of such vote may have been received by the Corporation. For purposes of this Section 2.4, to be considered a qualified representative of the proposing stockholder, a person must be authorized by a written instrument executed by such stockholder or an electronic transmission delivered by such stockholder to act for such stockholder as proxy at the annual meeting of stockholders or special meeting of stockholders, and such person must produce such written instrument or electronic transmission, or a reliable reproduction of the written instrument or electronic transmission, to the presiding officer at the meeting of stockholders.

(4) Notwithstanding the foregoing provisions of these By-laws, a stockholder shall also comply with all applicable requirements of the Exchange Act and the rules and regulations thereunder with respect to the matters set forth in these By-laws.

(5) Notwithstanding anything in this Article II to the contrary, in the event that the number of directors to be elected to the board of directors is enlarged pursuant to Section 2.7 and there is no Public Announcement naming all of the nominees for director or specifying the size of the increased board of directors made by the Corporation at least ten (10) days before the last day a stockholder may deliver a notice of nomination that qualifies

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as a Timely Notice under Section 2.4(a)(2), a stockholder's notice required by these By-laws shall still be considered a Timely Notice, but only with respect to nominees for any new positions created by such increase, if it shall be received by the secretary of the Corporation not later than the close of business on the tenth (10th) day following the day on which such Public Announcement is first made by the Corporation.

(6) Nothing in these By-laws shall be deemed to affect any rights of (i) stockholders to have proposals included in the Corporation's proxy statement pursuant to Rule 14a-8 (or any successor rule), as applicable, under the Exchange Act and, to the extent required by such rule, have such proposals considered and voted on at an annual meeting of stockholders or (ii) the holders of any series of preferred stock to elect directors under specified circumstances.

#### **Election and Term of Office**

- (a) Commencing at the annual meeting of the stockholders in 1995, the directors shall be divided into three classes, designated Class I, Class II and Class III. Each class shall consist, as nearly as may be possible, of one third of the number of directors constituting the entire Board of Directors. At the annual meeting of the stockholders held in 1995, Class I directors shall be elected for a one year term, Class II directors shall be elected for a two year term, and Class III directors shall be elected for a three year term, and in each case until their successors are duly elected and qualified. Commencing in 1996, at each annual meeting of the stockholders, successors to the class of directors whose terms expire at that annual meeting of stockholders shall be elected by stockholders for a three year term and until their successors are duly elected and qualified. If the number of directors constituting the entire Board of Directors shall be changed, the increase or decrease shall be apportioned among the classes so as to maintain the number of directors in each class as nearly equal as possible.
- (b) Any director elected to fill a vacancy resulting from an increase in any class or from the removal from office, death, disability, resignation or disqualification of a director or other cause shall hold office for the remaining term of the class to which such director is elected. No decrease in the size of the Board of Directors shall have the effect of removing or shortening the term of any incumbent director.
- (c) Whenever the holders of any series of preferred stock issued pursuant to the provisions of the Certificate of Incorporation of the Corporation shall have the right, voting as a separate class, to elect directors, the election, term of office, filling of vacancies and other terms of such directorships shall be governed by the terms of the Certificate of Incorporation applicable to such series, as the case may be, and such directorships shall not be divided into classes unless expressly so provided therein.

#### **Vacancies**

. Any vacancy in the board of directors, however occurring, including a vacancy resulting from the enlargement of the board of directors, may be filled in the manner provided in the Certificate of Incorporation of the corporation.

#### **Enlargement of the Board**

. The board of directors may be enlarged in the manner provided in the Certificate of Incorporation of the corporation.

#### **Resignation**

. Any director may resign by delivering or mailing postage prepaid a written resignation to the corporation at its principal office or to the chairman of the board of directors, president, secretary or assistant secretary, if any. Such resignation shall be effective upon receipt unless it is specified to be effective at some other time or upon the happening of some other event.

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### **Removal**

. A director, whether elected by the stockholders or directors, may be removed from office in the manner provided in the Certificate of Incorporation of the corporation.

### **Meetings**

. Regular meetings of the board of directors may be held without call or notice at such times and such places within or without the State of Delaware as the Board may, from time to time, determine, provided that notice of the first regular meeting following any such determination shall be given to directors absent from such determination. A regular meeting of the board of directors shall be held without notice immediately after, and at the same place as, the annual meeting of the stockholders or the special meeting of the stockholders held in place of such annual meeting, unless a quorum of the directors is not then present. Special meetings of the board of directors may be held at any time and at any place designated in the call of the meeting when called by the president, treasurer, or one or more directors. Members of the board of directors or any committee elected thereby may participate in a meeting of such board or committee by means of a conference telephone or similar communications equipment by means of which all persons participating in the meeting can hear each other at the same time, and participation by such means shall constitute presence in person at the meeting.

### **Notice of Meeting**

. It shall be sufficient notice to a director to send notice by mail at least seventy-two (72) hours before the meeting addressed to such person at his usual or last known business or residence address or to give notice to such person in person or by telephone at least twenty-four (24) hours before the meeting. Notice shall be given by the secretary, assistant secretary, if any, or by the officer or directors calling the meeting. The requirement of notice to any director may be waived by a written waiver of notice, executed by such person before or after the meeting or meetings, and filed with the records of the meeting, or by attendance at the meeting without protesting prior thereto or at its commencement the lack of notice. A notice or waiver of notice of a directors' meeting need not specify the purposes of the meeting.

### **Agenda**

. Any lawful business may be transacted at a meeting of the board of directors, notwithstanding the fact that the nature of the business may not have been specified in the notice or waiver of notice of the meeting.

### **Quorum**

. At any meeting of the board of directors, a majority of the directors then in office shall constitute a quorum for the transaction of business. Any meeting may be adjourned by a majority of the votes cast upon the question, whether or not a quorum is present, and the meeting may be held as adjourned without further notice.

### **Action at Meeting**

. Any motion adopted by vote of the majority of the directors present at a meeting at which a quorum is present shall be the act of the board of directors, except where a different vote is required by law, by the Certificate of Incorporation or by these By-laws. Members of the Board may participate in any meeting of the Board by means of conference telephone or similar communications equipment by means of which all persons participating in the meeting can hear each other, and participation in any meeting pursuant to this provision shall constitute presence in person at such meeting. The assent in writing or by electronic transmission of any director to any vote or action of the directors taken at any meeting, whether or not a quorum was present and whether or not the director had or waived notice of the meeting, shall have the same effect as if the director so assenting was present at such meeting and voted in favor of such vote or action.

### **Action Without Meeting**

. Any action by the directors may be taken without a meeting if all of the directors consent to the action in writing or by electronic transmission, and the consents in writing or by electronic transmission are subsequently filed with the records of the directors' meetings. Such filing shall be in paper form if the records are maintained in paper form and shall be in electronic form if the records are maintained in electronic form. Such consent shall be treated for all purposes as a vote of the directors at a meeting.

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### **Committees**

. The board of directors may, by the affirmative vote of a majority of the directors then in office, appoint an executive committee or other committees consisting of one or more directors and may by vote delegate to any such committee some or all of their powers except those which by law, the Certificate of Incorporation or these By-laws they may not delegate. Unless the board of directors shall otherwise provide, any such committee may make rules for the conduct of its business, but unless otherwise provided by the board of directors or such rules, its meetings shall be called, notice given or waived, its business conducted or its action taken as nearly as may be in the same manner as is provided in these By-laws with respect to meetings or for the conduct of business or the taking of actions by the board of directors. The board of directors shall have power at any time to fill vacancies in, change the membership of, or discharge any such committee at any time. The board of directors shall have power to rescind any action of any committee, but no such rescission shall have retroactive effect.

## **ARTICLE III. Officers**

### **Enumeration**

. The officers shall consist of a chairman of the board of directors, president, executive vice-president, a treasurer, a secretary and such other officers and agents (including one or more additional vice-presidents, assistant treasurers and assistant secretaries), as the board of directors may, in their discretion, determine.

### **Election**

. The chairman of the board of directors, president, executive vice-president, treasurer and secretary shall be elected annually by the directors at their first meeting following the annual meeting of the stockholders or any special meeting held in lieu of the annual meeting. Other officers may be chosen by the directors at such meeting or at any other meeting.

### **Qualification**

. An officer may, but need not, be a director or stockholder. Any two or more offices may be held by the same person. Any officer may be required by the directors to give bond for the faithful performance of his duties to the corporation in such amount and with such sureties as the directors may determine. The premiums for such bonds may be paid by the corporation.

### **Tenure**

. Except as otherwise provided by the Certificate of Incorporation or these By-laws, the term of office of each officer shall be for one year or until his successor is elected and qualified or until his earlier resignation or removal.

### **Removal**

. Any officer may be removed from office, with or without cause, by the affirmative vote of a majority of the directors then in office; provided, however, that an officer may be removed for cause only after reasonable notice and opportunity to be heard by the board of directors prior to action thereon.

### **Resignation**

. Any officer may resign by delivering or mailing postage prepaid a written resignation to the corporation at its principal office or to the chairman of the board of directors, president, secretary, or assistant secretary, if any, and such resignation shall be effective upon receipt unless it is specified to be effective at some other time or upon the happening of some event.

### **Vacancies**

. A vacancy in any office arising from any cause may be filled for the unexpired portion of the term by the board of directors.

### **Chairman of the Board**

. The chairman of the board of directors shall have such duties and powers as are commonly incident to such office and such other duties and powers as the board of directors may from time to time determine. He shall preside, when present, at all meetings of the board of directors. If so elected by the board of directors, the chairman of the board of directors may also serve as chief executive officer of the corporation.

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### **Chief Executive Officer**

. The chief executive officer shall, subject to the direction of the board of directors, have general supervision and control of the corporation's business and shall have such powers and duties as are commonly incident to such office.

### **President**

. The president shall have such powers and shall perform such duties as the board of directors may from time to time designate. The president shall serve as the chief executive officer of the corporation if he shall be so elected by the board of directors.

Except as otherwise voted by the board of directors, the president shall preside at all meetings of the stockholders, and shall preside at meetings of the board of directors if the chairman of the board is not present at such meetings.

### **Executive Vice-President; Vice-President(s)**

. In the absence of either the chairman of the board of directors or the president, the executive vice-president shall have and may exercise all of the powers of the officer who is absent. The executive vice-president and any additional vice-presidents, shall have such other powers and perform such duties as the board of directors may from time to time determine.

### **Treasurer and Assistant Treasurers**

. The treasurer, subject to the direction and under the supervision and control of the board of directors, shall have general charge of the financial affairs of the corporation. The treasurer shall have custody of all funds, securities and valuable papers of the corporation, except as the board of directors may otherwise provide. The treasurer shall keep or cause to be kept full and accurate records of account which shall be the property of the corporation, and which shall be always open to the inspection of each elected officer and director of the corporation. The treasurer shall deposit or cause to be deposited all funds of the corporation in such depository or depositories as may be authorized by the board of directors. The treasurer shall have the power to endorse for deposit or collection all notes, checks, drafts, and other negotiable instruments payable to the corporation. The treasurer shall perform such other duties as are incidental to the office, and such other duties as may be assigned by the board of directors.

Assistant treasurers, if any, shall have such powers and perform such duties as the board of directors may from time to time determine.

### **Secretary and Assistant Secretaries**

. The secretary shall record, or cause to be recorded, all proceedings of the meetings of the stockholders and directors (including committees thereof) in the book of records of this corporation. The record books shall be open at reasonable times to the inspection of any stockholder, director, or officer. The secretary shall notify the stockholders and directors, when required by law or by these By-laws, of their respective meetings, and shall perform such other duties as the directors and stockholders may from time to time prescribe. The secretary shall have the custody and charge of the corporate seal, and shall affix the seal of the corporation to all instruments requiring such seal, and shall certify under the corporate seal the proceedings of the directors and of the stockholders, when required. In the absence of the secretary at any such meeting, a temporary secretary shall be chosen who shall record the proceedings of the meeting in the aforesaid books.

Assistant secretaries, if any, shall have such powers and perform such duties as the board of directors may from time to time designate.

### **Other Powers and Duties**

. Subject to these By-laws and to such limitations as the board of directors may from time to time prescribe, the officers of the corporation shall each have such powers and duties as generally pertain to their respective offices, as well as such powers and duties as from time to time may be conferred by the board of directors.

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**ARTICLE IV.**  
**Capital Stock**

**Stock Certificates**

. Each stockholder shall be entitled to a certificate representing the number of shares of the capital stock of the corporation owned by such person in such form as shall, in conformity to law, be prescribed from time to time by the board of directors. Each certificate shall be signed by the chairman of the board of directors, the president or any vice-president and by the secretary, assistant secretary or treasurer or assistant treasurer, or such other officers designated by the board of directors from time to time as permitted by law, shall bear the seal of the corporation, and shall express on its face its number, date of issue, class, the number of shares for which, and the name of the person to whom, it is issued. The corporate seal and any or all of the signatures of corporation officers may be facsimile if the stock certificate is manually counter-signed by an authorized person on behalf of a transfer agent or registrar other than the corporation or its employee.

If an officer, transfer agent or registrar who has signed, or whose facsimile signature has been placed on, a certificate shall have ceased to be such before the certificate is issued, it may be issued by the corporation with the same effect as if he were such officer, transfer agent or registrar at the time of its issue.

**Transfer of Shares**

. Title to a certificate of stock and to the shares represented thereby shall be transferred only on the books of the corporation by delivery to the corporation or its transfer agent of the certificate properly endorsed, or by delivery of the certificate accompanied by a written assignment of the same, or a properly executed written power of attorney to sell, assign or transfer the same or the shares represented thereby. Upon surrender of a certificate for the shares being transferred, a new certificate or certificates shall be issued according to the interests of the parties.

**Record Holders**

. Except as otherwise may be required by law, by the Certificate of Incorporation or by these By-laws, the corporation shall be entitled to treat the record holder of stock as shown on its books as the owner of such stock for all purposes, including the payment of dividends and the right to vote with respect thereto, regardless of any transfer, pledge or other disposition of such stock, until the shares have been transferred on the books of the corporation in accordance with the requirements of these By-laws.

It shall be the duty of each stockholder to notify the corporation of his post office address.

**Record Date**

. In order that the corporation may determine the stockholders entitled to receive notice of or to vote at any meeting of stockholders or any adjournments thereof, or to express consent to corporate action in writing without a meeting, or entitled to receive payment of any dividend or other distribution or allotment of any rights, or entitled to exercise any rights in respect of any change, conversion or exchange of stock or for the purpose of any other lawful action, the board of directors may fix, in advance, a record date, which shall not be more than sixty days prior to any other action. In such case only stockholders of record on such record date shall be so entitled notwithstanding any transfer of stock on the books of the corporation after the record date.

If no record date is fixed: (i) the record date for determining stockholders entitled to receive notice of or to vote at a meeting of stockholders shall be at the close of business on the day next preceding the day on which notice is given, or, if notice is waived, at the close of business on the day next preceding the day on which the meeting is held; (ii) the record date for determining stockholders entitled to express consent to corporate action in writing without a meeting, when no prior action by the board of directors is necessary, shall be the day on which the first written consent is expressed; and (iii) the record date for determining stockholders for any other purpose shall be at the close of business on the day on which the board of directors adopts the resolution relating thereto.

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### **Transfer Agent and Registrar for Shares of Corporation**

. The board of directors may appoint a transfer agent and a registrar of the certificates of stock of the corporation. Any transfer agent so appointed shall maintain, among other records, a stockholders' ledger, setting forth the names and addresses of the holders of all issued shares of stock of the corporation, the number of shares held by each, the certificate numbers representing such shares, and the date of issue of the certificates representing such shares. Any registrar so appointed shall maintain, among other records, a share register, setting forth the total number of shares of each class of shares which the corporation is authorized to issue and the total number of shares actually issued. The stockholders' ledger and the share register are hereby identified as the stock transfer books of the corporation; but as between the stockholders' ledger and the share register, the names and addresses of stockholders, as they appear on the stockholders' ledger maintained by the transfer agent shall be the official list of stockholders of record of the corporation. The name and address of each stockholder of record, as they appear upon the stockholders' ledger, shall be conclusive evidence of who are the stockholders entitled to receive notice of the meetings of stockholders, to vote at such meetings, to examine a complete list of the stockholders entitled to vote at meetings, and to own, enjoy and exercise any other property or rights deriving from such shares against the corporation. Stockholders, but not the corporation, its directors, officers, agents or attorneys, shall be responsible for notifying the transfer agent, in writing, of any changes in their names or addresses from time to time, and failure to do so will relieve the corporation, its other stockholders, directors, officers, agents and attorneys, and its transfer agent and registrar, of liability for failure to direct notices or other documents, or pay over or transfer dividends or other property or rights, to a name or address other than the name and address appearing in the stockholders' ledger maintained by the transfer agent.

### **Loss of Certificates**

. In case of the loss, destruction or mutilation of a certificate of stock, a replacement certificate may be issued in place thereof upon such terms as the board of directors may prescribe, including, in the discretion of the board of directors, a requirement of bond and indemnity to the corporation.

### **Restrictions on Transfer**

. Every certificate for shares of stock which are subject to any restriction on transfer, whether pursuant to the Certificate of Incorporation, the By-laws or any agreement to which the corporation is a party, shall have the fact of the restriction noted conspicuously on the certificate and shall also set forth on the face or back either the full text of the restriction or a statement that the corporation will furnish a copy to the holder of such certificate upon written request and without charge.

### **Multiple Classes of Stock**

. The amount and classes of the capital stock and the par value, if any, of the shares, shall be as fixed in the Certificate of Incorporation. At all times when there are two or more classes of stock, the several classes of stock shall conform to the description and the terms and have the respective preferences, voting powers, restrictions and qualifications set forth in the Certificate of Incorporation and these By-laws. Every certificate issued when the corporation is authorized to issue more than one class or series of stock shall set forth on its face or back either (i) the full text of the preferences, voting powers, qualifications and special and relative rights of the shares of each class and series authorized to be issued, or (ii) a statement of the existence of such preferences, powers, qualifications and rights, and a statement that the corporation will furnish a copy thereof to the holder of such certificate upon written request and without charge.

## **ARTICLE V. Dividends**

### **Declaration of Dividends**

. Except as otherwise required by law or by the Certificate of Incorporation, the board of directors may, in its discretion, declare what, if any, dividends shall be paid from the surplus or from the net profits of the corporation upon the stock of the corporation; provided, however, that no dividend shall be declared or paid the payment of which would diminish the

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amount of the paid-in capital of the corporation. Dividends may be paid in cash, in property, in shares of the corporation's stock, or in any combination thereof.

Dividends shall be payable upon such dates as the board of directors may designate.

#### **Reserves**

. Before the payment of any dividend and before making any distribution of profits, the board of directors, from time to time and in its absolute discretion, shall have power to set aside out of the surplus or net profits of the corporation such sum or sums as the board of directors deems proper and sufficient as a reserve fund to meet contingencies or for such other purpose as the board of directors shall deem to be in the best interests of the corporation, and the board of directors may modify or abolish any such reserve.

### **ARTICLE VI.**

#### **Powers of Officers to Contract with the Corporation**

Any and all of the directors and officers of the corporation, notwithstanding their official relations to it, may enter into and perform any contract or agreement of any nature between the corporation and themselves, or any and all of the individuals from time to time constituting the board of directors of the corporation, or any firm or corporation in which any such director may be interested, directly or indirectly, whether such individual, firm or corporation thus contracting with the corporation shall thereby derive personal or corporate profits or benefits or otherwise; provided, that (i) the material facts of such interest are disclosed or are known to the board of directors or committee thereof which authorizes such contract or agreement; (ii) if the material facts as to such person's relationship or interest are disclosed or are known to the stockholders entitled to vote thereon, and the contract is specifically approved in good faith by a vote of the stockholders; or (iii) the contract or agreement is fair as to the corporation as of the time it is authorized, approved or ratified by the board of directors, a committee thereof, or the stockholders. Any director of the corporation who is interested in any transaction as aforesaid may nevertheless be counted in determining the existence of a quorum at any meeting of the board of directors which shall authorize or ratify any such transaction. This Article shall not be construed to invalidate any contract or other transaction which would otherwise be valid under the common or statutory law applicable thereto.

### **ARTICLE VII.**

#### **Indemnification**

#### **Definitions**

. For purposes of this Article VII the following terms shall have the meanings indicated:

- (a) **"Code of Conduct"** means the corporation's Code of Conduct for Directors, Officers and Employees as in effect from time to time.
  - (b) **"Corporate Status"** describes the status of a person who is or was a director, officer, employee, agent, trustee or fiduciary of the Corporation or of any other corporation, partnership, joint venture, trust, employee benefit plan or other Enterprise which such person is or was serving at the express written request of the corporation.
  - (c) **"Court"** means the Court of Chancery of the State of Delaware, the court in which the Proceeding in respect of which indemnification is sought by a Covered Person shall have been brought or is pending, or another court having subject jurisdiction and personal jurisdiction over the parties.
  - (d) **"Covered Person"** means a person who is a present or former director or officer of the corporation and shall include such person's legal representatives, heirs, executors and administrators.
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- (e) **“Disinterested Director”** means a director of the corporation who is not and was not a party to the Proceeding in respect of which indemnification is sought by a Covered Person.
- (f) **“Enterprise”** shall mean the corporation and any other corporation, partnership, joint venture, trust, employee benefit plan or other enterprise of which a Covered Person is or was serving at the express written request of the corporation as a director, officer, employee, agent, trustee or fiduciary.
- (g) **“Expenses”** shall include, without limitation, all reasonable attorneys’ fees, retainers, court costs, transcript costs, fees of experts, witness fees, travel expenses, duplicating costs, printing and binding costs, telephone charges, postage, delivery service fees, and all other disbursements or expenses of the types customarily incurred in connection with prosecuting, defending, preparing to prosecute or defend, investigating or being or preparing to be a witness in a Proceeding.
- (h) **“Good Faith”** shall mean a Covered Person having acted in good faith and in a manner such Covered Person reasonably believed to be in or not opposed to the best interests of the corporation or, in the case of an Enterprise which is an employee benefit plan, the best interests of the participants or beneficiaries of said plan, as the case may be, and, with respect to any Proceeding which is criminal in nature, having had no reasonable cause to believe such Covered Person’s conduct was unlawful.
- (i) **“Independent Counsel”** means a law firm, or a member of a law firm, that is experienced in matters of corporation law and may include law firms or members thereof that are regularly retained by the corporation but not any other party to the Proceeding giving rise to a claim for indemnification hereunder. Notwithstanding the foregoing, the term “Independent Counsel” shall not include any person who, under the standards of professional conduct then prevailing and applicable to such counsel, would have a conflict of interest in representing either the corporation or Covered Person in an action to determine Covered Person’s rights under this Article.
- (j) **“Proceeding”** includes any action, suit, arbitration, alternate dispute resolution mechanism, investigation (including any internal corporate investigation), administrative hearing or any other actual, threatened or completed proceeding whether civil, criminal, administrative or investigative, other than one initiated by the Covered Person. For purposes of the foregoing sentence, a **“Proceeding”** shall not be deemed to have been initiated by the Covered Person where such Covered Person seeks to enforce such Covered Person’s rights under this Article.

**Right to Indemnification in General**

- (a) **Covered Persons.** In connection with any Proceeding, the corporation shall indemnify, and advance Expenses, to each Covered Person as provided in this Article and to the fullest extent permitted by applicable law in effect on the date hereof and to such greater extent as applicable law may hereafter from time to time permit. The indemnification provisions in this Article shall be deemed to be a contract between the corporation and each Covered Person who serves in any such Corporate Status at any time while these provisions as well as the relevant provisions of the Delaware General Corporation Law are in effect and any repeat or modification thereof shall not affect any right or obligation then existing with respect to any state of facts then or previously existing or any Proceeding previously or thereafter brought or threatened based in whole or in part upon any such state of facts. Such a “contract right” may not be modified retroactively without the consent of such Covered Person.
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- (b) **Employees and Agents.** The corporation may, to the extent authorized from time to time by the board of directors, grant indemnification and the advancement of Expenses to any employee or agent of the corporation to the fullest extent of the provisions of this Article with respect to the indemnification and advancement of Expenses of Covered Person.

**Proceedings Other Than Proceedings by or in the Right of the Corporation**

- (a) Each Covered Person shall be entitled to the rights of indemnification provided in this Section 7.3 if, by reason of such Covered Person's Corporate Status, such Covered Person is, or is threatened to be made, a party to or is otherwise involved in any Proceeding, other than a Proceeding by or in the right of the corporation. Each Covered Person shall be indemnified against Expenses, judgments, penalties, fines and amounts paid in settlements, actually and reasonably incurred by such Covered Person or on such Covered Person's behalf in connection with such Proceeding or any claim, issue or matter therein, if such Covered Person did not violate the corporation's Code of Conduct and acted in Good Faith. Notwithstanding the foregoing, if such Covered Person shall have been found to have violated the corporation's Code of Conduct then in effect, the corporation may, to the extent authorized by the board of directors, indemnify such Covered Person against Expenses, judgments, penalties, fines and amounts paid in settlement, actually and reasonably incurred by such Covered Person or on such Covered Person's behalf.

**Proceedings by or in the Right of the Corporation**

- (a) Each Covered Person shall be entitled to the rights of indemnification provided in this Section 7.4 if, by reason of such Covered Person's Corporate Status, such Covered Person is, or is threatened to be made, a party to or is otherwise involved in any Proceeding brought by or in the right of the corporation to procure a judgment in its favor. Such Covered Person shall be indemnified against Expenses, judgments, penalties, and amounts paid in settlement, actually and reasonably incurred by such Covered Person or on such Covered Person's behalf in connection with such Proceeding if such Covered Person acted in Good Faith. Notwithstanding the foregoing, no such indemnification shall be made in respect of any claim, issue or matter in such Proceeding as to which such Covered Person shall have been adjudged to be liable to the corporation if applicable law prohibits such indemnification; provided, however, that, if applicable law so permits, indemnification shall nevertheless be made by the corporation in such event if and only to the extent that the Court which is considering the matter shall determine.
- (b) Notwithstanding any provision to the contrary in this Section, if the board of directors, Independent Counsel or the stockholders, as the case may be, making the determination with respect to indemnification as provided under Section 7.9 hereof, or the Court considering the matter determines that the act or omission which forms the basis for the claim which is the subject of the Proceeding violated the corporation's Code of Conduct then in effect, then, notwithstanding that fact, the corporation may, to the extent authorized by the board of directors, indemnify such Covered Person against all Expenses, judgments, penalties and amounts paid in settlement, actually and reasonably incurred by such Covered Person or on such Covered Person's behalf in connection with such proceeding if such Covered Person acted in Good Faith.

**Indemnification of a Party Who is Wholly or Partly Successful**

. Notwithstanding any other provision of this Article, to the extent that a Covered Person is, by reason of such Covered Person's Corporate Status, a party to or is otherwise involved in and is successful, on the merits or otherwise, in any Proceeding, such Covered Person shall be indemnified to the maximum extent

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permitted by law, against all Expenses, judgments, penalties, fines, and amounts paid in settlement, actually and reasonably incurred by such Covered Person or on such Covered Person's behalf in connection therewith. If such Covered Person is not wholly successful in such Proceeding but is successful, on the merits or otherwise, as to one or more but less than all claims, issues or matters in such Proceeding, the corporation shall indemnify such Covered Person to the maximum extent permitted by law, against all Expenses, judgments, penalties, fines, and amounts paid in settlement, actually and reasonably incurred by such Covered Person or on such Covered Person's behalf in connection with each successfully resolved claim, issue or matter. For purposes of this Section 7.5 and without limitation, the termination of any claim, issue or matter in such a Proceeding by dismissal, with or without prejudice, shall be deemed to be a successful result as to such claim, issue or matter.

#### **Indemnification for Expenses of a Witness**

. Notwithstanding any other provision of this Article, to the extent that a Covered Person is, by reason of such Covered Person's Corporate Status, a witness in any Proceeding, such Covered Person shall be indemnified against all Expenses actually and reasonably incurred by such Covered Person or on such Covered Persons behalf in connection therewith.

#### **Advancement of Expenses**

. Notwithstanding any provision to the contrary in this Article, the corporation (acting through the chairman of the board, president, executive vice president or any vice president of the corporation) shall advance all reasonable Expenses which, by reason of a Covered Persons Corporate Status, were incurred by or on behalf of such Covered Person in connection with any Proceeding, within twenty (20) days after the receipt by the corporation of a statement or statements from such Covered Person requesting such advance or advances, whether prior to or after final disposition of such Proceeding. Such statement or statements shall reasonably evidence the Expenses incurred by the Covered Person and shall include or be preceded or accompanied by an undertaking by or on behalf of the Covered Person to repay any Expenses if it shall ultimately be determined that such Covered Person is not entitled to be indemnified against such Expenses. Any advance and undertakings to repay pursuant to this Section 7.7 shall be unsecured and interest free. Advancement of Expenses pursuant to this Section 7.7 shall not require approval of the board of directors or the stockholders of the corporation, or of any other person or body. The Secretary of the corporation shall promptly advise the Board in writing of the request for advancement of Expenses, of the amount and other details of the advance and of the undertaking to make repayment pursuant to this Section 7.7.

#### **Notification and Defense of Claim**

. Promptly after receipt by a Covered Person of notice of the commencement of any Proceeding, such Covered Person shall, if a claim is to be made against the corporation under this Article, notify the corporation of the commencement of the Proceeding. The omission so to notify the corporation will not relieve it from any liability which it may have to such Covered Person otherwise than under this Article. With respect to any such Proceedings to which such Covered Person notifies the corporation:

- (a) The corporation will be entitled to participate in the defense at its own expense.
  - (b) Except as otherwise provided below, the corporation jointly with any other indemnifying party similarly notified will be entitled to assume the defense with counsel reasonably satisfactory to the Covered Person. After notice from the corporation to the Covered Person of its election to assume the defense of a suit, the corporation will not be liable to the Covered Person under this Article for any legal or other expenses subsequently incurred by the Covered Person in connection with the defense of the Proceeding other than reasonable costs of investigation or as otherwise provided below. The Covered Person shall have the right to employ his own counsel in such Proceeding but the fees and expenses of such counsel incurred after notice from the corporation of its assumption of the defense shall be at the expense of the Covered Person unless (i) the employment of counsel by the
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Covered Person has been authorized by the corporation, (ii) the Covered Person shall have concluded reasonably that there may be a conflict of interest between the corporation and the Covered Person in the conduct of the defense of such action and such conclusion is confirmed in writing by the corporation's outside counsel regularly employed by it in connection with corporate matters, or (iii) the corporation shall not in fact have employed counsel to assume the defense of such Proceeding, in each of which cases the fees and expenses of counsel shall be at the expense of the corporation. The corporation shall not be entitled to assume the defense of any Proceeding brought by or in the right of the corporation or as to which the Covered Person shall have made the conclusion provided for in (ii) above and such conclusion shall have been so confirmed by the corporation's said outside counsel.

- (c) Notwithstanding any provision of this Article to the contrary, the corporation shall not be liable to indemnify the Covered Person under this Article for any amounts paid in settlement of any Proceeding or claim effected without its written consent. The corporation shall not settle any Proceeding or claim in any manner which would impose any penalty, limitation or disqualification of the Covered Person for any purpose without such Covered Person's written consent. Neither the corporation nor the Covered Person will unreasonably withhold their consent to any proposed settlement.
- (d) If it is determined that the Covered Person is entitled to indemnification not covered by defense of the claim afforded under subparagraph (b) above, payment to the Covered Person of the additional amounts to be indemnified shall be made within ten (10) days after determination.

#### **Method of Determination**

A determination (if required by applicable law in the specific case) with respect to a Covered Person's entitlement to indemnification shall be made (a) by the board of directors by a majority vote of a quorum consisting of Disinterested Directors, or (b) in the event that a quorum of the Board consisting of Disinterested Directors is not obtainable or, even if obtainable, such quorum of Disinterested Directors so directs, by Independent Counsel in a written opinion to the board of directors, a copy of which shall be delivered to the Covered Person seeking indemnification, or (c) by the holders of a majority of the votes of the outstanding stock at the time entitled to vote on matters other than the election or removal of directors, voting as a single class, including the stock of the Covered Person seeking indemnification.

#### **Presumptions and Effect of Certain Proceedings**

- (a) **Burden of Proof.** In making a determination with respect to entitlement to indemnification hereunder, the person or persons or entity making such determination shall presume that the Covered Person is entitled to indemnification under this Article if such Covered Person has submitted a request for indemnification including such documentation and information as is reasonably available to such Covered Person and is reasonably necessary to determine whether and to what extent such Covered Person is entitled to indemnification and the corporation shall have the burden of proof to overcome that presumption in connection with the making by any person, persons or entity of any determination contrary to that presumption.
  - (b) **Effect of Other Proceedings.** The termination of any Proceeding or of any claim, issue or matter therein, by judgment, order, settlement or conviction, or upon a plea of guilty or of nolo contendere or its equivalent, shall not (except as otherwise expressly provided in this Article) of itself adversely affect the right of an Covered Person to indemnification or
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create a presumption that an Covered Person violated the corporation's Code of Conduct or did not act in Good Faith.

- (c) **Actions of Others.** The knowledge and/or actions, or failure to act, of any director, officer, employee, agent, trustee or fiduciary of the Enterprise shall not be imputed to a Covered Person for purposes of determining the right to indemnification under this Article.

**Non-Exclusivity**

. The rights of indemnification and to receive advancement of Expenses as provided by this Article shall not be deemed exclusive of any other rights to which a Covered Person may at any time be entitled under applicable law, the Certificate of Incorporation, these By-Laws, any agreement, a vote of stockholders or a resolution of the board of directors, or otherwise. No amendment, alteration, rescission or replacement of this Article or any provision hereof shall be effective as to a Covered Person with respect to any action taken or omitted by such Covered Person in such Covered Person's Corporate Status prior to such amendment, alteration, rescission or replacement.

**Insurance**

. The corporation may maintain, at its expense, an insurance policy or policies to protect itself and any Covered Person, officer, employee or agent of the corporation or another Enterprise against liability arising out of this Article or otherwise, whether or not the corporation would have the power to indemnify any such person against such liability under the Delaware General Corporation Law.

**No Duplicative Payment**

. The corporation shall not be liable under this Article to make any payment of amounts otherwise indemnifiable hereunder if and to the extent that a Covered Person has otherwise actually received such payment under any insurance policy, contract, agreement or otherwise.

**Severability**

. If any provision or provisions of this Article shall be held to be invalid, illegal or unenforceable for any reason whatsoever:

- (a) the validity, legality and enforceability of the remaining provisions of this Article (including without limitation, each portion of any Section of this Article containing any such provision held to be invalid, illegal or unenforceable, that is not itself invalid, illegal or unenforceable) shall not in any way be affected or impaired thereby; and
- (b) to the fullest extent possible, the provisions of this Article (including, without limitation, each portion of any Section of this Article containing any such provision held to be invalid, illegal or unenforceable, that is not itself invalid, illegal or unenforceable) shall be construed so as to give effect to the intent manifested by the provision held invalid, illegal or unenforceable.

**ARTICLE VIII.  
Miscellaneous Provisions**

**Certificate of Incorporation**

. All references in these By-laws to the Certificate of Incorporation shall be deemed to refer to the Certificate of Incorporation of the corporation, as amended and in effect from time to time.

**Fiscal Year**

. Except as from time to time otherwise provided by the board of directors, the fiscal year of the corporation shall end on the 31st day of March of each year.

**Corporate Seal**

. The board of directors shall have the power to adopt and alter the seal of the corporation.

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#### **Execution of Instruments**

. All deeds, leases, transfers, contracts, bonds, notes, and other obligations authorized to be executed by an officer of the corporation on its behalf shall be signed by the chairman of the board of directors, the president or the treasurer except as the board of directors may generally or in particular cases otherwise determine.

#### **Voting of Securities**

. Unless the board of directors otherwise provides, the chairman of the board of directors, the president or the treasurer may waive notice of and act on behalf of this corporation, or appoint another person or persons to act as proxy or attorney in fact for this corporation with or without discretionary power and/or power of substitution, at any meeting of stockholders or shareholders of any other corporation or organization, any of whose securities are held by this corporation.

#### **Evidence of Authority**

. A certificate by the secretary or any assistant secretary as to any action taken by the stockholders, directors or any officer or representative of the corporation shall, as to all persons who rely thereon in good faith, be conclusive evidence of such action. The exercise of any power which by law, by the Certificate of Incorporation, or by these By-laws, or under any vote of the stockholders or the board of directors, may be exercised by an officer of the corporation only in the event of absence of another officer or any other contingency shall bind the corporation in favor of anyone relying thereon in good faith, whether or not such absence or contingency existed.

#### **Corporate Records**

. The original, or attested copies, of the Certificate of Incorporation, By-laws, records of all meetings of the incorporators and stockholders, and the stock transfer books (which shall contain the names of all stockholders and the record address and the amount of stock held by each) shall be kept in Delaware at the principal office of the corporation, or at an office of the corporation, or at an office of its transfer agent or of the secretary or of the assistant secretary, if any. Said copies and records need not all be kept in the same office. They shall be available at all reasonable times to inspection of any stockholder for any purpose but not to secure a list of stockholders for the purpose of selling said list or copies thereof or for using the same for a purpose other than in the interest of the applicant, as a stockholder, relative to the affairs of the corporation.

#### **Charitable Contributions**

. The board of directors from time to time may authorize contributions to be made by the corporation in such amounts as it may determine to be reasonable to corporations, trusts, funds or foundations organized and operated exclusively for charitable, scientific or educational purposes, no part of the net earning of which inures to the private benefit of any stockholder or individual.

### **ARTICLE IX. Amendments**

#### **Amendment by Stockholders**

. Prior to the issuance of stock, these By-laws may be amended, altered or repealed by the incorporator(s) by majority vote. After stock has been issued, these By-laws may be amended altered or repealed by the stockholders at any annual or special meeting by vote of a majority of all shares outstanding and entitled to vote, except that where the effect of the amendment would be to reduce any voting requirement otherwise required by law, the Certificate of Incorporation or these By-laws, such amendment shall require the vote that would have been required by such provision. Notice and a copy of any proposal to amend these By-laws must be included in the notice of meeting of stockholders at which action is taken upon such amendment.

#### **Amendment by Board of Directors**

. These By-laws may be amended or altered by the board of directors at a meeting duly called for the purpose by majority vote of the directors then in office, except that directors shall not amend the By-laws in a manner which:

- (a) changes the stockholder voting requirements for any action;
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- (b) alters or abolishes any preferential right or right of redemption applicable to a class or series of stock with shares already outstanding;
- (c) alters the provisions of this Article IX hereof; or
- (d) permits the board of directors to take any action which under law, the Certificate of Incorporation, or these By-laws is required to be taken by the stockholders.

Any amendment of these By-laws by the board of directors may be altered or repealed by the stockholders at any annual or special meeting of stockholders.

**Amended and Restated By-Laws  
Of ABIOMED, Inc.  
A Delaware Corporation**

**As Amended and Restated ~~February 5, 2019~~ February 4, 2020**

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**By-Laws OF  
ABIOMED, INC.  
(A Delaware Corporation) (the "Corporation" or the "corporation")**

**ARTICLE I.  
Stockholders**

**Section 1.1. Annual Meeting.** An annual meeting of the stockholders for the election of directors to succeed those whose terms expire and for the transaction of such other business as may properly come before the meeting shall be held at the place, if any, within or without the State of Delaware, on the date and at the time that the board of directors shall each year fix. Unless stated otherwise in the notice of the annual meeting of the stockholders of the corporation, such annual meeting shall be at the principal office of the corporation.

**Section 1.2. Special Meetings.** Special meetings of the stockholders may be called at any time by the chairman of the board of directors, the president or by the board of directors. Special meetings of the stockholders shall be held at such time, date and place within or outside of the State of Delaware as may be designated in the notice of such meeting. Only such business shall be conducted at a special meeting of stockholders as shall have been brought before the meeting pursuant to the notice of meeting.

**Section 1.3. Notice of Meeting.** A written notice stating the place, date, and hour of each meeting of the stockholders, and, in the case of a special meeting, the purposes for which the meeting is called, shall be given to each stockholder entitled to vote at such meeting, and to each stockholder who, under the Certificate of Incorporation or these By-laws, is entitled to such notice, by delivering such notice to such person or leaving it at their residence or usual place of business, or by mailing it, postage prepaid, and addressed to such stockholder at his address as it appears upon the books of the corporation, at least ten (10) days and not more than sixty (60) before the meeting. Such notice shall be given by the secretary, an assistant secretary, or any other officer or person designated either by the secretary or by the person or persons calling the meeting.

The requirement of notice to any stockholder may be waived by a written waiver of notice, executed before or after the meeting by the stockholder or his attorney thereunto duly authorized, and filed with the records of the meeting, or if communication with such stockholder is unlawful, or by attendance at the meeting without protesting prior thereto or at its commencement the lack of notice. A waiver of notice of any regular or special meeting of the stockholders need not specify the purposes of the meeting.

If a meeting is adjourned to another time or place, notice need not be given of the adjourned meeting if the time and place are announced at the meeting at which the adjournment is taken, except that if the adjournment is for more than thirty days, or if after the adjournment a new record date is fixed for the adjourned meeting, notice of the adjourned meeting shall be given to each stockholder of record entitled to vote at the meeting.

**Section 1.4. Quorum.** The holders of a majority in interest of all stock issued, outstanding and entitled to vote at a meeting shall constitute a quorum. Any meeting may be adjourned from time to time by a majority of the votes properly cast upon the question, whether or not a quorum is present.

**Section 1.5. Voting and Proxies.** Stockholders shall have one vote for each share of stock entitled to vote owned by them of record according to the books of the corporation, unless otherwise provided by law or by the Certificate of Incorporation. Stockholders may vote either in person or by written proxy, but no proxy shall be voted or acted upon after three years from its date, unless the proxy

provides for a longer period. Proxies shall be filed with the secretary of the meeting, or of any adjournment thereof. Except as otherwise limited therein, proxies shall entitle the persons authorized thereby to vote at any adjournment of such meeting. A proxy purporting to be executed by or on behalf of a stockholder shall be deemed valid unless challenged at or prior to its exercise and the burden of proving invalidity shall rest on the challenger. A proxy with respect to stock held in the name of two or more persons shall be valid if executed by one of them unless at or prior to exercise of the proxy the corporation receives a specific written notice to the contrary from any one of them.

**Section 1.6. Action at Meeting.** When a quorum is present at any meeting, a plurality of the votes properly cast for election to any office shall elect to such office, and a majority of the votes properly cast upon any question other than election to an office shall decide such question, except where a larger vote is required by law, the Certificate of Incorporation or these by-laws. No ballot shall be required for any election unless requested by a stockholder present or represented at the meeting and entitled to vote in the election.

**Section 1.7. Action Without Meeting.** No action required to be taken or which may be taken at any annual or special meeting of stockholders of the Corporation may be taken by stockholders without a meeting, and the power of stockholders to consent in writing, without a meeting, to the taking of any action is specifically denied.

**Section 1.8. Voting of Shares of Certain Holders.** Shares of stock of the corporation standing in the name of another corporation, domestic or foreign, may be voted by such officer, agent, or proxy as the by-laws of such corporation may prescribe, or, in the absence of such provision, as the board of directors of such corporation may determine.

Shares of stock of the corporation standing in the name of a deceased person, a minor ward or an incompetent person, may be voted by his administrator, executor, court-appointed guardian or conservator without a transfer of such shares into the name of such administrator, executor, court appointed guardian or conservator. Shares of capital stock of the corporation standing in the name of a trustee may be voted by him.

Shares of stock of the corporation standing in the name of a receiver may be voted by such receiver, and shares held by or under the control of a receiver may be voted by such receiver without the transfer thereof into his name if authority so to do be contained in an appropriate order of the court by which such receiver was appointed.

A stockholder whose shares are pledged shall be entitled to vote such shares until the shares have been transferred into the name of the pledgee, and thereafter the pledgee shall be entitled to vote the shares so transferred.

Shares of its own stock belonging to this corporation shall not be voted, directly or indirectly, at any meeting and shall not be counted in determining the total number of outstanding shares at any given time, but shares of its own stock held by the corporation in a fiduciary capacity may be voted and shall be counted in determining the total number of outstanding shares.

**Section 1.9. Stockholder Lists.** The secretary (or the corporation's transfer agent or other person authorized by these By-laws or by law) shall prepare and make, at least ten days before every meeting of stockholders, a complete list of the stockholders entitled to vote at the meeting, arranged in alphabetical order, and showing the address of each stockholder and the number of shares registered in the name of each stockholder. Such list shall be open to the examination of any stockholder, for any purpose germane to the meeting, during ordinary business hours, for a period of at least ten days prior to the meeting, either at a place within the city where the meeting is to be held, which place shall be specified in the notice of the meeting, or, if not so specified, at the place where the meeting is to be held.



**ARTICLE II.  
Board of Directors**

**Section 2.1.**

**Definitions.** For purposes of this Article II, the following terms shall have the meanings indicated:

- (a) **"Proposing Person"** means any of the following persons: (i) the stockholder of record providing the notice of nominations or business proposed to be brought before a stockholders' meeting, (ii) the beneficial owner(s), if different, on whose behalf the nominations or business proposed to be brought before a stockholders' meeting is made and (iii) any affiliate or associate of such stockholder of record or beneficial owner.
- (b) **"Public Announcement"** means disclosure in a press release reported by the Dow Jones News Service, Associated Press or comparable national news service or in a document publicly filed by the Corporation with the Securities and Exchange Commission pursuant to Section 13, 14 or 15(d) of the Securities Exchange Act of 1934, as amended (the "**Exchange Act**").
- (c) **"Solicitation Statement"** means a statement whether or not the stockholder giving the notice and/or the other Proposing Person(s), if any, will deliver a proxy statement and form of proxy to holders of, in the case of a business proposal, at least the percentage of voting power of all of the shares of capital stock of the Corporation required under applicable law to approve the proposal or, in the case of a nomination or nominations, at least the percentage of voting power of all of the shares of capital stock of the Corporation reasonably believed by such Proposing Person to be sufficient to elect the nominee or nominees proposed to be nominated by such Proposing Person.
- (d) **"Synthetic Equity Interest"** means any transaction, agreement or arrangement (or series of transactions, agreements or arrangements), including, without limitation, any derivative, swap, hedge, repurchase or so-called "stock borrowing" agreement or arrangement, the purpose or effect of which is to, directly or indirectly: (i) give a person or entity economic benefit and/or risk similar to ownership of shares of any class or series of capital stock of the Corporation, in whole or in part, including due to the fact that such transaction, agreement or arrangement provides, directly or indirectly, the opportunity to profit or avoid a loss from any increase or decrease in the value of any shares of any class or series of capital stock of the Corporation, (ii) mitigate loss to, reduce the economic risk of or manage the risk of share price changes for, any person or entity with respect to any shares of any class or series of capital stock of the Corporation, (iii) otherwise provide in any manner the opportunity to profit or avoid a loss from any decrease in the value of any shares of any class or series of capital stock of the Corporation, or (iv) increase or decrease the voting power of any person or entity with respect to any shares of any class or series of capital stock of the Corporation.
- (e) **"Timely Notice"** means a Proposing Person's written notice, which shall be received by the secretary of the Corporation at the principal executive offices of the Corporation not later than the close of business on the ninetieth (90th) day nor earlier than the close of business on the one hundred twentieth (120th) day prior to the one-year anniversary of the preceding year's annual meeting of stockholders; provided, however, that in the event the annual meeting of stockholders is held more than thirty (30) days before or more than sixty (60) days after such anniversary date, or if no annual meeting of stockholders was

~~held in the preceding year, to be timely, the notice by the Proposing Person must be received by the secretary of the Corporation at the principal executive offices of the Corporation not later than the close of business on the later of the ninetieth (90th) day prior to the scheduled date of such annual meeting of stockholders or the tenth (10th) day following the day on which Public Announcement of the date of such meeting is first made.~~

**Section 2.2. Powers.** Except as reserved to the stockholders by law, by the Certificate of Incorporation or by these By-laws, the business of the corporation shall be managed under the direction of ~~the~~ board of directors, who shall have and may exercise all of the powers of the corporation. In particular, and without limiting the foregoing, the board of directors shall have the power to issue or reserve for issuance from time to time the whole or any part of the capital stock of the corporation which may be authorized from time to time to such person, for such consideration and upon such terms and conditions as they shall determine, including the granting of options, warrants or conversion or other rights to stock.

**Section 2.3. Number of Directors: Qualifications.** The board of directors shall consist of such number of directors, not less than 3 nor more than 12, as shall be fixed initially by the incorporator(s) and thereafter by the board of directors. No director need be a stockholder.

**Section 2.4. Nomination of Directors; Proposals for Other Business.**

(a)

Annual Meetings of Stockholders.

- (1) ~~(a) Nominations for the election of directors may be made by or proposals for other business to be brought before an annual meeting of stockholders may, in each case, be made at an annual meeting of stockholders only (i) if brought before the meeting by the Corporation and specified in the Corporation's notice of meeting delivered pursuant to Section 1.3, (ii) if brought before such annual meeting by or at the direction of the board of directors or (iii) if brought before such annual meeting by any stockholder who (a) is entitled to vote for the election of directors. ~~Nominations by~~ at the meeting, (b) was a stockholder of record (and, with respect to any beneficial owner, if different, on whose behalf any nomination or proposal for other business is made, only if such beneficial owner of shares of stock of the Corporation) at the time of giving of notice provided for in these By-laws and at the time of such annual meeting, (c) is present (in person or by proxy) at the meeting and (d) complies with the notice procedures set forth in these By-laws as to such nomination or proposal for other business. For the avoidance of doubt, other than matters properly brought under Rule 14a-8 (or any successor rule) under the Exchange Act, the foregoing sentence shall describe the exclusive means for a stockholder to bring nominations or other business before an annual meeting, and such stockholder must comply with the notice and other procedures set forth in this Section 2.4 to bring such nominations or other business properly before an annual meeting of stockholders shall.~~

- (2) ~~be made by~~ For nominations or other business to be properly brought before an annual meeting of stockholders by a stockholder pursuant to Section 2.4(a)(1)(iii) above, the Proposing Person must (i) have given Timely Notice thereof in writing and in proper form, delivered or mailed by first class United States mail, postage prepaid, to the secretary of the Corporation ~~not less than 45 days nor more than 60 days prior to any meeting of the stockholders called for the election of directors and~~ (ii) have provided any updates or supplements to such notice at the times and in the forms required by this Section 2.4. In no event shall any adjournment of an annual meeting of stockholders or the announcement thereof commence a new time period (or extend any time period) for the giving of a stockholder's notice. To be in proper form, such stockholder's Timely Notice shall set forth:
- (b) Each notice under subsection (a) shall set forth (i) the name, age, business address and, if known, residence address of each nominee proposed in such notice; (ii) the principal occupation or employment of each such nominee, and (iii) the number of shares of stock of the corporation which are beneficially owned by each such nominee.
- (c) The chairman of the meeting of stockholders may, if the facts warrant, determine and declare to the meeting that a nomination was not made in accordance with the foregoing procedure, and if he should so determine, he shall so declare to the meeting and the defective nomination shall be disregarded.

(A)

as to each Proposing Person:

- (i) (a) the name and address of the Proposing Person giving the notice (including, if applicable, as they appear on the Corporation's books); (b) the class or series and number of all shares of capital stock of the Corporation which are, directly or indirectly, owned of record or beneficially (for purposes of these By-laws, as such term is defined in Rule 13d-3 promulgated under the Exchange Act) by such Proposing Person or any of its affiliates or associates (for purposes of these By-laws, as such terms are defined in Rule 12b-2 promulgated under the Exchange Act), including any shares of any class or series of capital stock of the Corporation as to which such Proposing Person or any of its affiliates or associates has a right to acquire beneficial ownership at any time in the future; (c) all Synthetic Equity Interests (as defined below) in which such Proposing Person or any of its affiliates or associates, directly or indirectly, holds an interest including a description of the material terms of each such Synthetic Equity Interest, including without limitation, identification of the counterparty to each such Synthetic Equity Interest and disclosure, for each such Synthetic Equity Interest, as to (1) whether or not such Synthetic Equity Interest conveys any voting rights, directly or indirectly, in such shares to such Proposing Person, (2) whether or not such Synthetic Equity Interest is required to be, or is capable of being, settled through delivery of such shares and (3) whether or not such Proposing Person and/or, to the extent known, the counterparty to such Synthetic Equity Interest has entered into other transactions that hedge or mitigate the economic effect of such Synthetic Equity Interest; (d) any proxy (other than a revocable proxy given in response to a public proxy solicitation made pursuant to, and in accordance with, Section 14(a) of the Exchange Act by way of a

solicitation statement filed on Schedule 14A), agreement, arrangement, understanding or relationship pursuant to which such Proposing Person has or shares a right to, directly or indirectly, vote any shares of any class or series of capital stock of the Corporation; (e) any rights to dividends or other distributions on the shares of any class or series of capital stock of the Corporation, directly or indirectly, owned beneficially by such Proposing Person that are separated or separable from the underlying shares of the Corporation, and (f) any performance-related fees (other than an asset-based fee) that such Proposing Person, directly or indirectly, is entitled to based on any increase or decrease in the value of shares of any class or series of capital stock of the Corporation or any Synthetic Equity Interests (the disclosures to be made pursuant to the foregoing clauses (b) through (f), "**Material Ownership Interests**"); provided, however, that Material Ownership Interests shall not include any such disclosures with respect to the ordinary course business activities of any broker, dealer, commercial bank, trust company or other nominee who is a Proposing Person solely as a result of being the stockholder of record directed to prepare and submit the information required by this Section 2.4(a)(2)(A)(i) on behalf of a beneficial owner;

(ii) a description of the material terms of all agreements, arrangements or understandings, (whether or not in writing) entered into by any Proposing Person, in the case of nominations, each person, if any, whom a Proposing Person proposes to nominate for election or re-election as a director(s) (each, a "**Proposed Nominee**"), or any of the Proposing Person's respective affiliates or associates, with any other person for the purpose of acquiring, holding, disposing or voting of any shares of any class or series of capital stock of the Corporation;

(iii) (a) a description of all agreements, arrangements or understandings by and among any of the Proposing Persons, or by and among any Proposing Persons and any other person (including with any Proposed Nominee(s)), pertaining to the nomination(s) or other business proposed to be brought before the annual meeting of stockholders (which description shall identify the name of each other person who is party to such an agreement, arrangement or understanding) and (b) identification of the names and addresses of other stockholders (including beneficial owners) known by any of the Proposing Persons to support such nominations or other business proposal(s), and to the extent known, the class and number of all shares of the Corporation's capital stock owned of record or beneficially by such other stockholder(s) or other beneficial owner(s);

(iv) in the case of nominations, a description of all direct and indirect compensation and other material monetary agreements, arrangements and understandings during the past three (3) years, and any other material relationships, between or among any Proposing Person, on the one hand, and each Proposed Nominee or his or her respective affiliates and associates, on the other hand, including, without limitation, all information that would be required to be disclosed pursuant to Item 404 under Regulation S-K of the Securities and Exchange Commission if such Proposing Person were the "registrant" for purposes of such

regulation and the Proposed Nominee were a director or executive officer of such registrant;

(v) a representation that such Proposing Person is a record holder of the stock of the Corporation at the timing of the giving of the notice, will be entitled to vote at the annual meeting of stockholders and intends to appear in person or by proxy at such annual meeting to nominate the Proposed Nominees named in its notice or, for any proposal that relates to any business other than nominations for election of directors, to bring such business before the annual meeting;

(vi) with respect to nominations, a written representation and agreement that the Proposed Nominee (a) understands his or her duties as a director under the General Corporation Law of the State of Delaware and agrees to act in accordance with those duties while serving as a director, (b) is not or will not become a party to any agreement, arrangement or understanding with, and has not given any commitment or assurance to, any person or entity as to how such nominee, if elected as a director, will act or vote as a director on any issue or question to be decided by the board of directors, in any case, to the extent that such arrangement, understanding, commitment or assurance (1) could limit or interfere with the Proposed Nominee's ability to comply, if elected as director of the Corporation, with his or her fiduciary duties under applicable law or with Corporation policies and guidelines applicable to directors generally or (2) has not been disclosed to the Corporation prior to or concurrently with the Proposing Person's submission of the nomination, (c) if elected as a director, will comply with all applicable laws and stock exchange listing standards and the Corporation's policies and guidelines applicable to directors, (d) is not or will not become a party to any direct or indirect compensation or other monetary agreement, arrangement or understanding with any person or entity other than the Corporation (including, without limitation, any agreement, arrangement or understanding with respect to any direct or indirect compensation, reimbursement or indemnification) in connection with service or action as a director that has not been disclosed to the Corporation prior to or concurrently with the Proposing Person's submission of the nomination, and (e) will provide (1) facts and other information in all communications with the Corporation and its stockholders that are or will be true and correct in all material respects and do not and will not omit to state a material fact necessary in order to make the statements made, in light of the circumstances under which they were made, not misleading and (2) all completed and signed questionnaires required generally of the Corporation's directors;

(vii) a Solicitation Statement; and

(viii) any other information relating to such Proposing Person or the proposed business (including, as applicable, information about any Proposed Nominee, including such Proposed Nominee's written consent to being named in the proxy statement as a nominee and to serving as a director if elected) that would be required to be disclosed in a proxy statement or other filing required to be made in connection with

solicitations of proxies in support of the nomination for election of directors or the other business proposed to be brought before the annual meeting of stockholders pursuant to Section 14(a) of the Exchange Act.

- (B) with respect to nominations, the following information as to each Proposed Nominee:
- (i) the name, age, business address and, if known, residence address of the Proposed Nominee;
  - (ii) the principal occupation or employment of the Proposed Nominee; and
  - (iii) the class or series and number of shares of capital stock of the Corporation that are, directly or indirectly, owned of record or beneficially by the Proposed Nominee, including any shares of any class or series of the capital stock of the Corporation as to which such Proposed Nominee has a right to acquire beneficial ownership at any time in the future.

(C) as to any other business other than nominations that the Proposing Person proposes to bring before the annual meeting of stockholders, in addition to the information set forth in Section 2.4(a)(2)(A):

- (i) a reasonably brief description of the business desired to be brought before the annual meeting of stockholders, the reasons for conducting such business at the annual meeting of stockholders, and any material interest in such business of each Proposing Person; and
- (ii) the text of the proposal or the business (including the text of any resolutions proposed for resolution).

(3) The Corporation may also require any Proposed Nominee for election to the board of directors of the Corporation to furnish such other information (i) as may be reasonably required by the Corporation to determine the eligibility of such Proposed Nominee to serve as an independent director of the Corporation in accordance with the Corporation's policies and guidelines applicable to directors as then in effect or (ii) that could be material to a reasonable stockholder's understanding of the independence, or lack thereof, of such Proposed Nominee.

(4) A Proposing Person providing Timely Notice of nominations or business proposed to be brought before an annual meeting of stockholders shall further update and supplement such notice, if necessary, so that the information (including, without limitation, the Material Ownership Interests information) provided or required to be provided in such notice pursuant to these By-laws shall be true and correct as of the record date for the annual meeting of stockholders and as of the date that is ten (10) business days prior to such annual meeting of stockholders or any adjournment or postponement thereof, and such update and supplement, (i) where required to be made as of the record date, shall be received by the secretary at the principal executive offices of the Corporation not later than the close of business on the fifth (5th) business day after the record date for the annual meeting of stockholders, and (ii) where required to be made as of ten (10) business days prior to the annual meeting of stockholders or any adjournment or postponement thereof, shall be made not later than the close of business

on the eighth (8th) business day prior to the date of the annual meeting of stockholders or, if practicable, any adjournment or postponement thereof (and, if not practicable, on the first practicable date prior to the date to which the annual meeting of stockholders has been adjourned or postponed),

(b) Special Meetings of Stockholders.

Only such business shall be conducted at a special meeting of stockholders as shall have been brought before the meeting by or at the direction of the Corporation's board of directors. Nominations of persons for election to the board of directors may be made at a special meeting of stockholders at which directors are to be elected (i) by or at the direction of the board of directors or (ii) provided that the board of directors has determined that the special meeting of stockholders is being called in accordance with Section 1.2 for the purpose of electing directors, by any stockholder of the Corporation who (1) is a stockholder of record both at the time of giving of notice provided for in this Section 2.4(b) and at the time of the meeting, (2) is entitled to vote at the meeting, and (3) complies with the provisions of this Section 2.4(b). For nominations or other business to be properly brought before a special meeting of stockholders by a stockholder pursuant to Section 2.4(b)(ii) above, the stockholder's notice shall contain all of the information required by Section 2.4(a)(2) and (3), as updated consistent with the procedures set forth in Section 1.3(a)(4), and be received by the secretary of the Corporation at the principal executive offices of the Corporation not earlier than the close of business on the one hundred twentieth (120th) day prior to the scheduled date for such special meeting of stockholders and not later than the close of business on the later of the ninetieth (90th) day prior to the scheduled date of such special meeting of stockholders or the tenth (10th) day following the day of the Public Announcement of the date of such meeting and of the nominees proposed by the board of directors to be elected at the special meeting of stockholders is first made. The announcement of a postponement of a special meeting of stockholders after notice of the meeting has been given or an adjournment of a special meeting of stockholders shall not commence a new time period for the giving of a stockholder's notice as described in this Section 2.4(b).

(c) General.

(1) Only such persons who are nominated in accordance with the provisions of these By-laws shall be eligible for election and to serve as directors and only such business shall be conducted at an annual meeting of stockholders or special meeting of stockholders as shall have been brought before the meeting in accordance with the provisions of these By-laws or in accordance with Rule 14a-8 under the Exchange Act. The board of directors or a designated committee thereof shall have the power to determine whether a nomination or any business proposed to be brought before the annual meeting of stockholders or special meeting of stockholders was made in accordance with the provisions of these By-laws. If neither the board of directors nor such designated committee makes a determination as to whether any nomination or other stockholder proposal was made in accordance with the provisions of these By-laws, the presiding officer of the annual meeting of stockholders or special meeting of stockholders shall have the power and duty to determine whether the nomination or other stockholder proposal was made in accordance with the provisions of these By-laws. If the board of directors or a designated committee thereof or the presiding officer, as applicable, determines that nomination or other stockholder proposal was not made in accordance with the provisions of these By-laws, such nomination or other stockholder proposal shall

be disregarded and shall not be presented for action at the annual meeting of stockholders or special meeting of stockholders.

(2) Except as otherwise required by law, nothing in this Section 2.4 shall obligate the Corporation or the board of directors to include in any proxy statement or other stockholder communication distributed on behalf of the Corporation or the board of directors information with respect to any nominee for director or any other matter of business submitted by a stockholder.

(3) Notwithstanding the foregoing provisions of this Section 2.4, if the stockholder (or a qualified representative of the stockholder) does not appear at the annual meeting of stockholders or special meeting of stockholders to present a nomination or any business proposed by such stockholder, such nomination or business shall be disregarded, notwithstanding that proxies in respect of such vote may have been received by the Corporation. For purposes of this Section 2.4, to be considered a qualified representative of the proposing stockholder, a person must be authorized by a written instrument executed by such stockholder or an electronic transmission delivered by such stockholder to act for such stockholder as proxy at the annual meeting of stockholders or special meeting of stockholders, and such person must produce such written instrument or electronic transmission, or a reliable reproduction of the written instrument or electronic transmission, to the presiding officer at the meeting of stockholders.

(4) Notwithstanding the foregoing provisions of these By-laws, a stockholder shall also comply with all applicable requirements of the Exchange Act and the rules and regulations thereunder with respect to the matters set forth in these By-laws.

(5) Notwithstanding anything in this Article II to the contrary, in the event that the number of directors to be elected to the board of directors is enlarged pursuant to Section 2.7 and there is no Public Announcement naming all of the nominees for director or specifying the size of the increased board of directors made by the Corporation at least ten (10) days before the last day a stockholder may deliver a notice of nomination that qualifies as a Timely Notice under Section 2.4(a)(2), a stockholder's notice required by these By-laws shall still be considered a Timely Notice, but only with respect to nominees for any new positions created by such increase, if it shall be received by the secretary of the Corporation not later than the close of business on the tenth (10th) day following the day on which such Public Announcement is first made by the Corporation.

(6) Nothing in these By-laws shall be deemed to affect any rights of (i) stockholders to have proposals included in the Corporation's proxy statement pursuant to Rule 14a-8 (or any successor rule), as applicable, under the Exchange Act and, to the extent required by such rule, have such proposals considered and voted on at an annual meeting of stockholders or (ii) the holders of any series of preferred stock to elect directors under specified circumstances.

**Section 2.5.**

**Election and Term of Office.**

- (a) Commencing at the annual meeting of the stockholders in 1995, the directors shall be divided into three classes, designated Class I, Class II and Class III. Each class shall consist, as nearly as may be possible, of one third of the number of directors constituting the entire Board of Directors. At the annual meeting of the stockholders held in 1995, Class I directors shall be elected for a one year term, Class II directors shall be elected for a two year term, and Class III directors shall be elected for a three year term, and in each case until their successors are duly elected and qualified. Commencing in 1996, at each



annual meeting of the stockholders, successors to the class of directors whose terms expire at that annual meeting of stockholders shall be elected by stockholders for a three year term and until their successors are duly elected and qualified. If the number of directors constituting the entire Board of Directors shall be changed, the increase or decrease shall be apportioned among the classes so as to maintain the number of directors in each class as nearly equal as possible.

- (b) Any director elected to fill a vacancy resulting from an increase in any class or from the removal from office, death, disability, resignation or disqualification of a director or other cause shall hold office for the remaining term ~~of the~~ of the class to which such director is elected. No decrease in the size of the Board of Directors shall have the effect of removing or shortening the term of any incumbent director.
- (c) Whenever the holders of any series of preferred stock issued pursuant to the provisions of the Certificate of Incorporation of the Corporation shall have the right, voting as a separate class, to elect directors, the election, term of office, filling of vacancies and other terms of such directorships shall be governed by the terms of the Certificate of Incorporation applicable to such series, as the case may be, and such directorships shall not be divided into classes unless expressly so provided therein.

**Section 2.6. Vacancies.** Any vacancy in the board of directors, however occurring, including a vacancy resulting from the enlargement of the board of directors, may be filled in the manner provided in the Certificate of Incorporation of the corporation.

**Section 2.7. Enlargement of the Board.** The board of directors may be enlarged in the manner provided in the Certificate of Incorporation of the corporation.

**Section 2.8. Resignation.** Any director may resign by delivering or mailing postage prepaid a written resignation to the corporation at its principal office or to the chairman of the board of directors, president, secretary or assistant secretary, if any. Such resignation shall be effective upon receipt unless it is specified to be effective at some other time or upon the happening of some other event.

**Section 2.9. Removal.** A director, whether elected by the stockholders or directors, may be removed from office in the manner provided in the Certificate of Incorporation of the corporation.

**Section 2.10. Meetings.** Regular meetings of the board of directors may be held without call or notice at such times and such places within or without the State of Delaware as the Board may, from time to time, determine, provided that notice of the first regular meeting following any such determination shall be given to directors absent from such determination. A regular meeting of the board of directors shall be held without notice immediately after, and at the same place as, the annual meeting of the stockholders or the special meeting of the stockholders held in place of such annual meeting, unless a quorum of the directors is not then present. Special meetings of the board of directors may be held at any time and at any place designated in the call of the meeting when called by the president, treasurer, or one or more directors. Members of the board of directors or any committee elected thereby may participate in a meeting of such board or committee by means of a conference telephone or similar communications equipment by means of which all persons participating in the meeting can hear each other at the same time, and participation by such means shall constitute presence in person at the meeting.

**Section 2.11. Notice of Meeting.** It shall be sufficient notice to a director to send notice by mail at least seventy-two (72) hours before the meeting addressed to such person at his usual or last known business or residence address or to give notice to such person in person or by telephone at least twenty-four (24) hours before the meeting. Notice shall be given by the secretary, assistant secretary, if any, or by the officer or directors calling the meeting. The requirement of notice to any director may be

waived by a written waiver of notice, executed by such person before or after the meeting or meetings, and filed with the records of the meeting, or by attendance at the meeting without protesting prior thereto or at its commencement the lack of notice. A notice or waiver of notice of a directors' meeting need not specify the purposes of the meeting.

**Section 2.12. Agenda.** Any lawful business may be transacted at a meeting of the board of directors, notwithstanding the fact that the nature of the business may not have been specified in the notice or waiver of notice of the meeting.

**Section 2.13. Quorum.** At any meeting of the board of directors, a majority of the directors then in office shall constitute a quorum for the transaction of business. Any meeting may be adjourned by a majority of the votes cast upon the question, whether or not a quorum is present, and the meeting may be held as adjourned without further notice.

**Section 2.14. Action at Meeting.** Any motion adopted by vote of the majority of the directors present at a meeting at which a quorum is present shall be the act of the board of directors, except where a different vote is required by law, by the Certificate of Incorporation or by these By-laws. Members of the Board may participate in any meeting of the Board by means of conference telephone or similar communications equipment by means of which all persons participating in the meeting can hear each other, and participation in any meeting pursuant to this provision shall constitute presence in person at such meeting. The assent in writing or by electronic transmission of any director to any vote or action of the directors taken at any meeting, whether or not a quorum was present and whether or not the director had or waived notice of the meeting, shall have the same effect as if the director so assenting was present at such meeting and voted in favor of such vote or action.

**Section 2.15. Action Without Meeting.** Any action by the directors may be taken without a meeting if all of the directors consent to the action in writing or by electronic transmission, and the consents in writing or by electronic transmission are subsequently filed with the records of the directors' meetings. Such filing shall be in paper form if the records are maintained in paper form and shall be in electronic form if the records are maintained in electronic form. Such consent shall be treated for all purposes as a vote of the directors at a meeting.

**Section 2.16. Committees.** The board of directors may, by the affirmative vote of a majority of the directors then in office, appoint an executive committee or other committees consisting of one or more directors and may by vote delegate to any such committee some or all of their powers except those which by law, the Certificate of Incorporation or these By-laws they may not delegate. Unless the board of directors shall otherwise provide, any such committee may make rules for the conduct of its business, but unless otherwise provided by the board of directors or such rules, its meetings shall be called, notice given or waived, its business conducted or its action taken as nearly as may be in the same manner as is provided in these By-laws with respect to meetings or for the conduct of business or the taking of actions by the board of directors. The board of directors shall have power at any time to fill vacancies in, change the membership of, or discharge any such committee at any time. The board of directors shall have power to rescind any action of any committee, but no such rescission shall have retroactive effect.

### ARTICLE III. Officers

**Section 3.1. Enumeration.** The officers shall consist of a chairman of the board of directors, president, executive vice-president, a treasurer, a secretary and such other officers and agents (including one or more additional vice-presidents, assistant treasurers and assistant secretaries), as the board of directors may, in their discretion, determine.

**Section 3.2. Election.** The chairman of the board of directors, president, executive ~~vice~~-vice-president, treasurer and secretary shall be elected annually by the directors at their first meeting following the annual meeting of the stockholders or any special meeting held in lieu of the annual meeting. Other officers may be chosen by the directors at such meeting or at any other meeting.

**Section 3.3. Qualification.** An officer may, but need not, be a director or stockholder. Any two or more offices may be held by the same person. Any officer may be required by the directors to give bond for the faithful performance of his duties to the corporation in such amount and with such sureties as the directors may determine. The premiums for such bonds may be paid by the corporation.

**Section 3.4. Tenure.** Except as otherwise provided by the Certificate of Incorporation or these By-laws, the term of office of each officer shall be for one year or until his successor is elected and qualified or until his earlier resignation or removal.

**Section 3.5. Removal.** Any officer may be removed from office, with or without cause, by the affirmative vote of a majority of the directors then in office; provided, however, that an officer may be removed for cause only after reasonable notice and opportunity to be heard by the board of directors prior to action thereon.

**Section 3.6. Resignation.** Any officer may resign by delivering or mailing postage prepaid a written resignation to the corporation at its principal office or to the chairman of the board of directors, president, secretary, or assistant secretary, if any, and such resignation shall be effective upon receipt unless it is specified to be effective at some other time or upon the happening of some event.

**Section 3.7. Vacancies.** A vacancy in any office arising from any cause may be filled for the unexpired portion of the term by the board of directors.

**Section 3.8. Chairman of the Board.** The chairman of the board of directors shall have such duties and powers as are commonly incident to such office and such other duties and powers as the board of directors may from time to time determine. He shall preside, when present, at all meetings of the board of directors. If so elected by the board of directors, the chairman of the board of directors may also serve as chief executive officer of the corporation.

**Section 3.9. Chief Executive Officer.** The chief executive officer shall, subject to the direction of the board of directors, have general supervision and control of the corporation's business and shall have such powers and duties as are commonly incident to such office.

**Section 3.10. President.** The president shall have such powers and shall perform such duties as the board of directors may from time to time designate. The president shall serve as the chief executive officer of the corporation if he shall be so elected by the board of directors.

Except as otherwise voted by the board of directors, the president shall preside at all meetings of the stockholders, and shall preside at meetings of the board of directors if the chairman of the board is not present at such meetings.

**Section 3.11. Executive Vice-President; Vice-President(s).** In the absence of either the chairman of the board of directors or the president, the executive vice-president shall have and may exercise all of the powers of the officer who is absent. The executive vice-president and any additional vice-presidents, shall have such other powers and perform such duties as the board of directors may from time to time determine.

**Section 3.12. Treasurer and Assistant Treasurers.** The treasurer, subject to the direction and under the supervision and control of the board of directors, shall have general charge of the financial affairs of the corporation. The treasurer shall have custody of all funds, securities and valuable papers of

the corporation, except as the board of directors may otherwise provide. The treasurer shall keep or cause to be kept full and accurate records of account which shall be the property of the corporation, and which shall be always open to the inspection of each elected officer and director of the corporation. The treasurer shall deposit or cause to be deposited all funds of the corporation in such depository or depositories as may be authorized by the board of directors. The treasurer shall have the power to endorse for deposit or collection all notes, checks, drafts, and other negotiable instruments payable to the corporation. The treasurer shall perform such other duties as are incidental to the office, and such other duties as may be assigned by the board of directors.

Assistant treasurers, if any, shall have such powers and perform such duties as the board of directors may from time to time determine.

**Section 3.13. Secretary and Assistant Secretaries.** The secretary shall record, or cause to be recorded, all proceedings of the meetings of the stockholders and directors (including committees thereof) in the book of records of this corporation. The record books shall be open at reasonable times to the inspection of any stockholder, director, or officer. The secretary shall notify the stockholders and directors, when required by law or by these By-laws, of their respective meetings, and shall perform such other duties as the directors and stockholders may from time to time prescribe. The secretary shall have the custody and charge of the corporate seal, and shall affix the seal of the corporation to all instruments requiring such seal, and shall certify under the corporate seal the proceedings of the directors and of the stockholders, when required. In the absence of the secretary at any such meeting, a temporary secretary shall be chosen who shall record the proceedings of the meeting in the aforesaid books.

Assistant secretaries, if any, shall have such powers and perform such duties as the board of directors may from time to time designate.

**Section 3.14. Other Powers and Duties.** Subject to these By-laws and to such limitations as the board of directors may from time to time prescribe, the officers of the corporation shall each have such powers and duties as generally pertain to their respective offices, as well as such powers and duties as from time to time may be conferred by the board of directors.

#### **ARTICLE IV. Capital Stock**

**Section 4.1. Stock Certificates.** Each stockholder shall be entitled to a certificate representing the number of shares of the capital stock of the corporation owned by such person in such form as shall, in conformity to law, be prescribed from time to time by the board of directors. Each certificate shall be signed by the chairman of the board of directors, the president or any vice-president and by the secretary, assistant secretary or treasurer or assistant treasurer, or such other officers designated by the board of directors from time to time as permitted by law, shall bear the seal of the corporation, and shall express on its face its number, date of issue, class, the number of shares for which, and the name of the person to whom, it is issued. The corporate seal and any or all of the signatures of corporation officers may be facsimile if the stock certificate is manually counter-signed by an authorized person on behalf of a transfer agent or registrar other than the corporation or its employee.

If an officer, transfer agent or registrar who has signed, or whose facsimile signature has been placed on, a certificate shall have ceased to be such before the certificate is issued, it may be issued by the corporation with the same effect as if he were such officer, transfer agent or registrar at the time of its issue.

**Section 4.2. Transfer of Shares.** Title to a certificate of stock and to the shares represented thereby shall be transferred only on the books of the corporation by delivery to the corporation or its transfer agent of the certificate properly endorsed, or by delivery of the certificate accompanied by a

written assignment of the same, or a properly executed written power of attorney to sell, assign or transfer the same or the shares represented thereby. Upon surrender of a certificate for the shares being transferred, a new certificate or certificates shall be issued according to the interests of the parties.

**Section 4.3. Record Holders.** Except as otherwise may be required by law, by the Certificate of Incorporation or by these By-laws, the corporation shall be entitled to treat the record holder of stock as shown on its books as the owner of such stock for all purposes, including the payment of dividends and the right to vote with respect thereto, regardless of any transfer, pledge or other disposition of such stock, until the shares have been transferred on the books of the corporation in accordance with the requirements of these By-laws.

It shall be the duty of each stockholder to notify the corporation of his post office address.

**Section 4.4. Record Date.** In order that the corporation may determine the stockholders entitled to receive notice of or to vote at any meeting of stockholders or any adjournments thereof, or to express consent to corporate action in writing without a meeting, or entitled to receive payment of any dividend or other distribution or allotment of any rights, or entitled to exercise any rights in respect of any change, conversion or exchange of stock or for the purpose of any other lawful action, the board of directors may fix, in advance, a record date, which shall not be more than sixty days prior to any other action. In such case only stockholders of record on such record date shall be so entitled notwithstanding any transfer of stock on the books of the corporation after the record date.

If no record date is fixed: (i) the record date for determining stockholders entitled to receive notice of or to vote at a meeting of stockholders shall be at the close of business on the day next preceding the day on which notice is given, or, if notice is waived, at the close of business on the day next preceding the day on which the meeting is held; (ii) the record date for determining stockholders entitled to express consent to corporate action in writing without a meeting, when no prior action by the board of directors is necessary, shall be the day on which the first written consent is expressed; and (iii) the record date for determining stockholders for any other purpose shall be at the close of business on the day on which the board of directors adopts the resolution relating thereto.

**Section 4.5. Transfer Agent and Registrar for Shares of Corporation.** The board of directors may appoint a transfer agent and a registrar of the certificates of stock of the corporation. Any transfer agent so appointed shall maintain, among other records, a stockholders' ledger, setting forth the names and addresses of the holders of all issued shares of stock of the corporation, the number of shares held by each, the certificate numbers representing such shares, and the date of issue of the certificates representing such shares. Any registrar so appointed shall maintain, among other records, a share register, setting forth the total number of shares of each class of shares which the corporation is authorized to issue and the total number of shares actually issued. The stockholders' ledger and the share register are hereby identified as the stock transfer books of the corporation; but as between the stockholders' ledger and the share register, the names and addresses of stockholders, as they appear on the stockholders' ledger maintained by the transfer agent shall be the official list of stockholders of record of the corporation. The name and address of each stockholder of record, as they appear upon the stockholders' ledger, shall be conclusive evidence of who are the stockholders entitled to receive notice of the meetings of stockholders, to vote at such meetings, to examine a complete list of the stockholders entitled to vote at meetings, and to own, enjoy and exercise any other property or rights deriving from such shares against the corporation. Stockholders, but not the corporation, its directors, officers, agents or attorneys, shall be responsible for notifying the transfer agent, in writing, of any changes in their names or addresses from time to time, and failure to do so will relieve the corporation, its other stockholders, directors, officers, agents and attorneys, and its transfer agent and registrar, of liability for failure to direct notices or other documents, or pay over or transfer dividends or other property or rights, to a name or

address other than the name and address appearing in the stockholders' ledger maintained by the transfer agent.

**Section 4.6. Loss of Certificates.** In case of the loss, destruction or mutilation of a certificate of stock, a replacement certificate may be issued in place thereof upon such terms as the board of directors may prescribe, including, in the discretion of the board of directors, a requirement of bond and indemnity to the corporation.

**Section 4.7. Restrictions on Transfer.** Every certificate for shares of stock which are subject to any restriction on transfer, whether pursuant to the Certificate of Incorporation, the By-laws or any agreement to which the corporation is a party, shall have the fact of the restriction noted conspicuously on the certificate and shall also set forth on the face or back either the full text of the restriction or a statement that the corporation will furnish a copy to the holder of such certificate upon written request and without charge.

**Section 4.8. Multiple Classes of Stock.** The amount and classes of the capital stock and the par value, if any, of the shares, shall be as fixed in the Certificate of Incorporation. At all times when there are two or more classes of stock, the several classes of stock shall conform to the description and the terms and have the respective preferences, voting powers, restrictions and qualifications set forth in the Certificate of Incorporation and these By-laws. Every certificate issued when the corporation is authorized to issue more than one class or series of stock shall set forth on its face or back either (i) the full text of the preferences, voting powers, qualifications and special and relative rights of the shares of each class and series authorized to be issued, or (ii) a statement of the existence of such preferences, powers, qualifications and rights, and a statement that the corporation will furnish a copy thereof to the holder of such certificate upon written request and without charge.

#### **ARTICLE V. Dividends**

**Section 5.1. Declaration of Dividends.** Except as otherwise required by law or by the Certificate of Incorporation, the board of directors may, in its discretion, declare what, if any, dividends shall be paid from the surplus or from the net profits of the corporation upon the stock of the corporation; provided, however, that no dividend shall be declared or paid the payment of which would diminish the amount of the paid-in capital of the corporation. Dividends may be paid in cash, in property, in shares of the corporation's stock, or in any combination thereof.

Dividends shall be payable upon such dates as the board of directors may designate.

**Section 5.2. Reserves.** Before the payment of any dividend and before making any distribution of profits, the board of directors, from time to time and in its absolute discretion, shall have power to set aside out of the surplus or net profits of the corporation such sum or sums as the board of directors deems proper and sufficient as a reserve fund to meet contingencies or for such other purpose as the board of directors shall deem to be in the best interests of the corporation, and the board of directors may modify or abolish any such reserve.

#### **ARTICLE VI. Powers of Officers to Contract with the Corporation**

Any and all of the directors and officers of the corporation, notwithstanding their official relations to it, may enter into and perform any contract or agreement of any nature between the corporation and themselves, or any and all of the individuals from time to time constituting the board of directors of the corporation, or any firm or corporation in which any such director may be interested, directly or indirectly, whether such individual, firm or corporation thus contracting with the corporation shall

thereby derive personal or corporate profits or benefits or otherwise; provided, that (i) the material facts of such interest are disclosed or are known to the board of directors or committee thereof which authorizes such contract or agreement; (ii) if the material facts as to such person's relationship or interest are disclosed or are known to the stockholders entitled to vote thereon, and the contract is specifically approved in good faith by a vote of the stockholders; or (iii) the contract or agreement is fair as to the corporation as of the time it is authorized, approved or ratified by the board of directors, a committee thereof, or the stockholders. Any director of the corporation who is interested in any transaction as aforesaid may nevertheless be counted in determining the existence of a quorum at any meeting of the board of directors which shall authorize or ratify any such transaction. This Article shall not be construed to invalidate any contract or other transaction which would otherwise be valid under the common or statutory law applicable thereto.

**ARTICLE VII.  
Indemnification**

**Section 7.1.**

**Definitions.** For purposes of this Article VII the following terms shall have the meanings indicated:

- (a) **"Code of Conduct"** means the corporation's Code of Conduct for Directors, Officers and Employees as in effect from time to time.
- (b) **"Corporate Status"** describes the status of a person who is or was a director, officer, employee, agent, trustee or fiduciary of the Corporation or of any other corporation, partnership, joint venture, trust, employee benefit plan or other Enterprise which such person is or was serving at the express written request of the corporation.
- (c) **"Court"** means the Court of Chancery of the State of Delaware, the court in which the Proceeding in respect of which indemnification is sought by a Covered Person shall have been brought or is pending, or another court having subject jurisdiction and personal jurisdiction over the parties.
- (d) **"Covered Person"** means a person who is a present or former director or officer of the corporation and shall include such person's legal representatives, heirs, executors and administrators.
- (e) **"Disinterested Director"** means a director of the corporation who is not and was not a party to the Proceeding in respect of which indemnification is sought by a Covered Person.
- (f) **"Enterprise"** shall mean the corporation and any other corporation, partnership, joint venture, trust, employee benefit plan or other enterprise of which a Covered Person is or was serving at the express written request of the corporation as a director, officer, employee, agent, trustee or fiduciary.
- (g) **"Expenses"** shall include, without limitation, all reasonable attorneys' fees, retainers, court costs, transcript costs, fees of experts, witness fees, travel expenses, duplicating costs, printing and binding costs, telephone charges, postage, delivery service fees, and all other disbursements or expenses of the types customarily incurred in connection with prosecuting, defending, preparing to prosecute or defend, investigating or being or preparing to be a witness in a Proceeding.
- (h) **"Good Faith"** shall mean a Covered Person having acted in good faith and in a manner such Covered Person reasonably believed to be in or not opposed to the best interests of the corporation or, in the case of an Enterprise which is an employee benefit plan, the

best interests of the participants or beneficiaries of said plan, as the case may be, and, with respect to any Proceeding which is criminal in nature, having had no reasonable cause to believe such Covered Person's conduct was unlawful.

- (i) **"Independent Counsel"** means a law firm, or a member of a law firm, that is experienced in matters of corporation law and may include law firms or members thereof that are regularly retained by the corporation but not any other party to the Proceeding giving rise to a claim for indemnification hereunder. Notwithstanding the foregoing, the term "Independent Counsel" shall not include any person who, under the standards of professional conduct then prevailing and applicable to such counsel, would have a conflict of interest in representing either the corporation or Covered Person in an action to determine Covered Person's rights under this Article.
- (j) **"Proceeding"** includes any action, suit, arbitration, alternate dispute resolution mechanism, investigation (including any internal corporate investigation), administrative hearing or any other actual, threatened or completed proceeding whether civil, criminal, administrative or investigative, other than one initiated by the Covered Person. For purposes of the foregoing sentence, a **"Proceeding"** shall not be deemed to have been initiated by the Covered Person where such Covered Person seeks to enforce such Covered Person's rights under this Article.

**Section 7.2.**

**Right to Indemnification in General.**

- (a) **Covered Persons.** In connection with any Proceeding, the corporation shall indemnify, and advance Expenses, to each Covered Person as provided in this Article and to the fullest extent permitted by applicable law in effect on the date hereof and to such greater extent as applicable law may hereafter from time to time permit. The indemnification provisions in this Article shall be deemed to be a contract between the corporation and each Covered Person who serves in any such Corporate Status at any time while these provisions as well as the relevant provisions of the Delaware General Corporation Law are in effect and any repeat or modification thereof shall not affect any right or obligation then existing with respect to any state of facts then or previously existing or any Proceeding previously or thereafter brought or threatened based in whole or in part upon any such state of facts. Such a "contract right" may not be modified retroactively without the consent of such Covered Person.



- (b) **Employees and Agents.** The corporation may, to the extent authorized from time to time by the board of directors, grant indemnification and the advancement of Expenses to any employee or agent of the corporation to the fullest extent of the provisions of this Article with respect to the indemnification and advancement of Expenses of Covered Person.

**Section 7.3. Proceedings Other Than Proceedings by or in the Right of the Corporation.**

- (a) Each Covered Person shall be entitled to the rights of indemnification provided in this Section 7.3 if, by reason of such Covered Person's Corporate Status, such Covered Person is, or is threatened to be made, a party to or is otherwise involved in any Proceeding, other than a Proceeding by or in the right of the corporation. Each Covered Person shall be indemnified against Expenses, judgments, penalties, fines and amounts paid in settlements, actually and reasonably incurred by such Covered Person or on such Covered Person's behalf in connection with such Proceeding or any claim, issue or matter therein, if such Covered Person did not violate the corporation's Code of Conduct and acted in Good Faith. Notwithstanding the foregoing, if such Covered Person shall have been found to have violated the corporation's Code of Conduct then in effect, the corporation may, to the extent authorized by the board of directors, indemnify such Covered Person against Expenses, judgments, penalties, fines and amounts paid in settlement, actually and reasonably incurred by such Covered Person or on such Covered Person's behalf.

**Section 7.4. Proceedings by or in the Right of the Corporation.**

- (a) Each Covered Person shall be entitled to the rights of indemnification provided in this Section 7.4 if, by reason of such Covered Person's Corporate Status, such Covered Person is, or is threatened to be made, a party to or is otherwise involved in any Proceeding brought by or in the right of the corporation to procure a judgment in its favor. Such Covered Person shall be indemnified against Expenses, judgments, penalties, and amounts paid in settlement, actually and reasonably incurred by such Covered Person or on such Covered Person's behalf in connection with such Proceeding if such Covered Person acted in Good Faith. Notwithstanding the foregoing, no such indemnification shall be made in respect of any claim, issue or matter in such Proceeding as to which such Covered Person shall have been adjudged to be liable to the corporation if applicable law prohibits such indemnification; provided, however, that, if applicable law so permits, indemnification shall nevertheless be made by the corporation in such event if and only to the extent that the Court which is considering the matter shall determine.
- (b) Notwithstanding any provision to the contrary in this Section, if the board of directors, Independent Counsel or the stockholders, as the case may be, making the determination with respect to indemnification as provided under Section 7.9 hereof, or the Court considering the matter determines that the act or omission which forms the basis for the claim which is the subject of the Proceeding violated the corporation's Code of Conduct then in effect, then, notwithstanding that fact, the corporation may, to the extent authorized by the board of directors, indemnify such Covered Person against all Expenses, judgments, penalties and amounts paid in settlement, actually and reasonably incurred by such Covered Person or on such Covered Person's behalf in connection with such proceeding if such Covered Person acted in Good Faith.

**Section 7.5. Indemnification of a Party Who is Wholly or Partly Successful.** Notwithstanding any other provision of this Article, to the extent that a Covered Person is, by reason of such Covered Person's Corporate Status, a party to or is otherwise involved in and is successful, on the

merits or otherwise, in any Proceeding, such Covered Person shall be indemnified to the maximum extent permitted by law, against all expenses, judgments, penalties, fines, and amounts paid in settlement, actually and reasonably incurred by such Covered Person or on such Covered Person's behalf in connection therewith. If such Covered Person is not wholly successful in such Proceeding but is successful, on the merits or otherwise, as to one or more but less than all claims, issues or matters in such Proceeding, the corporation shall indemnify such Covered Person to the maximum extent permitted by law, against all Expenses, judgments, penalties, fines, and amounts paid in settlement, actually and reasonably incurred by such Covered Person or on such Covered Person's behalf in connection with each successfully resolved claim, issue or matter. For purposes of this Section 7.5 and without limitation, the termination of any claim, issue or matter in such a Proceeding by dismissal, with or without prejudice, shall be deemed to be a successful result as to such claim, issue or matter.

**Section 7.6. Indemnification for Expenses of a Witness.** Notwithstanding any other provision of this Article, to the extent that a Covered Person is, by reason of such Covered Person's Corporate Status, a witness in any Proceeding, such Covered Person shall be indemnified against all Expenses actually and reasonably incurred by such Covered Person or on such Covered Persons behalf in connection therewith.

**Section 7.7. Advancement of Expenses.** Notwithstanding any provision to the contrary in this Article, the corporation (acting through the chairman of the board, president, executive vice president or any vice president of the corporation) shall advance all reasonable Expenses which, by reason of a Covered Persons Corporate Status, were incurred by or on behalf of such Covered Person in connection with any Proceeding, within twenty (20) days after the receipt by the corporation of a statement or statements from such Covered Person requesting such advance or advances, whether prior to or after final disposition of such Proceeding. Such statement or statements shall reasonably evidence the Expenses incurred by the Covered Person and shall include or be preceded or accompanied by an undertaking by or on behalf of the Covered Person to repay any Expenses if it shall ultimately be determined that such Covered Person is not entitled to be indemnified against such Expenses. Any advance and undertakings to repay pursuant to this Section 7.7 shall be unsecured and interest free. Advancement of Expenses pursuant to this Section 7.7 shall not require approval of the board of directors or the stockholders of the corporation, or of any other person or body. The Secretary of the corporation shall promptly advise the Board in writing of the request for advancement of Expenses, of the amount and other details of the advance and of the undertaking to make repayment pursuant to this Section 7.7.

**Section 7.8. Notification and Defense of Claim.** Promptly after receipt by a Covered Person of notice of the commencement of any Proceeding, such Covered Person shall, if a claim is to be made against the corporation under this Article, notify the corporation of the commencement of the Proceeding. The omission so to notify the corporation will not relieve it from any liability which it may have to such Covered Person otherwise than under this Article. With respect to any such Proceedings to which such Covered Person notifies the corporation:

- (a) ~~(a)~~ The corporation will be entitled to participate in the defense at its own expense.
- (b) Except as otherwise provided below, the corporation jointly with any other indemnifying party similarly notified will be entitled to assume the defense with counsel reasonably satisfactory to the Covered Person. After notice from the corporation to the Covered Person of its election to assume the defense of a suit, the corporation will not be liable to the Covered Person under this Article for any legal or other expenses subsequently incurred by the Covered Person in connection with the defense of the Proceeding other than reasonable costs of investigation or as otherwise provided below. The Covered Person shall have the right to employ his own counsel in such Proceeding but the fees and expenses of such counsel incurred after notice from the corporation of its assumption

of the defense shall be at the expense of the Covered Person unless (i) the employment of counsel by the Covered Person has been authorized by the corporation, (ii) the Covered Person shall have concluded reasonably that there may be a conflict of interest between the corporation and the Covered Person in the conduct of the defense of such action and such conclusion is confirmed in writing by the corporation's outside counsel regularly employed by it in connection with corporate matters, or (iii) the corporation shall not in fact have employed counsel to assume the defense of such Proceeding, in each of which cases the fees and expenses of counsel shall be at the expense of the corporation. The corporation shall not be entitled to assume the defense of any Proceeding brought by or in the right of the corporation or as to which the Covered Person shall have made the conclusion provided for in (ii) above and such conclusion shall have been so confirmed by the corporation's said outside counsel.

- (c) Notwithstanding any provision of this Article to the contrary, the corporation shall not be liable to indemnify the Covered Person under this Article for any amounts paid in settlement of any Proceeding or claim effected without its written consent. The corporation shall not settle any Proceeding or claim in any manner which would impose any penalty, limitation or disqualification of the Covered Person for any purpose without such Covered Person's written consent. Neither the corporation nor the Covered Person will unreasonably withhold their consent to any proposed settlement.
- (d) If it is determined that the Covered Person is entitled to indemnification not covered by defense of the claim afforded under subparagraph (b) above, payment to the Covered Person of the additional amounts to be indemnified shall be made within ten (10) days after determination.

**Section 7.9. Method of Determination.** A determination (if required by applicable law in the specific case) with respect to a Covered Person's entitlement to indemnification shall be made (a) by the board of directors by a majority vote of a quorum consisting of Disinterested Directors, or (b) in the event that a quorum of the Board consisting of Disinterested Directors is not obtainable or, even if obtainable, such quorum of Disinterested Directors so directs, by Independent Counsel in a written opinion to the board of directors, a copy of which shall be delivered to the Covered Person seeking indemnification, or (c) by the holders of a majority of the votes of the outstanding stock at the time entitled to vote on matters other than the election or removal of directors, voting as a single class, including the stock of the Covered Person seeking indemnification.

**Section 7.10. Presumptions and Effect of Certain Proceedings.**

- (a) **Burden of Proof.** In making a determination with respect to entitlement to indemnification hereunder, the person or persons or entity making such determination shall presume that the Covered Person is entitled to indemnification under this Article if such Covered Person has submitted a request for indemnification including such documentation and information as is reasonably available to such Covered Person and is reasonably necessary to determine whether and to what extent such Covered Person is entitled to indemnification and the corporation shall have the burden of proof to overcome that presumption in connection with the making by any person, persons or entity of any determination contrary to that presumption.
- (b) **Effect of Other Proceedings.** The termination of any Proceeding or of any claim, issue or matter therein, by judgment, order, settlement or conviction, or upon a plea of guilty or of nolo contendere or its equivalent, shall not (except as otherwise expressly provided in this Article) of itself adversely affect the right of

an Covered Person to indemnification or create a presumption that an Covered Person violated the corporation's Code of Conduct or did not act in Good Faith.

- (c) **Actions of Others.** The knowledge and/or actions, or failure to act, of any director, officer, employee, agent, trustee or fiduciary of the Enterprise shall not be imputed to a Covered Person for purposes of determining the right to indemnification under this Article.

**Section 7.11. Non-Exclusivity.** The rights of indemnification and to receive advancement of Expenses as provided by this Article shall not be deemed exclusive of any other rights to which a Covered Person may at any time be entitled under applicable law, the Certificate of Incorporation, these By-Laws, any agreement, a vote of stockholders or a resolution of the board of directors, or otherwise. No amendment, alteration, rescission or replacement of this Article or any provision hereof shall be effective as to a Covered Person with respect to any action taken or omitted by such Covered Person in such Covered Person's Corporate Status prior to such amendment, alteration, rescission or replacement.

**Section 7.12. Insurance.** The corporation may maintain, at its expense, an insurance policy or policies to protect itself and any Covered Person, officer, employee or agent of the corporation or another Enterprise against liability arising out of this Article or otherwise, whether or not the corporation would have the power to indemnify any such person against such liability under the Delaware General Corporation Law.

**Section 7.13. No Duplicative Payment.** The corporation shall not be liable under this Article to make any payment of amounts otherwise indemnifiable hereunder if and to the extent that a Covered Person has otherwise actually received such payment under any insurance policy, contract, agreement or otherwise.

**Section 7.14. Severability.** If any provision or provisions of this Article shall be held to be invalid, illegal or unenforceable for any reason whatsoever:

- (a) the validity, legality and enforceability of the remaining provisions of this Article (including without limitation, each portion of any Section of this Article containing any such provision held to be invalid, illegal or unenforceable, that is not itself invalid, illegal or unenforceable) shall not in any way be affected or impaired thereby; and
- (b) to the fullest extent possible, the provisions of this Article (including, without limitation, each portion of any Section of this Article containing any such provision held to be invalid, illegal or unenforceable, that is not itself invalid, illegal or unenforceable) shall be construed so as to give effect to the intent manifested by the provision held invalid, illegal or unenforceable.

#### **ARTICLE VIII Miscellaneous Provisions**

**Section 8.1. Certificate of Incorporation.** All references in these By-laws to the Certificate of Incorporation shall be deemed to refer to the Certificate of Incorporation of the corporation, as amended and in effect from time to time.

**Section 8.2. Fiscal Year.** Except as from time to time otherwise provided by the board of directors, the fiscal year of the corporation shall end on the 31st day of March of each year.

**Section 8.3. Corporate Seal.** The board of directors shall have the power to adopt and alter the seal of the corporation.

**Section 8.4. Execution of Instruments.** All deeds, leases, transfers, contracts, bonds, notes, and other obligations authorized to be executed by an officer of the corporation on its behalf shall be signed by the chairman of the board of directors, the president or the treasurer except as the board of directors may generally or in particular cases otherwise determine.

**Section 8.5. Voting of Securities.** Unless the board of directors otherwise provides, the chairman of the board of directors, the president or the treasurer may waive notice of and act on behalf of this corporation, or appoint another person or persons to act as proxy or attorney in fact for this corporation with or without discretionary power and/or power of substitution, at any meeting of stockholders or shareholders of any other corporation or organization, any of whose securities are held by this corporation.

**Section 8.6. Evidence of Authority.** A certificate by the secretary or any assistant secretary as to any action taken by the stockholders, directors or any officer or representative of the corporation shall, as to all persons who rely thereon in good faith, be conclusive evidence of such action. The exercise of any power which by law, by the Certificate of Incorporation, or by these By-laws, or under any vote of the stockholders or the board of directors, may be exercised by an officer of the corporation only in the event of absence of another officer or any other contingency shall bind the corporation in favor of anyone relying thereon in good faith, whether or not such absence or contingency existed.

**Section 8.7. Corporate Records.** The original, or attested copies, of the Certificate of Incorporation, By-laws, records of all meetings of the incorporators and stockholders, and the stock transfer books (which shall contain the names of all stockholders and the record address and the amount of stock held by each) shall be kept in Delaware at the principal office of the corporation, or at an office of the corporation, or at an office of its transfer agent or of the secretary or of the assistant secretary, if any. Said copies and records need not all be kept in the same office. They shall be available at all reasonable times to inspection of any stockholder for any purpose but not to secure a list of stockholders for the purpose of selling said list or copies thereof or for using the same for a purpose other than in the interest of the applicant, as a stockholder, relative to the affairs of the corporation.

**Section 8.8. Charitable Contributions.** The board of directors from time to time may authorize contributions to be made by the corporation in such amounts as it may determine to be reasonable to corporations, trusts, funds or foundations organized and operated exclusively for charitable, scientific or educational purposes, no part of the net earning of which inures to the private benefit of any stockholder or individual.

#### **ARTICLE IX. Amendments**

**Section 9.1. Amendment by Stockholders.** Prior to the issuance of stock, these By-laws may be amended, altered or repealed by the incorporator(s) by majority vote. After stock has been issued, these By-laws may be amended altered or repeated by the stockholders at any annual or special meeting by vote of a majority of all shares outstanding and entitled to vote, except that where the effect of the amendment would be to reduce any voting requirement otherwise required by law, the Certificate of Incorporation or these By-laws, such amendment shall require the vote that would have been required by such provision. Notice and a copy of any proposal to amend these By-laws must be included in the notice of meeting of stockholders at which action is taken upon such amendment.

**Section 9.2. Amendment by Board of Directors.** These By-laws may be amended or altered by the board of directors at a meeting duly called for the purpose by majority vote of the directors then in office, except that directors shall not amend the By-laws in a manner which:

- (a) changes the stockholder voting requirements for any action;
- (b) alters or abolishes any preferential right or right of redemption applicable to a class or series of stock with shares already outstanding;
- (c) alters the provisions of this Article IX hereof; or
- (d) permits the board of directors to take any action which under law, the Certificate of Incorporation, or these By-laws is required to be taken by the stockholders.

Any amendment of these By-laws by the board of directors may be altered or repealed by the stockholders at any annual or special meeting of stockholders.

**CERTIFICATION OF PRINCIPAL EXECUTIVE OFFICER  
PURSUANT TO EXCHANGE ACT RULE 13A-14(A)/15D-14(A), AS ADOPTED  
PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002**

I, Michael R. Minogue, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q for the period ended December 31, 2019 of ABIOMED, Inc.
2. Based on my knowledge, this Report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this Report;
3. Based on my knowledge, the financial statements, and other financial information included in this Report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this Report;
4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
  - (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this Report is being prepared;
  - (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
  - (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this Report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this Report based on such evaluation; and
  - (d) Disclosed in this Report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
  - (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
  - (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: February 6, 2020

*/s/ MICHAEL R. MINOGUE*

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Michael R. Minogue  
Chairman, President and Chief Executive Officer  
(Principal Executive Officer)

**CERTIFICATION OF PRINCIPAL FINANCIAL OFFICER  
PURSUANT TO EXCHANGE ACT RULE 13A-14(A)/15D-14(A), AS ADOPTED  
PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002**

I, Todd A. Trapp, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q for the period ended December 31, 2019 of ABIOMED, Inc.
2. Based on my knowledge, this Report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this Report;
3. Based on my knowledge, the financial statements, and other financial information included in this Report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this Report;
4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
  - (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this Report is being prepared;
  - (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
  - (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this Report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this Report based on such evaluation; and
  - (d) Disclosed in this Report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
  - (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
  - (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: February 6, 2020

/s/ TODD A. TRAPP

Todd A. Trapp  
Vice President and Chief Financial Officer  
(Principal Financial Officer)



**CERTIFICATION PURSUANT TO  
18 U.S.C. § 1350  
AS ADOPTED PURSUANT TO  
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002**

In connection with the Quarterly Report on Form 10-Q of ABIOMED, Inc., (the "Company") for the quarter ended December 31, 2019, as filed with the Securities and Exchange Commission on the date hereof (the "Report"), each of the undersigned Chairman, President and Chief Executive Officer and Vice President and Chief Financial Officer of the Company, certifies, to the best knowledge and belief of said signatory, pursuant to 18 U.S.C. § 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002 that:

- (1) The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and
- (2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

/s/ MICHAEL R. MINOGUE

Michael R. Minogue  
Chairman, President and Chief Executive Officer  
(Principal Executive Officer)  
Date: February 6, 2020

/s/ TODD A. TRAPP

Todd A. Trapp  
Vice President and Chief Financial Officer  
(Principal Financial Officer)  
Date: February 6, 2020