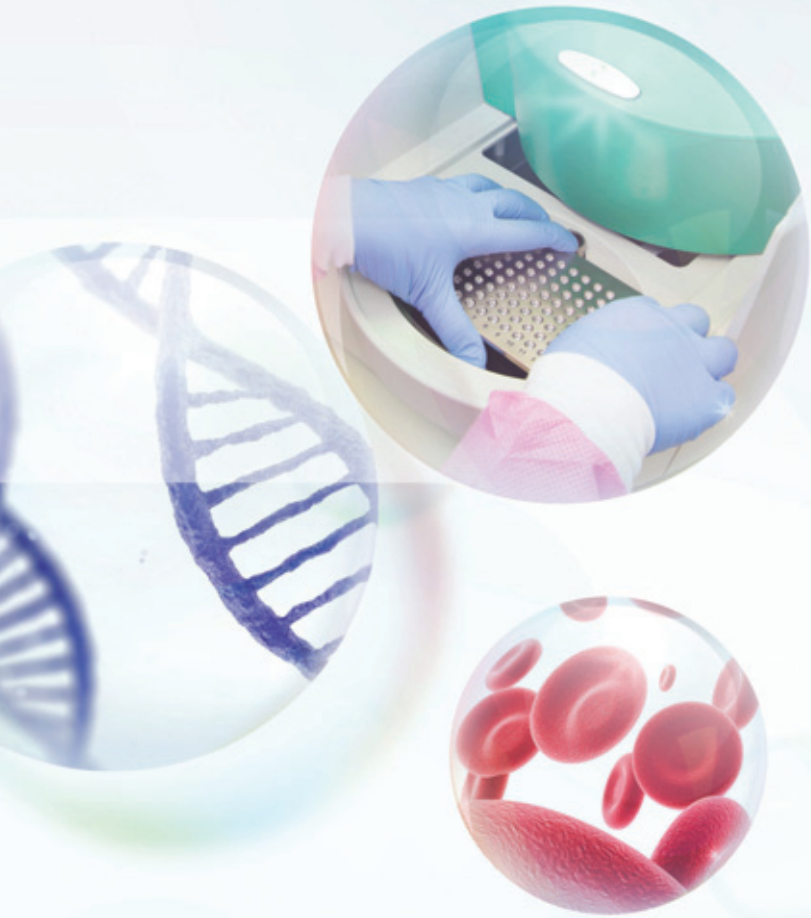
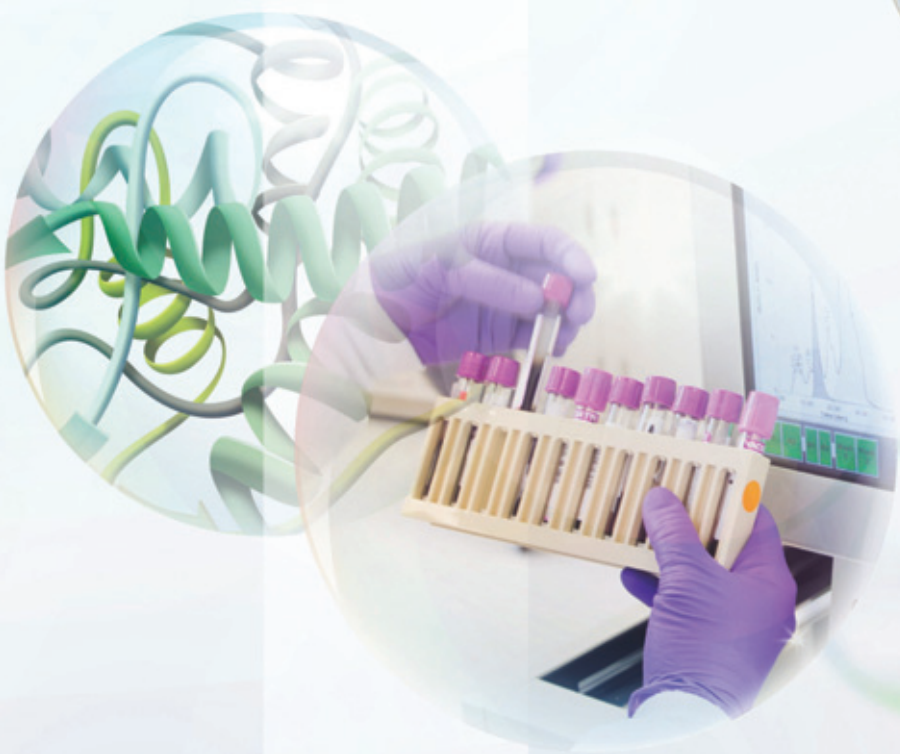


Bio-Rad Laboratories

ANNUAL REPORT 2016



Letter to our Shareholders

We ended the year having accomplished many of the tasks we set out to do.

Sales totaled nearly $2.1 billion representing growth of 2.4% over the prior year on a reported basis. The underlying growth, without the effects of currency, was a respectable 4.0%. The growth is all organic and represents a nice step up, relative to recent years. These gains were driven by two factors: first, our markets, which were much more predictable than recent years, and, second, by new products, a number of which contributed to our result for the year. As many of you know, we pioneered monitoring hemoglobin A1c as a marker of diabetic control. Over the years, we have routinely introduced new platforms, enhancing the customer experience and providing more value for this very important area. Continuing our leadership role, we have been successful this past year introducing our new D-100™ instrument for this market. Its features have found good customer acceptance as we gained regional regulatory approvals.

In late 2015, we introduced our mid-volume blood typing system, the IH-500. This is another system that has been well received across the European and Asian geographies, enhancing our position in this very important market, last year.

A number of years ago, we acquired Droplet Digital™ PCR technology, which we felt had potential to drive the next generation of nucleic acid analysis. Our instincts proved right as we continue to develop a whole new market. The technology is finding many new applications and has allowed researchers to advance the discovery process in a number of areas. We, for our part, have continued to invest in new products, the latest of which is the QX200™ system. This platform represents the second generation of this technology…and continues to drive growth for the company. During the year, we were able to get this instrument CE IVD marked in Europe, enabling its use in an in-vitro diagnostic environment. Some of the applications include those in cancer, transplant rejection, and viral infection, where the instrument's capability for highly accurate detection and quantification of nucleic acids can aid in clinical decision making in the treatment of disease.

While we are gaining momentum on the top line, 2016 was still a year of investment for Bio-Rad. These investments are on three fronts: Systems, Organization, and Technology. On the Systems front, we are preparing for our third and last major deployment of a global ERP system. We are encouraged by the resulting capabilities we are beginning to see from our earlier deployments as we prepare to go live in the first half of 2017. With this, we will have all of our manufacturing around the world on a single system and 60% of our sales. We can then ease back and take the rest in bite sized pieces. The system helps us transition from an international company to a true global company, where we can harness the value of all our operations around the world to drive better efficiency and effectiveness. For us, this is not only about internal improvements. We fully expect to use this system to enhance our customer experience.

The second element, which we talked about in last year's Annual Report, is Organization. Recently we embarked on a project to functionalize and globalize many of our operations. The project has gone well and today we are beginning to see what we can do with this new structure. We have initiated projects to consolidate distribution centers, create centers of excellence for manufacturing, and form shared service centers for certain administrative functions. It will still take some time for these to be reflected in an improved operating margin, but there is no doubt we will see the benefit.

The third area of investment for us has been what we term, "New Technology." Some of these have near-term benefit and others have value for the future. The two largest technology investments

we have made are in the area of droplet technology, the first one being Droplet Digital PCR for the research market. The ability to encapsulate fragments of DNA has enhanced the study of genetics in the science community. As I mentioned earlier, the Droplet Digital PCR market has developed rapidly and we are at the forefront of this very interesting area. Not only have we seen a rapid rise in its application in research, but clinical applications are starting to take shape and we foresee several promising areas of adoption in a diagnostic setting.

The second investment was a platform in development. A benchtop DNA sequencer capable of sample-to-answer in four hours, developed specifically for diagnostic application. We have worked to complete the development and are encouraged by the pre-market feedback we are receiving.

We also acquired a flow cytometer platform, enhancing the build out of a cell biology franchise. This platform is very complementary to our current portfolio of products, and we are eager to establish a base of enthusiastic customers.

At the beginning of 2016, we announced an alliance with Illumina to develop a comprehensive next generation sequencing workflow for single-cell analysis. This partnership takes advantage of the respective technology leadership positions of each of the two companies to streamline a traditionally challenging and time-consuming process. The development has been productive and we are now entering the market with what we hope will be a well-received approach.

Also helping to fuel growth in 2017 is the recent FDA clearance of our flagship IH-1000 blood typing platform. This has been a long-awaited event, allowing us to bring to the U.S. a platform that is well established as a standard of care around the world. We believe that today we have the broadest array of technologies and products to serve this customer base.

You have, no doubt, seen some of our press releases in the past year which signal some of the newer areas we are exploring for the future. These range from a food safety consortium in which we have partnered with Mars and IBM to see how we can improve the safety of the food supply, to a focus on Zika and the potential to develop tests to further enhance our portfolio of products used to protect the safety of the blood supply.

The investments we are making and restructuring are not without cost. You will see that we took several non-cash charges during the year that are more over time in nature, relating to restructuring our organization in Europe, as well as the impairment of our

investment in a benchtop sequencer. In the case of our impairment, this allows us to put the cost of this acquisition behind us. It does not, however, change our enthusiasm for the technology.

No message would be complete this year without some mention of the changing political landscape, not only in the U.S. but also in other parts of the world. While it is too early to tell exactly what the future holds, we are optimistic that it may bring a more business friendly environment in which to operate.

As for us, our near term focus is to begin to extract value from the significant investments we have made in technology, systems, and organization over the past several years. We are confident that we can improve the efficiency and effectiveness of our operations and have set a clear course for the next several years of achievement.

We will of course, continue to invest in new products and technologies to fuel growth and keep us at the forefront of the markets and customers we serve. Concurrently, we will continue to pursue opportunities to add product lines and operations through acquisition.

Overall, we are encouraged by the outlook for our markets and excited to realize the value from those investments we have made these last few years, which should translate well into increased value to our shareholders.

Thank you for your continued interest in Bio-Rad.

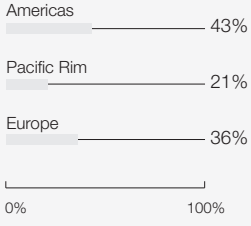
John Goetz
CHIEF OPERATING OFFICER

Norman Schwartz
PRESIDENT

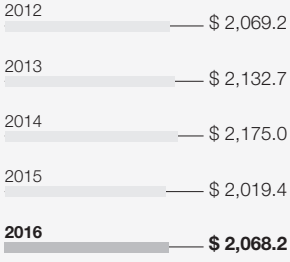
2016 Financial Highlights

In our seventh decade of operation, we have never lost sight of the principles that have brought us success.

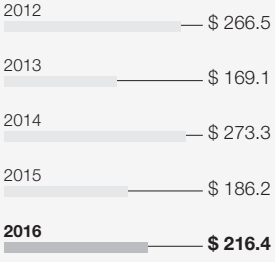
FIVE-YEAR RECORD (IN MILLIONS, EXCEPT FOR RETURN ON SALES AND PER SHARE DATA)	2012	2013	2014	2015	**2016**
Net Sales	$ 2,069.2	$ 2,132.7	$ 2,175.0	$ 2,019.4	**$ 2,068.2**
Gross Profit	$ 1,155.2	$ 1,178.5	$ 1,178.5	$ 1,121.7	**$ 1,138.1**
R & D Expense	$ 209.2	$ 211.0	$ 220.3	$ 193.0	**$ 205.9**
Net Income Attributable to Bio-Rad	$ 165.5	$ 77.8	$ 88.8	$ 113.1	**$ 28.1**
Return On Sales	8.0%	3.6%	4.1%	5.6%	**1.4%**
Book Value Per Share	$ 70.75	$ 75.99	$ 75.17	$ 84.83	**$ 87.46**
Basic Earnings Per Share	$ 5.85	$ 2.72	$ 3.08	$ 3.87	**$ 0.96**
Cash Flow From Operations	$ 266.5	$ 169.1	$ 273.3	$ 186.2	**$ 216.4**



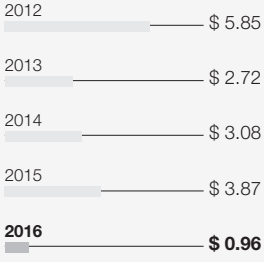
2016 SALES BY REGION



NET SALES
(IN MILLIONS)



CASH FLOW FROM OPERATIONS
(IN MILLIONS)



BASIC EARNINGS PER SHARE

What's in a Droplet?

OFFERING UNRIVALED PRECISION AND ABSOLUTE QUANTIFICATION OF TARGET DNA OR RNA MOLECULES, OUR UNIQUE DROPLET DIGITAL PCR (DDPCR™) TECHNOLOGY IS LEADING TO BREAKTHROUGHS IN SUCH FIELDS AS CANCER BIOMARKER DISCOVERY, INFECTIOUS DISEASES, GENOMIC ALTERATIONS, AND GENE EXPRESSION.

Partitioning samples into thousands of microfluidic "droplet" test tubes provides us the ability to develop technologies that offer highly quantitative, digital answers in the areas of life science research and clinical diagnostics in addition to environmental monitoring and food testing. In early 2016, we received CE IVD marking for our QX200™ Droplet Digital™ PCR System, making it the first digital PCR system with the CE IVD mark for use as an in vitro diagnostic (IVD) in the European Union.

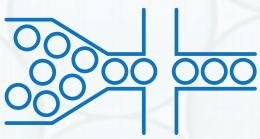
Since introducing our digital PCR technology several years ago, there have been over 700 peer-reviewed publications that describe a wide variety of applications of this technology, particularly in the area of cancer. Using ddPCR, researchers are able to observe finer quantitative distinction among mutations, better identifying their role in cancer.

In one example, researchers at the Olivia Newton-John Cancer Research Institute in Australia are using ddPCR to perform "liquid biopsies" of melanoma patients to detect and analyze cancer genes, sparing patients from invasive surgical biopsies and saving precious time between diagnosis and treatment. From the blood sample researchers can identify whether a melanoma patient will respond to a specific treatment or if it is no longer working.

This approach is already saving lives. In one recent case, a woman was diagnosed with aggressive stage melanoma shortly after giving birth. Doctors could not begin treatment until determining the kind of melanoma she had. Using ddPCR technology, the liquid biopsy results came back within six hours—instead of weeks—allowing doctors to diagnose the type of melanoma as well as the right treatment.

PREPARE DDPCR REACTION MIX

Combine DNA sample with primers and/or probes with one of Bio-Rad's ddPCR Supermixes.



GENERATE DROPLETS

Droplets are generated from each run on the QX200 Droplet Generator. Target DNA and background DNA are randomly distributed in the droplets.

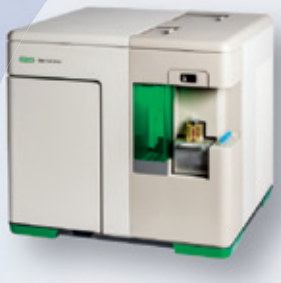
PERFORM PCR

Transfer the droplets to a 96-well plate and amplify.

READ AND ANALYZE RESULTS

Droplets in each sample are read and analyzed on a QX200 Droplet Reader with QuantaSoft™ Software.

TC20™ AUTOMATED
CELL COUNTER



S3E™ CELL
SORTER

ZOE™ FLUORESCENT
CELL IMAGER

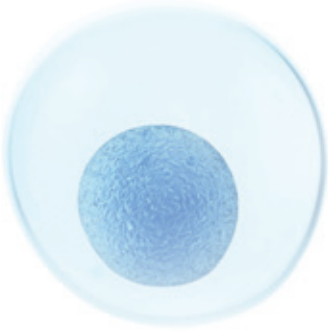
ZE5™ CELL
ANALYZER

DDSEQ™ SINGLE-CELL
ISOLATOR

Discovery at the Single-Cell Level

SEVERAL YEARS AGO, BIO-RAD BEGAN BUILDING A FAMILY OF PRODUCTS TO ADDRESS THE GROWING AREA OF CELLULAR ANALYSIS. WE ENTERED THE MARKET WITH A CELL COUNTER THEN ACQUIRED A CELL SORTING TECHNOLOGY.

Not much later we introduced a digital microscope for cell visualization. Next in line is the ZE5™ Cell Analyzer that will continue the workflow when we introduce it in early 2017. These instruments along with antibodies and reporter molecules provide our customers with platforms offering ease of use and affordability as well as content.



But we didn't stop there. Addressing one of the most rapidly growing techniques in cell biology, "single cell gene expression," we partnered with Illumina, Inc. in January 2016 to develop the most comprehensive next-generation sequencing (NGS) workflow for single-cell analysis. The Illumina® Bio-Rad® Single-Cell Sequencing Solution, featuring the ddSEQ™ Single-Cell Isolator, was introduced in the first quarter of 2017.

Why single cells?

Single-cell analysis enables a deep view into the gene expression of individual cells to better understand their functions in complex tissues.

Most scientific studies rely on analysis of bulk tissue samples. These samples are usually composed of multiple cell types with varying functions. Gene expression data is averaged across cells, making it difficult to identify differences between cells and understand the role of cell variation. In fields such as hematology, stem cell biology, tissue engineering, and cancer biology, the cells of interest may be in the minority and their true behavior or phenotype masked by the majority of the population. In cases such as these, measuring averages simply will not do. Accurate characterization of samples with high cellular heterogeneity is only achieved through single-cell analysis.

Single-cell sequencing addresses those challenges and provides deeper insight into cell function, disease progression, and therapeutic response. These data can be important in studies of neurological tissues, for example, which are known to have hundreds of specialized cell types.

Our solution delivers high-throughput sequencing of thousands of individual cells, traditionally a challenging, costly, and time-consuming process.

A Full Spectrum of Blood Testing Solutions

BIO-RAD IS A LEADER IN BLOOD TYPING IN MARKETS OUTSIDE THE U.S., LARGELY DRIVEN BY OUR HIGH-VOLUME IH-1000 BLOOD TYPING INSTRUMENT, OUR MID-VOLUME IH-500 SYSTEM, AND BY OUR IH-CENTRAL CONNECTIVITY SUITE.

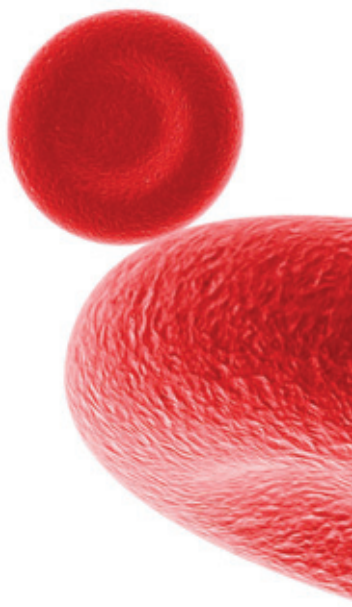
After receiving clearance in 2016 from the U.S. Food and Drug Administration for our **IH**-1000 platform and a wide range of associated gel cards and reagents, we are prepared to extend our leadership position to the U.S. blood typing market. Our **IH**-1000, based on gel card technology, offers automation and extended walk-away autonomy, allowing laboratories to more efficiently manage their blood testing workload.

With the release of the **IH**-1000 system, we now offer our U.S. customers a wide variety of platforms, reagents, data management, and connectivity solutions to address different volume blood testing needs. These products include the **TANGO** infinity® system that uses microplate technology, and a comprehensive range of reagents for conventional tube testing for blood typing, cross-matching, and antibody identification.

Every detail matters when it comes to determining compatibility of a donor's and patient's blood. We provide the tools clinicians need to do the detective work—ensuring they have what they are looking for: a perfect match. In a three-step process, an ABO typing test is performed and followed by a general antibody screen in which antibodies in the patient's plasma are combined with a red blood cell reagent pool of the most clinically significant antigens. Finally, if no incompatibility is detected a "cross-match" is performed that combines the red blood cells in the donor blood with plasma of the patient to ensure compatibility between the two.

Bio-Rad has access to multiple diverse blood sources so we can manufacture a large number of reagent red blood cells with clinically relevant antigen profiles. In addition, we have at our disposal a significant arsenal of monoclonal and polyclonal antibodies that further enlarge the pool of test cell possibilities, so clinicians can dig deeper to discover possible interactions between antibodies and antigens.

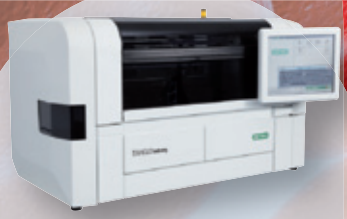
These solutions combined with our connectivity suite, **IH**-Central, provides our customers everything they need to deliver safe and accurate results.



IH-1000

IH-500*

*Not available in the U.S.



TANGO INFINITY®
SYSTEM

IH-CENTRAL
CONNECTIVITY SUITE

REAGENTS
(FOR MANUAL
TUBE TESTING)

Who We Are

FOR OVER SIX DECADES, BIO-RAD HAS PROVIDED THE HEALTHCARE INDUSTRY WITH INNOVATIVE AND USEFUL PRODUCTS THAT HELP LIFE SCIENCE RESEARCHERS ACCELERATE THE DISCOVERY PROCESS AND MEDICAL DIAGNOSTIC LABS OBTAIN FASTER, BETTER RESULTS.

Bio-Rad is among the top five life science companies in the world, providing instruments, software, consumables, reagents, and content for the areas of cell biology, gene expression, protein purification, protein quantitation, drug discovery and manufacture, food safety, and science education. Our products and solutions are based on technologies to separate, purify, identify, analyze, and amplify biological materials such as antibodies, proteins, nucleic acids, cells, and bacteria.

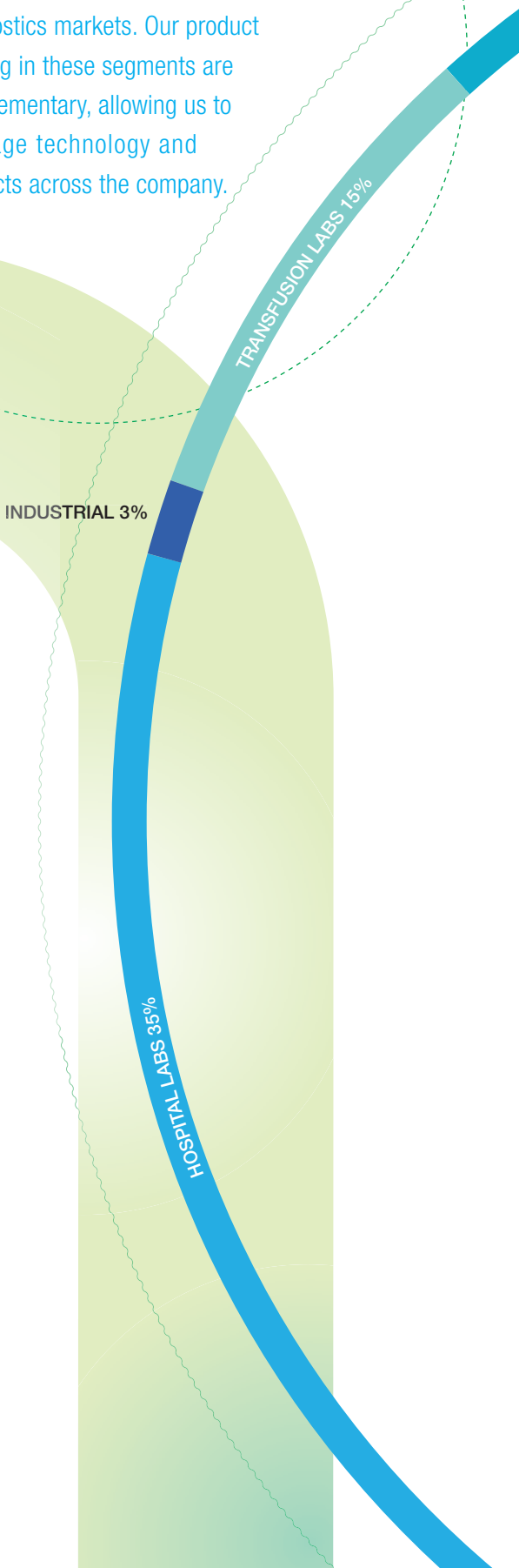
As a leading global provider of in-vitro diagnostics supplies, our diagnostic products and systems leverage a broad range of technologies and deliver high-value clinical information in the blood transfusion, diabetes monitoring, autoimmune, and infectious disease testing markets. These products are used to support the diagnosis, monitoring, and treatment of diseases and other medical conditions.

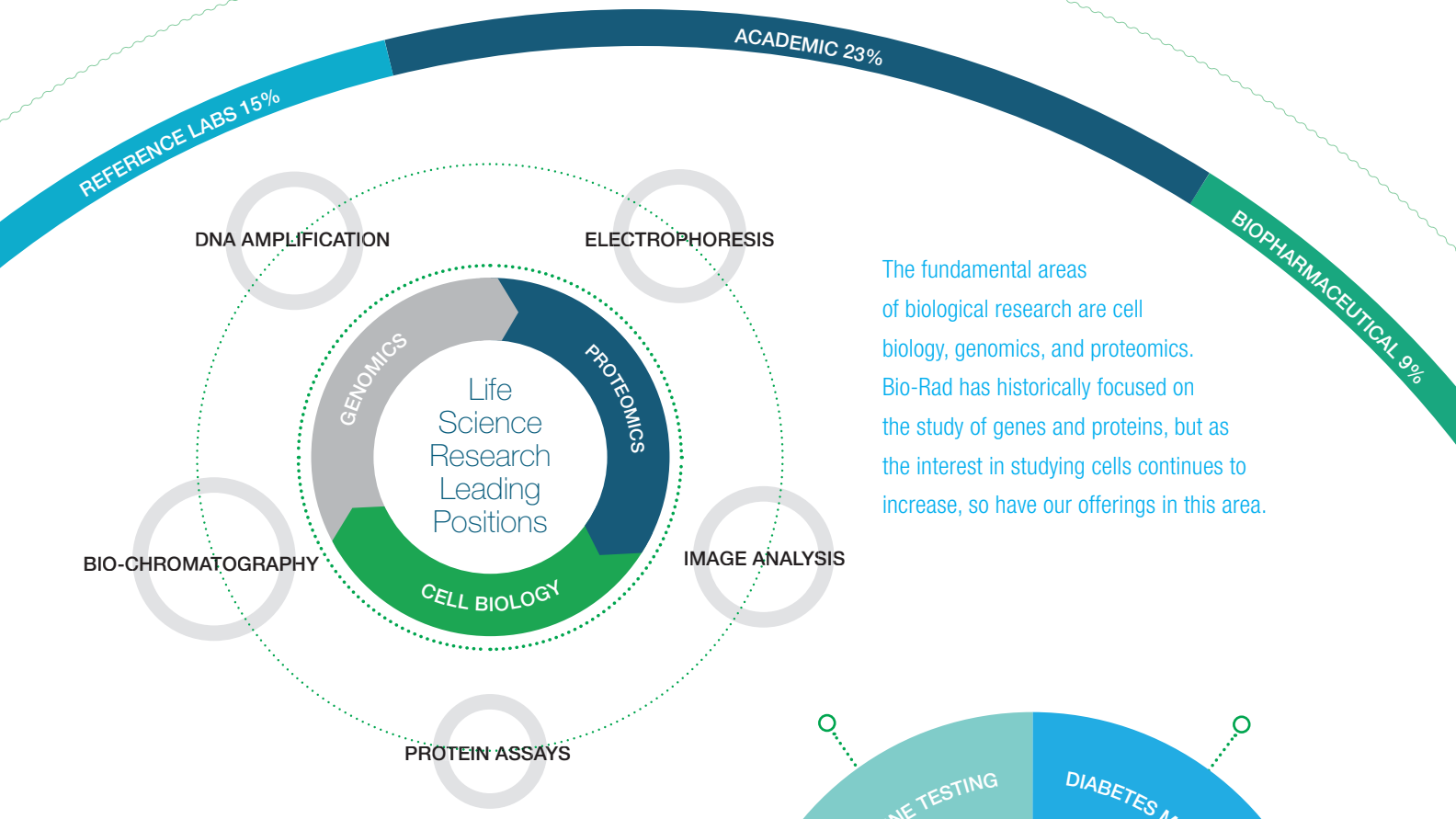
Bio-Rad is the world leader in clinical quality control products, services, and information systems—products that ensure the accuracy and validity of clinical test results.

Throughout our existence, we have built long-lasting customer relationships that help advance our research and development efforts in the introduction of new products and solutions. In 2017, embarking on our 65th year of operation, Bio-Rad's global network of over 8,250 employees and operations are helping people live longer, healthier lives.

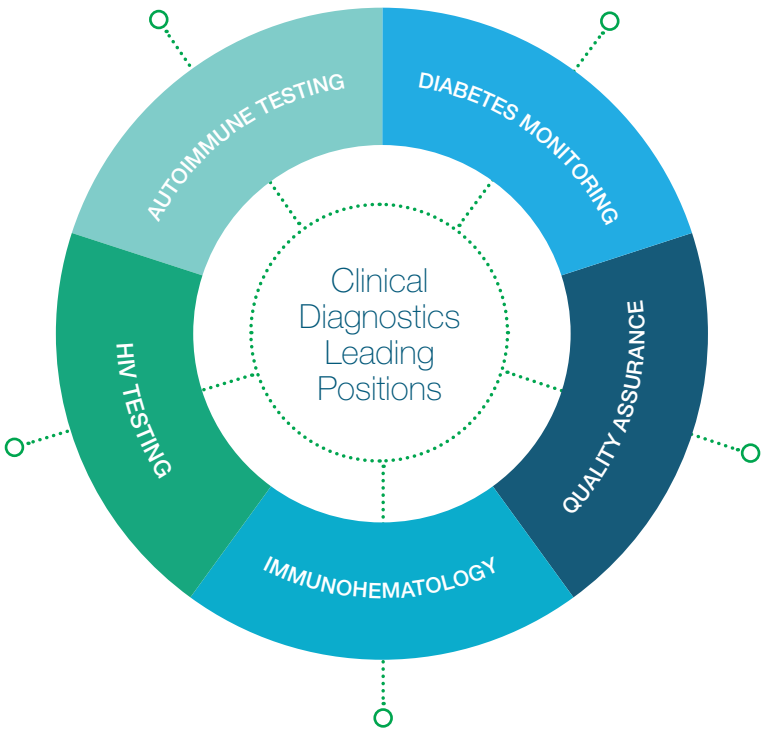
Who We Serve

Bio-Rad primarily serves the life science research and medical diagnostics markets. Our product offering in these segments are complementary, allowing us to leverage technology and products across the company.

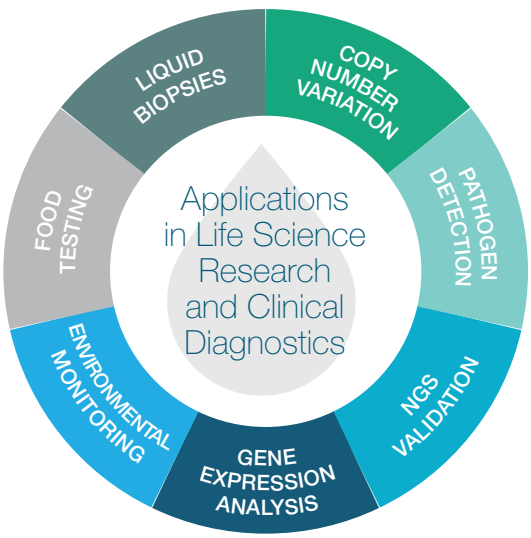




The fundamental areas of biological research are cell biology, genomics, and proteomics. Bio-Rad has historically focused on the study of genes and proteins, but as the interest in studying cells continues to increase, so have our offerings in this area.



These products consist of instrument and reagents often provided as an integrated package to allow a lab to generate reproducible test results.



Digital Biology

Leveraging our leadership position in DNA amplification, several years ago we established a presence in digital biology with the introduction of Droplet Digital PCR (ddPCR). Using this technology researchers can partition segments of DNA into thousands of microfluidic droplets and then discretely amplify and analyze each reaction resulting in the capture of highly quantitative digital answers not previously attainable.

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

FORM 10-K

(Mark One)

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

For the year ended December 31, 2016

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 1-7928

BIO-RAD LABORATORIES, INC.

(Exact name of registrant as specified in its charter)

Delaware	94-1381833
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification No.)
1000 Alfred Nobel Drive, Hercules, California	94547
(Address of principal executive offices)	(Zip Code)

Registrant's telephone number, including area code (510) 724-7000

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

Title of Each Class	Name of Each Exchange on Which Registered
Class A Common Stock Par Value $0.0001 per share	New York Stock Exchange
Class B Common Stock Par Value $0.0001 per share	New York Stock Exchange

Securities registered pursuant to Section 12(g) of the Act: NONE

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. ☒ Yes ☐ No

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act. ☐ Yes ☒ No

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 and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). ☒ Yes ☐ No

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K is not contained herein, and will not be contained, to the best of registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K. ☒

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

Large accelerated filer	☒	Accelerated filer	☐
Non-accelerated file	☐ (Do not check if a smaller reporting company)	Smaller reporting company	☐

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 June 30, 2016, the last business day of the registrant's most recently completed second fiscal quarter, the aggregate market value of the Registrant's Class A Common Stock held by non-affiliates was approximately $2,959,730,250 and the aggregate market value of the registrant's Class B Common Stock held by non-affiliates was approximately $42,159,671.

As of February 14, 2017, there were 24,460,068 shares of Class A Common Stock and 5,116,824 shares of Class B Common Stock outstanding.

Documents Incorporated by Reference

	Document	Form 10-K Parts
(1)	Definitive Proxy Statement to be mailed to stockholders in connection with the registrant's 2017 Annual Meeting of Stockholders (specified portions)	III

BIO-RAD LABORATORIES, INC.

FORM 10-K DECEMBER 31, 2016

TABLE OF CONTENTS

Part I.	3
Item 1. Business	3
Item 1A. Risk Factors	7
Item 1B. Unresolved Staff Comments	18
Item 2. Properties	19
Item 3. Legal Proceedings	19
Item 4. Mine Safety Disclosures	21
Part II.	21
Item 5. Market for Registrant's Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities	21
Item 6. Selected Financial Data	23
Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations	23
Item 7A. Quantitative and Qualitative Disclosures About Market Risk	39
Item 8. Financial Statements and Supplementary Data	40
Item 9. Changes and Disagreements with Accountants on Accounting and Financial Disclosure	85
Item 9A. Controls and Procedures	85
Item 9B. Other Information	86
Part III.	86
Item 10. Directors, Executive Officers and Corporate Governance	86
Item 11. Executive Compensation	87
Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters	87
Item 13. Certain Relationships and Related Transactions, and Director Independence	87
Item 14. Principal Accountant Fees and Services	87
Part IV.	88
Item 15. Exhibits and Financial Statement Schedules	88
Signatures	89

INFORMATION RELATING TO FORWARD-LOOKING STATEMENTS

Other than statements of historical fact, statements made in this Annual Report include forward-looking statements, such as statements with respect to our future financial performance, operating results, plans and objectives that involve risk and uncertainties. Forward-looking statements generally can be identified by the use of forward-looking terminology, such as "believe," "expect," "may," "will," "intend," "estimate," "continue," or similar expressions or the negative of those terms or expressions. Such statements involve risks and uncertainties, which could cause actual results to vary materially from those expressed in or indicated by the forward-looking statements. We have based these forward-looking statements on our current expectations and projections about future events. However, actual results may differ materially from those currently anticipated depending on a variety of risk factors including but not limited to those identified under "Item 1A, Risk Factors" of this Annual Report. We caution you not to place undue reliance on forward-looking statements, which reflect an analysis only and speak only as of the date hereof. We undertake no obligation to publicly update or revise any forward-looking statements, whether as a result of new information, future events, or otherwise, except as required by law.

PART I.

ITEM 1. BUSINESS

General

Founded in 1952 and incorporated in 1957, Bio-Rad Laboratories, Inc. (referred to in this report as "Bio-Rad," "we," "us," and "our") was initially engaged in the development and production of specialty chemicals used in biochemical, pharmaceutical and other life science research applications. We entered the field of clinical diagnostics with the development of our first test kit based on separation techniques and materials developed for life science research. Through internal research and development efforts and acquisitions we have expanded into various markets. Today, Bio-Rad manufactures and supplies the life science research, healthcare, analytical chemistry and other markets with a broad range of products and systems used to separate complex chemical and biological materials and to identify, analyze and purify their components.

As we broadened our product lines, we also expanded our geographical market. We have direct distribution channels in over 35 countries outside the United States through subsidiaries whose focus is sales, customer service and product distribution. In some locations outside and inside these 35 countries, sales efforts are supplemented by distributors and agents.

Description of Business

Business Segments

Today, Bio-Rad operates in two industry segments designated as Life Science and Clinical Diagnostics. Both segments operate worldwide. Our Life Science segment and our Clinical Diagnostics segment generated 35% and 64%, respectively, of our net sales for the year ended December 31, 2016. We generated approximately 37% of our consolidated net sales for the year ended December 31, 2016 from U.S. sales and approximately 63% from sales in our remaining worldwide markets.

For a description of business and financial information on industry and geographic segments, see Note 14 of Item 8 of Part II of this report.

Life Science Segment

Our Life Science segment is at the forefront of discovery, creating advanced tools to answer complex biological questions. We are a leader in the life sciences market and develop, manufacture and market a range of more than 5,000 reagents, apparatus and laboratory instruments that serve a global customer base. Many of our products are

used in established research techniques, biopharmaceutical production processes and food testing regimes. These techniques are typically used to separate, purify and identify biological materials such as proteins, nucleic acids and bacteria within a laboratory or production setting. We focus on selected segments of the life sciences market in proteomics (the study of proteins), genomics (the study of genes), biopharmaceutical production, cell biology and food safety. We estimate that the worldwide market for products in these selected segments was approximately $8 billion. Our principal life science customers include universities and medical schools, industrial research organizations, government agencies, pharmaceutical manufacturers, biotechnology researchers, food producers and food testing laboratories.

Clinical Diagnostics Segment

Our Clinical Diagnostics segment designs, manufactures, sells and supports test systems, informatics systems, test kits and specialized quality controls that serve clinical laboratories in the global diagnostics market. Our products currently address specific niches within the in vitro diagnostics (IVD) test market, and we seek to focus on the higher margin, higher growth segments of this market.

We supply more than 3,000 different products that cover more than 300 clinical diagnostic tests to the IVD test market. We estimate that the worldwide sales for products in the markets we serve were approximately $12 billion. IVD tests are conducted outside the human body and are used to identify and measure substances in a patient's tissue, blood or urine. Our products consist of reagents, instruments and software, typically provided to our customers as an integrated package to allow them to generate reproducible test results. Revenue in this business is highly recurring, as laboratories typically standardize test methodologies, which are dependent on a particular supplier's equipment, reagents and consumable products. An installed base of diagnostic test systems therefore typically creates an ongoing source of revenue through the sale of test kits for each sample analyzed on an installed system. Our principal clinical diagnostic customers include hospital laboratories, reference laboratories, transfusion laboratories and physician office laboratories.

Raw Materials and Components

We utilize a wide variety of chemicals, biological materials, electronic components, machined metal parts, optical parts, computing and peripheral devices. Most of these materials and components are available from numerous sources, and generally we have not experienced difficulty in securing adequate supplies. However, in certain instances we acquire components and materials from a sole supplier. Due to the regulatory environment in which we operate, we may be unable to quickly establish additional or replacement sources for some components or materials.

Patents, Trademarks and Licenses

We own numerous U.S. and international patents and trademarks. We also pay royalties on the sales of certain products under several patent license agreements. We view these patents, trademarks and license agreements as valuable assets; however, we believe that our ability to develop and manufacture our products depends primarily on our knowledge, technology and special skills rather than our patent, trademark and licensing positions.

Seasonal Operations and Backlog

Our business is not inherently seasonal. However, the European custom of concentrating vacation during the summer months usually tempers third quarter sales volume and operating income.

For the most part, we operate in markets characterized by short lead times and the absence of significant backlogs. Management has concluded that backlog information is not material to our business as a whole.

Sales and Marketing

We conduct our worldwide operations through an extensive direct sales force, employing approximately 990 direct sales and sales management personnel around the world. Our sales force typically consists of experienced industry practitioners with scientific training, and we maintain a separate specialist sales force for each of our segments. We believe that this direct sales approach allows us to sell a broader range of our products and have more direct contact with our customers.

We also use a range of sales and marketing intermediaries (SMIs) in our international markets. The types of SMIs we utilize are distributors, agents, brokers and resellers. We have programs and policies in place with our SMIs that require compliance with all applicable laws, including adhering to our anti-corruption standards to ensure a transparent sale to our customers.

Our customer base is broad and diversified. Our worldwide customer base includes (1) prominent university and research institutions, providing us access to more than 180,000 scientists in the United States alone; (2) hospital, public health and commercial laboratories; (3) other leading diagnostic manufacturers; and (4) leading companies in the biotechnology, pharmaceutical, chemical and food industries. In 2016, no single customer accounted for more than three percent of our total net sales. Our sales are affected by a number of external factors. For example, a number of our customers, particularly in the Life Science segment, are substantially dependent on government grants and research contracts for their funding. A significant reduction of government funding has in the past and could in the future have a detrimental effect on the results of this segment.

Most of our international sales are generated by our wholly-owned subsidiaries and their branch offices. Certain of these subsidiaries also have manufacturing facilities. Bio-Rad's international operations are subject to certain risks common to foreign operations in general, such as changes in governmental regulations, import restrictions and foreign exchange fluctuations.

Competition

The markets served by our product groups are highly competitive. Our competitors range in size from start-ups to large multinational corporations with significant resources and reach. We seek to compete primarily in market segments where our products and technology offer customers specific advantages over the competition.

Because of the breadth of its product lines, our Life Science segment does not face the same competitors for all of its products. Competitors in this market include GE Biosciences, Merck Millipore and Thermo Fisher Scientific. We compete primarily based on meeting performance specifications and offering complete solutions.

Major competitors of our Clinical Diagnostics segment include Roche, Abbott Laboratories, Siemens, Danaher, Thermo Fisher, Becton Dickinson, bioMérieux, Ortho Clinical Diagnostics, Tosoh, Immucor and DiaSorin.

Research and Development

We conduct extensive research and development activities in all areas of our business, employing approximately 875 employees worldwide in these activities, including degreed scientists and technical support staff. Research and development has played a major role in Bio-Rad's growth and is expected to continue to do so in the future. Our research teams are continuously developing new products and new applications for existing products. In our development of new products and applications, we interact with scientific and medical professionals at universities, hospitals and medical schools, and within our industry. We spent approximately $205.9 million, $193.0 million and $220.3 million on research and development activities in 2016, 2015 and 2014, respectively.

Regulatory Matters

The development, testing, manufacturing, marketing, post-market surveillance, distribution, advertising and labeling of certain of our products (primarily diagnostic products) are subject to regulation in the United States by the Center for Devices and Radiological Health of the U.S. Food and Drug Administration (FDA) and in other jurisdictions by state and foreign government authorities. FDA regulations require that some new products have pre-marketing clearance or approval by the FDA and require certain products to be manufactured in accordance with FDA's "good manufacturing practice" regulations, to be extensively tested and to be properly labeled to disclose test results and performance claims and limitations. After a product that is subject to FDA regulation is placed on the market, numerous regulatory requirements apply, including, for example, the requirement that we comply with recordkeeping and reporting requirements, such as the FDA's medical device reporting regulations and reporting of corrections and removals. The FDA enforces these requirements by inspection and market surveillance. The FDA has authority to take various administrative and legal actions against us for our, or our products', failure to comply with relevant legal or regulatory requirements, including issuing warning letters, initiating product seizures, requesting or requiring product recalls or withdrawals, and other civil or criminal sanctions, among other things.

We are also subject to additional healthcare regulation and enforcement by the federal government and by authorities in the states and foreign jurisdictions in which we conduct our business. Such laws include, without limitation, state and federal anti-kickback, fraud and abuse, false claims, privacy and security and physician sunshine laws and regulations. If our operations are found to be in violation of any of such laws or any other governmental regulations that apply to us, we may be subject to penalties, including, without limitation, civil and criminal penalties, damages, fines, the curtailment or restructuring of our operations, exclusion from participation in federal and state healthcare programs and imprisonment, any of which could adversely affect our ability to operate our business and our financial results.

Sales of our products will depend, in part, on the extent to which our products or diagnostic tests using our products will be covered by third-party payors, such as government health care programs, commercial insurance and managed healthcare organizations. These third-party payors are increasingly reducing reimbursements for certain medical products and services. In addition, the U.S. government, state legislatures and foreign governments have continued implementing cost containment programs, including price controls and restrictions on reimbursement. Adoption of price controls and cost-containment measures, and adoption of more restrictive policies in jurisdictions with existing controls and measures, could further limit our net revenue and results. Decreases in third-party reimbursement for our products or diagnostic tests using our products, or a decision by a third-party payor to not cover our products could reduce or eliminate utilization of our products and have a material adverse effect on our sales, results of operations and financial condition. In addition, healthcare reform measures have been and will be adopted in the future, any of which could limit the amounts that governments will pay for healthcare products and services, which could result in reduced demand for our products or additional pricing pressures.

As a multinational manufacturer and distributor of sophisticated instrumentation, we must meet a wide array of electromagnetic compatibility and safety compliance requirements to satisfy regulations in the United States, the European Union and other jurisdictions.

Our operations are subject to federal, state, local and foreign environmental laws and regulations that govern such activities as transportation of goods, emissions to air and discharges to water, as well as handling and disposal practices for solid, hazardous and medical wastes. In addition to environmental laws that regulate our operations, we are also subject to environmental laws and regulations that create liabilities and clean-up responsibility for spills, disposals or other releases of hazardous substances into the environment as a result of our operations or otherwise impacting real property that we own or operate. The environmental laws and regulations could also subject us to claims by third parties for damages resulting from any spills, disposals or releases resulting from our operations or at any of our properties.

These regulatory requirements vary widely among countries.

Employees

At December 31, 2016, Bio-Rad had approximately 8,250 employees. Approximately seven percent of our approximately 3,300 U.S. employees are covered by a collective bargaining agreement, which will expire on November 7, 2019. Many of our non-U.S. full-time employees, especially in France, are covered by collective bargaining agreements. We consider our employee relations in general to be good.

Available Information

Bio-Rad files annual, quarterly, and current reports, proxy statements, and other documents with the Securities and Exchange Commission (SEC) under the Securities Exchange Act of 1934, as amended. The public may read and copy any materials that we file with the SEC at the SEC's Public Reference Room at 100 F Street, NE, Washington, DC 20549. The public may obtain information on the operation of the Public Reference Room by calling the SEC at 1-800-SEC-0330. Also, the SEC maintains an Internet website that contains reports, proxy and information statements, and other information regarding issuers, including Bio-Rad, that file electronically with the SEC. The public can obtain any documents that we file with the SEC at http://www.sec.gov.

Bio-Rad's website address is www.bio-rad.com. We make available, free of charge through our website, our Form 10-Ks, 10-Qs and 8-Ks, and any amendments to these forms, as soon as reasonably practicable after filing with the SEC. The information on our website is not part of this Annual Report on Form 10-K.

ITEM 1A. RISK FACTORS

In evaluating our business and whether to invest in any of our securities, you should carefully read the following risk factors in addition to the other information contained in this Annual Report. We believe that any of the following risks could have a material effect on our business, results of operations or financial condition, our industry or the trading price of our common stock. We operate in a continually changing business environment, and new risks and uncertainties emerge from time to time. We cannot predict these new risks and uncertainties, nor can we assess the extent to which any such new risks and uncertainties or the extent to which the risks and uncertainties set forth below may adversely affect our business, results of operations, financial condition, our industry or the trading price of our common stock.

Our settlement with government agencies in connection with violations by us of the U.S. Foreign Corrupt Practices Act could have a material adverse effect on our business, results of operations and financial condition.

As previously disclosed, we entered into a non-prosecution agreement (NPA) with the U.S. Department of Justice (DOJ) and the Securities and Exchange Commission (SEC) and consented to the entry of an Order by the SEC (SEC Order), effective November 3, 2014, which actions resolved both the DOJ and the SEC investigations into our violations of the U.S. Foreign Corrupt Practices Act (FCPA). Under the terms of the NPA and the SEC Order, we agreed to pay a financial penalty and certain amounts in disgorgement and interest as well as to compliance, reporting and cooperation obligations to be performed for two years. On October 28, 2016, the DOJ and SEC informed Bio-Rad that they did not intend to extend the NPA after it expired November 2, 2016.

Whether by virtue of disclosure of the NPA and the SEC Order or otherwise, we may be subject to investigations by foreign governments or further claims by third parties arising from conduct subject to the investigation or our other international operations. For additional information regarding further claims by third parties, see Note 13, "Legal Proceedings" in the Notes to Condensed Consolidated Financial Statements of Part II, Item 8 of this Annual Report on Form 10-K. Many of our customers in our significant international operations are government agencies or state-owned or state-controlled universities, hospitals and laboratories. The disclosure of the NPA and the SEC Order could harm our reputation with these customers, which could materially adversely affect our business, results of operations and financial condition.

Our international operations expose us to additional costs and legal and regulatory risks, which could have a material adverse effect on our business, results of operations and financial condition.

We have significant international operations. We have direct distribution channels in over 35 countries outside the United States, and in 2016 our foreign subsidiaries generated 63% of our net sales. Compliance with complex foreign and U.S. laws and regulations that apply to our international operations increases our cost of doing business. These numerous and sometimes conflicting laws and regulations include, among others, data privacy requirements (including with respect to the invalidation of the U.S.-European Union safe harbor by the European Court of Justice, compliance with the EU-U.S. Privacy Shield recently adopted by the European Commission, and the upcoming requirements for compliance with the EU General Data Protection Regulation), labor relations laws, tax laws, anti-competition regulations, import and trade restrictions, export requirements, U.S. laws such as the FCPA and other U.S. federal laws and regulations established by the office of Foreign Asset Control, local laws such as the UK Bribery Act 2010 or other local laws which prohibit corrupt payments to governmental officials or certain payments or remunerations to customers.

Given the high level of complexity of these laws, there is a risk that we may inadvertently breach some provisions, for example, through fraudulent or negligent behavior of individual employees, our failure to comply with certain formal documentation requirements, or otherwise. Our success depends, in part, on our ability to anticipate these risks and manage these challenges through policies, procedures and internal controls. However, we have a dispersed international sales organization, and we use distributors and agents in many of our international operations. This structure makes it more difficult for us to ensure that our international selling operations comply with our global policies and procedures.

Violations of these laws and regulations could result in fines, criminal sanctions against us, our officers or our employees, requirements to obtain export licenses, cessation of business activities in sanctioned countries, implementation of compliance programs, and prohibitions on the conduct of our business. Violations of laws and regulations also could result in prohibitions on our ability to offer our products in one or more countries and could materially damage our reputation, our brand, our international expansion efforts, our ability to attract and retain employees, or our business, results of operations and financial condition. See also our risk factor regarding government regulations below.

The industries and market segments in which we operate are highly competitive, and we may not be able to compete effectively.

The life science and clinical diagnostics markets are each highly competitive. Some of our competitors have merged, and some of our competitors have greater financial resources than we do and are less leveraged than we are, making them better equipped to license technologies and intellectual property from third parties or to fund research and development, manufacturing and marketing efforts. For more information about our competitors, see "Competition" in Part 1, Item 1 of this Annual Report. Moreover, competitive and regulatory conditions in many markets in which we operate restrict our ability to fully recover, through price increases, higher costs of acquired goods and services resulting from inflation and other drivers of cost increases. Many public tenders have become more competitive due to governments lengthening the commitments of their public tenders to multiple years, which reduce the number of tenders in which we can participate annually. Because the value of these multiple-year tenders is so high, our competitors have been more aggressive with their pricing. Our failure to compete effectively and/or pricing pressures resulting from competition could adversely affect our business, results of operations and financial condition.

We may not be able to grow our business because of our failure to develop new or improved products.

Our future growth depends in part on our ability to continue to improve our product offerings and develop and introduce new product lines and extensions that integrate technological advances. In particular, we may not be able to keep up with changes in the clinical diagnostics industry, such as the trend toward molecular diagnostics or point-of-care tests. If we are unable to integrate technological advances into our product offerings or to design, develop,

manufacture and market new product lines and extensions successfully and in a timely manner, our business, results of operations and financial condition will be adversely affected. We have experienced product launch delays in the past, and may do so in the future. We cannot assure you that our product and process development efforts will be successful or that new products we introduce will achieve market acceptance. Failure to launch successful new products or improvements to existing products may cause our products to become obsolete, which could harm our business, results of operations and financial condition.

We are subject to foreign currency exchange fluctuations, which could have a material adverse effect on our results of operations and financial condition.

As stated above, a significant portion of our operations and sales are outside of the United States. When we make purchases and sales in currencies other than the U.S. dollars, we are exposed to fluctuations in foreign currencies relative to the U.S. dollar that may adversely affect our results of operations and financial condition. Our international sales are largely denominated in local currencies. As a result, the strengthening of the U.S. dollar negatively impacts our consolidated net sales expressed in U.S. dollars. Conversely, when the U.S. dollar weakens, our expenses at our international sites increase. In addition, the volatility of other currencies, such as the Swiss Franc, Brazilian Real and Russian Ruble, may negatively impact our operations outside of the United States and increase our costs to hedge against currency fluctuations. We cannot assure you that future shifts in currency exchange rates will not have a material adverse effect on our results of operations and financial condition. For further information regarding our foreign exchange risk, see "Foreign currency exchange gains and losses" in Part II, Item 7, and "Foreign Exchange Risk" in Part II, Item 7A of this Annual Report.

We may experience difficulties implementing our new global enterprise resource planning system.

We are engaged in a multi-year implementation of a new global enterprise resource planning system (ERP). The ERP is designed to efficiently maintain our books and records and provide information important to the operation of our business to our management team. The ERP will continue to require significant investment of human and financial resources. In implementing the ERP, we may experience significant delays, increased costs and other difficulties. Any significant disruption or deficiency in the design and implementation of the ERP could adversely affect our ability to process orders, ship product, send invoices and track payments, fulfill contractual obligations or otherwise operate our business. For example, we experienced system implementation issues in our Clinical Diagnostics segment during our first deployment that impacted invoicing and caused an increase in accounts receivable. In our second deployment, which we launched in July 2015, we experienced delays in manufacturing and logistics, which adversely impacted our sales. We may experience similar and other issues with our upcoming third deployment in Western Europe, which we expect to launch in April 2017. We anticipate that the third deployment will be more complex than our prior deployments due to its scope. While we have invested significant resources in planning, project management and training, additional and significant implementation issues may arise. In addition, our efforts to centralize various business processes and functions within our organization in connection with our ERP implementation may disrupt our operations and negatively impact our business, results of operations and financial condition.

Recent and planned changes to our organizational structure and executive management team could negatively impact our business.

We made significant changes to our organizational structure in 2014, 2015 and 2016. In 2014 and 2015, we functionalized our manufacturing and selling organizations globally and separated them from our marketing and research and development organizations. Specifically, we combined our international selling organization with our North American selling divisions into one global selling group and consolidated our manufacturing, procurement and logistics operations into one global supply chain group. We also created new management positions to head each of these groups. In addition, we appointed new executives to head each of our Life Science and Clinical Diagnostics segments, and we appointed a Chief Operating Officer. We also restructured our Life Science segment based on functional groups rather than product line divisions. In 2016, we began implementing the reorganization of the structure of our European organization. These changes may have unintended consequences, such as

distraction of our management and employees, business disruption, attrition of our workforce, inability to attract or retain key employees, and reduced employee morale or productivity.

Our failure to establish and maintain effective internal control over financial reporting could result in material misstatements in our financial statements, our failure to meet our reporting obligations and cause investors to lose confidence in our reported financial information, which in turn could cause the trading price of our common stock to decline.

Maintaining effective internal control over financial reporting is necessary for us to produce reliable financial statements. As previously disclosed, in connection with our assessment of the effectiveness of internal control over financial reporting and the preparation of our financial statements for the year ended December 31, 2013, we identified a material weakness in the design of monitoring controls over operations at certain of our locations both within the United States and overseas, as well as a lack of documentation required to operate these controls appropriately. Although we remediated this material weakness as of December 31, 2014, we cannot assure you that additional material weaknesses in our internal control over financial reporting will not be identified in the future. For example, we previously identified different material weaknesses in internal controls at December 31, 2012 and December 31, 2010, both of which have been remediated.

Such material weaknesses have adversely affected us in the past and could affect us in the future, and the results of our periodic management evaluations and annual auditor attestation reports regarding the effectiveness of our internal control over financial reporting required by Section 404 of the Sarbanes-Oxley Act of 2002. Any failure to maintain new and more precise monitoring controls and improved detection and communication of financial misstatements across all levels of the organization could result in additional material weaknesses, result in material misstatements in our financial statements and cause us to fail to meet our reporting obligations. This could cause us to lose public confidence, and could cause the trading price of our common stock to decline. For further information regarding our controls and procedures, see Part II, Item 9A of this Annual Report.

Breaches of our information systems could have material adverse effect on our business and results of operations.

Through our sales and eCommerce channels, we collect and store confidential information that customers provide to, among other things, purchase products or services, enroll in promotional programs and register on our Web site. We also acquire and retain information about suppliers and employees in the normal course of business. We also create and maintain proprietary information that is critical to our business, such as our product designs and manufacturing processes. Despite recent initiatives to improve our technology systems, such as our enterprise resource planning implementation and the centralization of our global information technology organization, we could experience a significant data security breach. Computer hackers may attempt to penetrate our or our vendors' information systems and, if successful, misappropriate confidential customer, supplier, employee or other business information, such as our intellectual property. Third parties could also gain control of our systems and use them for criminal purposes while appearing to be us. As a result, we could lose existing customers, have difficulty attracting new customers, be exposed to claims from customers, financial institutions, payment card associations, employees and other persons, have regulatory sanctions or penalties imposed, incur additional expenses or lose revenues as a result of a data privacy breach, or suffer other adverse consequences. Our operations and ability to process sales orders, particularly through our eCommerce channels, could also be disrupted. Any significant breakdown, intrusion, interruption, corruption, or destruction of our systems, as well as any data breaches, could have a material adverse effect on our business and results of operations. See also our risk factors regarding our ERP implementation above and our information technology systems below.

Risks relating to intellectual property rights may negatively impact our business.

We rely on a combination of copyright, trade secret, patent and trademark laws and third-party nondisclosure agreements to protect our intellectual property rights and products. However, we cannot assure you that our intellectual property rights will not be challenged, invalidated, circumvented or rendered unenforceable, or that meaningful protection or adequate remedies will be available to us. For instance, unauthorized third parties have

attempted to copy our intellectual property, reverse engineer or obtain and use information that we regard as proprietary, or have developed equivalent technologies independently, and may do so in the future. Additionally, third parties have asserted patent, copyright and other intellectual property rights to technologies that are important to us, and may do so in the future. If we are unable to license or otherwise access protected technology used in our products, or if we lose our rights under any existing licenses, we could be prohibited from manufacturing and marketing such products. From time to time, we also must enforce our patents or other intellectual property rights or defend ourselves against claimed infringement of the rights of others through litigation. As a result, we could incur substantial costs, be forced to redesign our products, or be required to pay damages to an infringed party. Any of the foregoing matters could adversely impact our business, results of operations and financial condition.

Global economic conditions could continue to adversely affect our operations.

In recent years, we have been faced with very challenging global economic conditions. Further deterioration in the global economic environment may result in decreased demand for our products, increased competition, downward pressure on the prices for our products and longer sales cycles. A weakening of macroeconomic conditions may also adversely affect our suppliers, which could result in interruptions in supply in the future. We have also experienced delays in collecting receivables in certain countries in Western Europe, and we may experience similar delays in these and other countries or regions experiencing liquidity problems. As of December 31, 2016, we had accounts receivable, net of allowance for doubtful accounts, in Spain, Italy, Greece and Portugal of $32.7 million. In addition, a slowing of growth in the Chinese economy and in emerging markets, especially those oil-producing countries that have been affected by the decline in oil prices, could adversely affect our business, results of operations or financial condition. We also are monitoring developments following the recent referendum in the United Kingdom to leave the European Union to determine if there will be any potential impact on our business.

Reductions in government funding and the capital spending programs of our customers could have a material adverse effect on our business, results of operations or financial condition.

Our customers include universities, clinical diagnostics laboratories, government agencies, hospitals and pharmaceutical, biotechnology and chemical companies. The capital spending programs of these institutions and companies have a significant effect on the demand for our products. Such programs are based on a wide variety of factors, including the resources available to make such purchases, the availability of funding from grants by governments or government agencies, the spending priorities for various types of equipment and the policies regarding capital expenditures during industry downturns or recessionary periods. If government funding to our customers were to decrease, or if our customers were to decrease or reallocate their budgets in a manner adverse to us, our business, results of operations or financial condition could be materially and adversely affected. For more information on our customers, see "Sales and Marketing" in Part I, Item 1 of this Annual Report.

Changes in the healthcare industry could have an adverse effect on our business, results of operations and financial condition.

There have been, and will continue to be, significant changes in the healthcare industry in an effort to reduce costs. These changes include:

- The trend towards managed care, together with healthcare reform of the delivery system in the United States and efforts to reform in Europe, has resulted in increased pressure on healthcare providers and other participants in the healthcare industry to reduce selling prices. Consolidation among healthcare providers has resulted in fewer, more powerful groups, whose purchasing power gives them cost containment leverage. In particular, there has been a consolidation of blood transfusion centers, as well as an industry decline in the number of blood transfusions. These industry trends and competitive forces place constraints on the levels of overall pricing, and thus could have a material adverse effect on our gross margins for products we sell in clinical diagnostic markets.

- Third party payors, such as Medicare and Medicaid in the United States, have reduced their reimbursements for certain medical products and services. Our Clinical Diagnostics business is impacted by the level of reimbursement available for clinical tests from third party payors. In the United States payment for many diagnostic tests furnished to Medicare fee-for-service beneficiaries is made based on the Medicare Clinical Laboratory Fee Schedule (CLFS), a fee schedule established and adjusted from time to time by the Centers for Medicare and Medicaid Services (CMS). Some commercial payors are guided by the CLFS in establishing their reimbursement rates. Clinicians may decide not to order clinical diagnostic tests if third party payments are inadequate, and we cannot predict whether third party payors will offer adequate reimbursement for tests utilizing our products to make them commercially attractive. Legislation, such as the Patient Protection and Affordable Care Act, as amended by the Health Care and Education Reconciliation Act (PPACA) and the Middle Class Tax Relief and Job Creation Act of 2012, has reduced the payments for clinical laboratory services paid under the CLFS. In addition, the Protecting Access to Medicare Act of 2014 will make significant changes to the way Medicare will pay for clinical laboratory services, which will further reduce reimbursement rates.

- The PPACA has also imposed a 2.3% excise tax on the sales of certain medical devices in the U.S., which we are required to pay on most of our United States Clinical Diagnostic sales. However, the Consolidated Appropriations Act, 2016 (Pub. L. 114-113), signed into law on December 18, 2015, includes a two year moratorium on the medical device excise tax during the period beginning on January 1, 2016, and ending on December 31, 2017.

To the extent that the healthcare industry seeks to address the need to contain costs stemming from reform measures such as those contained in the PPACA and the Protecting Access to Medicare Act of 2014, or in future legislation, by limiting the number of clinical tests being performed or the amount of reimbursement available for such tests, our business, results of operations and financial condition could be adversely affected. If these changes in the healthcare markets in the United States and Europe continue, we could be forced to alter our approach in selling, marketing, distributing and servicing our products.

We are subject to substantial government regulation, and any changes in regulation or violations of regulations by us could adversely affect our business, prospects, results of operations or financial condition.

Some of our products (primarily our Clinical Diagnostic products), production processes and marketing are subject to U.S. federal, state and local, and foreign regulation, including by the FDA in the United States and its foreign counterparts. The FDA regulates our Clinical Diagnostic products as medical devices, and we are subject to significant regulatory clearances or approvals to market our Clinical Diagnostic products and other requirements including, for example, recordkeeping and reporting requirements, such as the FDA's medical device reporting regulations and reporting of corrections and removals. The FDA has broad regulatory and enforcement powers. If the FDA determines that we have failed to comply with applicable regulatory requirements, it can impose a variety of enforcement actions ranging from public warning letters, fines, injunctions, consent decrees and civil penalties to suspension or delayed issuance of approvals, seizure or recall of our products, total or partial shutdown of production, withdrawal of approvals or clearances already granted, and criminal prosecution.

The FDA can also require us to repair, replace or refund the cost of devices that we manufactured or distributed. In addition, the FDA may change its clearance and approval policies, adopt additional regulations or revise existing regulations, or take other actions, which may prevent or delay approval or clearance of our products or impact our ability to modify our currently approved or cleared products on a timely basis. Changes in the FDA's review of certain clinical diagnostic products referred to as laboratory developed tests, which are tests developed by a single laboratory for use only in that laboratory, could affect some of our customers who use our Life Science instruments for laboratory developed tests. In the past, the FDA has chosen to not enforce applicable regulations and has not reviewed such tests for approval. However, the FDA has issued draft guidance that it may begin enforcing its medical device requirements, including premarket submission requirements, to such tests. Any delay in, or failure to receive or maintain, clearance or approval for our products could prevent us from generating revenue from these products and adversely affect our business operations and financial results. Additionally, the FDA and other regulatory authorities have broad enforcement powers. Regulatory enforcement or inquiries, or other increased

scrutiny on us, could affect the perceived safety and efficacy of our products and dissuade our customers from using our products.

Many foreign governments have similar rules and regulations regarding the importation, registration, labeling, sale and use of our products. Such agencies may also impose new requirements that may require us to modify or re-register products already on the market or otherwise impact our ability to market our products in those countries. For example, Europe published draft regulations in June 2016 that include broad changes to its regulations regarding in vitro diagnostic devices and medical devices, including stricter product labeling requirements, Russia has recently enacted more stringent medical product registration and labeling regulations, China has enacted stricter labeling requirements, and we expect other countries, such as Brazil and India, to impose more regulations that impact our product registrations. Due to these evolving and diverse requirements, we face uncertain product approval timelines, additional time and effort to comply, reduced sales and potential fines for noncompliance. Increasing protectionism in such countries also impedes our ability to compete with local companies. For example, we may not be able to participate in certain public tenders in Russia because of increasing measures to restrict access to such tenders for companies without local manufacturing capabilities. Specifically, a resolution passed by Russia in February 2015 prohibited the procurement of certain types of medical devices by Russian state entities from foreign companies provided there are a sufficient number of Russian manufacturers submitting tenders. In December 2016, Russia continued its focus on import substitution by passing a resolution that added to the list of certain medical devices which participate in state procurement on a restricted basis. Such regulations could adversely affect our business, results of operations and financial condition.

We are also subject to government regulation of the use and handling of a number of materials and controlled substances. The U.S. Drug Enforcement Administration establishes registration, security, recordkeeping, reporting, storage, distribution and other requirements for controlled substances pursuant to the Controlled Substances Act of 1970. Failure to comply with present or future laws and regulations could result in substantial liability to us, suspension or cessation of our operations, restrictions on our ability to expand at our present locations or require us to make significant capital expenditures or incur other significant expenses.

We cannot assure you that we will be able to integrate acquired companies, products or technologies into our company successfully, or we may not be able to realize the anticipated benefits from the acquisitions.

As part of our overall business strategy, we pursue acquisitions of and investments in complementary companies, products and technologies. In order to be successful in these activities, we must, among other things:

- assimilate the operations and personnel of acquired companies;
- retain acquired business customers;
- minimize potential disruption to our ongoing business;
- retain key technical and management personnel;
- integrate acquired companies into our strategic and financial plans;
- accurately assess the value of target companies, products and technologies;
- comply with new regulatory requirements;
- harmonize standards, controls, procedures and policies;
- minimize the impact to our relationships with our employees and customers; and
- assess, document and remediate any deficiencies in disclosure controls and procedures and internal control over financial reporting.

The benefits of any acquisition may prove to be less than anticipated and may not outweigh the costs reported in our financial statements. Completing any potential future acquisitions could cause significant diversion of our management's time and resources. If we acquire new companies, products or technologies, we may be required to assume contingent liabilities or record impairment charges for goodwill and other intangible assets over time. We cannot assure you that we will successfully overcome these risks or any other problems we encounter in connection with any acquisitions, and any such acquisitions could adversely affect our business, results of operations and financial condition.

Product quality and liability issues could harm our reputation and negatively impact our business, results of operations and financial condition.

We must adequately address quality issues associated with our products, including defects in our engineering, design and manufacturing processes, as well as defects in third-party components included in our products. Our instruments, reagents and consumables are complex, and identifying the root cause of quality issues, especially those affecting reagents or third-party components, is difficult. We may incur significant costs and expend substantial time in researching and remediating such issues. Quality issues could also delay our launching or manufacturing of new products. In addition, quality issues, unapproved uses of our products, or inadequate disclosure of risks related to our products, could result in product recalls or product liability or other claims being brought against us. These issues could harm our reputation, impair our relationship with existing customers and harm our ability to attract new customers, which could negatively impact our business, results of operations and financial condition.

Lack of key personnel could hurt our business.

Our products are very technical in nature. In general, only highly qualified and well-trained scientists have the necessary skills to develop, market and sell our products, and many of our manufacturing positions require very specialized knowledge and skills. In addition, the global nature of our business also requires that we have sophisticated and experienced staff to comply with increasingly complex international laws and regulations. We face intense competition for these professionals from our competitors, customers, marketing partners and other companies throughout our industry. In particular, the job market in Northern California, where many of our employees are located, is very competitive. If we do not offer competitive compensation and benefits, we may fail to retain or attract a sufficient number of qualified personnel, which could impair our ability to properly run our business.

In some cases we rely on temporary personnel or consultants, and we may do so in the future. Such temporary personnel or consultants may lack the knowledge and/or specific skills necessary for our business, require time to train without benefiting us through extended employment and increase our costs. In addition, as noted above, our strategic initiatives, such as our internal restructuring and ERP implementation, may be burdensome and disruptive and lead to employee dissatisfaction and attrition.

A reduction or interruption in the supply of components and raw materials could adversely affect our manufacturing operations and related product sales.

The manufacture of many of our products requires the timely delivery of sufficient amounts of quality components and materials. We manufacture our products in numerous manufacturing facilities around the world. We acquire our components and materials from many suppliers in various countries. We work closely with our suppliers to ensure the continuity of supply but we cannot guarantee these efforts will always be successful. Further, while we seek to diversify our sources of components and materials, in certain instances we acquire components and materials from a sole supplier. In addition, due to the regulatory environment in which we operate, we may be unable to quickly establish additional or replacement sources for some components or materials. If our supply is reduced or interrupted or of poor quality, and we are unable to develop alternative sources for such supply, our ability to manufacture our products in a timely or cost-effective manner could be adversely affected, which would adversely affect our ability to sell our products.

If our information technology systems are disrupted, or if we fail to successfully implement, manage and integrate our information technology and reporting systems, our business, results of operations and financial condition could be harmed.

Our information technology (IT) systems are an integral part of our business, and a serious disruption of our IT systems could have a material adverse effect on our business, results of operations and financial condition. We depend on our IT systems to process orders, manage inventory and collect accounts receivable. Our IT systems also allow us to efficiently purchase products from our suppliers and ship products to our customers on a timely basis,

maintain cost-effective operations and provide customer service. We may experience disruption of our IT systems due to redundancy issues with our network servers. We cannot assure you that our contingency plans will allow us to operate at our current level of efficiency.

Our ability to implement our business plan in a rapidly evolving market requires effective planning, reporting and analytical processes. We expect that we will need to continue to improve and further integrate our IT systems, reporting systems and operating procedures by training and educating our employees with respect to these improvements and integrations on an ongoing basis in order to effectively run our business. We may suffer interruptions in service, loss of data or reduced functionality when we upgrade or change systems. If we fail to successfully manage and integrate our IT systems, reporting systems and operating procedures, it could adversely affect our business, results of operations and financial condition. See also our risk factors regarding our ERP implementation and data security above and events beyond our control below.

Natural disasters, terrorist attacks, acts of war or other events beyond our control may cause damage or disruption to us and our employees, facilities, information systems, security systems, vendors and customers, which could significantly impact our business, results of operations and financial condition.

We have significant manufacturing and distribution facilities, including in the western United States, France, Switzerland, Germany and Singapore. In particular, the western United States has experienced a number of earthquakes, wildfires, floods, landslides and other natural disasters in recent years. These occurrences could damage or destroy our facilities which may result in interruptions to our business and losses that exceed our insurance coverage. In addition, strikes or other labor unrest at any of our sites or surrounding areas could cause disruption to our business.

Acts of terrorism, bioterrorism, violence or war could also affect the markets in which we operate, our business operations and strategic plans. Political unrest may affect our sales in certain regions, such as in Southeast Asia, the Middle East and Eastern Europe. In particular, the political turmoil in Ukraine, along with the response of the Russian and U.S. governments to this situation, has the potential to impact our operations in Russia. Any of these events could adversely affect our business, results of operations and financial condition.

Environmental, health and safety regulations and enforcement proceedings may negatively impact our business, results of operations and financial condition.

Our operations are subject to federal, state, local and foreign environmental laws and regulations that govern such activities as transportation of goods, emissions to air and discharges to water, as well as handling and disposal practices for solid, hazardous and medical wastes. In addition to environmental laws that regulate our operations, we are also subject to environmental laws and regulations that create liability and clean-up responsibility for spills, disposals or other releases of hazardous substances into the environment as a result of our operations or otherwise impacting real property that we own or operate. The environmental laws and regulations also subject us to claims by third parties for damages resulting from any spills, disposals or releases resulting from our operations or at any of our properties. We must also comply with various health and safety regulations in the United States and abroad in connection with our operations.

We may in the future incur capital and operating costs to comply with currently existing laws and regulations, and possible new statutory enactments, and these expenditures may be significant. We have incurred, and may in the future incur, fines related to environmental matters and/or liability for costs or damages related to spills or other releases of hazardous substances into the environment at sites where we have operated, or at off-site locations where we have sent hazardous substances for disposal. We cannot assure you, however, that such matters or any future obligations to comply with environmental or health and safety laws and regulations will not adversely affect our business, results of operations or financial condition.

We may be subject to additional tax liabilities.

We are subject to income taxes in the United States and many foreign jurisdictions. We calculate our provision for income taxes in each jurisdiction in which we operate. Significant judgment is required in determining our worldwide provision for income taxes and in the ordinary course of business, there are many tax positions taken where the ultimate resolution is uncertain. We are subject to the examination of our tax positions in the United States and foreign jurisdictions. Taxing authorities have disagreed with our judgment in the past and may disagree with positions we take in the future resulting in assessments of additional taxes. Economic and political pressures to increase tax revenues in various jurisdictions may make resolving tax disputes more difficult. For example, in recent years, the tax authorities in Europe have disagreed with our tax positions related to hybrid debt, research and development credits, transfer pricing and indirect taxes, among others. We regularly assess the likelihood of the outcome resulting from these examinations to determine the adequacy of our provision for income taxes. Although we believe our tax estimates are reasonable, the final determination of tax audits and any related litigation could be materially different from our historical income tax provisions and accruals. The results of an audit or litigation could have a material effect on our consolidated financial statements in the period or periods for which that determination is made. Changes in factors outside of our control, such as changes in tax laws or rates, changes in the interpretation of tax laws or changes in the jurisdictional mix of our earnings could adversely affect our financial position and results of operations.

Our debt may restrict our future operations.

We have substantial debt and have the ability to incur additional debt. As of December 31, 2016, we had approximately $434.5 million of outstanding indebtedness. In addition, we have a revolving credit facility that provides for up to $200.0 million, $0.8 million of which has been utilized for domestic standby letters of credit. Our incurrence of substantial amounts of debt may have important consequences. For instance, it could:

- make it more difficult for us to satisfy our financial obligations, including those relating to our outstanding debt;
- require us to dedicate a substantial portion of our cash flow from operations to the payment of interest and principal due under our debt, which will reduce funds available for other business purposes;
- increase our vulnerability to general adverse economic and industry conditions;
- limit our flexibility in planning for, or reacting to, changes in our business and the industries in which we operate;
- place us at a competitive disadvantage compared with some of our competitors that have less debt; and
- limit our ability to obtain additional financing required to fund working capital and capital expenditures and for other general corporate purposes.

Our existing credit facility and the terms of our other debt instruments, including agreements we may enter in the future, contain or will contain covenants imposing significant restrictions on our business. These restrictions may affect our ability to operate our business and may limit our ability to take advantage of potential business opportunities as they arise. These covenants place restrictions on our ability to, among other things: incur additional debt; acquire other businesses or assets through merger or purchase; create liens; make investments; enter into transactions with affiliates; sell assets; in the case of some of our subsidiaries, guarantee debt; and declare or pay dividends, redeem stock or make other distributions to stockholders. Our existing credit facility also requires that we comply with certain financial ratios, including a maximum consolidated leverage ratio test and a minimum consolidated interest coverage ratio test.

Our ability to comply with these covenants may be affected by events beyond our control, including prevailing economic, financial and industry conditions. The breach of any of these restrictions could result in a default. An event of default under our debt agreements would permit some of our lenders to declare all amounts borrowed from them to be due and payable, together with accrued and unpaid interest. In addition, acceleration of our other indebtedness may cause us to be unable to make interest payments on our outstanding notes and repay the principal

amount of our outstanding notes or may cause the future subsidiary guarantors, if any, to be unable to make payments under the guarantees.

We are subject to healthcare fraud and abuse laws and regulations and could face substantial penalties if we are unable to fully comply with such laws.

We are subject to healthcare fraud and abuse regulation and enforcement by both the U.S. federal government and the U.S. states and foreign governments in which we conduct our business. These healthcare laws and regulations include, for example:

- the U.S. federal Anti-Kickback Statute, which prohibits, among other things, persons or entities from soliciting, receiving, offering or providing remuneration, directly or indirectly, in return for or to induce either the referral of an individual for, or the purchase order or recommendation of, any item or services for which payment may be made under a federal healthcare program such as the Medicare and Medicaid programs;

- U.S. federal false claims laws, which prohibit, among other things, individuals or entities from knowingly presenting, or causing to be presented, claims for payment from Medicare, Medicaid, or other third-party payors that are false or fraudulent. In addition, the U.S. federal government may assert that a claim including items or services resulting from a violation of the federal Anti-Kickback Statute constitutes a false or fraudulent claim for purposes of the false claims statutes;

- the U.S. Physician Payment Sunshine Act, which requires certain manufacturers of drugs, biologics, devices and medical supplies to record any transfers of value to U.S. physicians and U.S. teaching hospitals;

- the Health Insurance Portability and Accountability Act ("HIPAA"), as amended by the Health Information Technology for Economic and Clinical Health Act, which governs the conduct of certain electronic healthcare transactions and protects the security and privacy of protected health information; and

- state or foreign law equivalents of each of the U.S. federal laws above, such as anti-kickback and false claims laws, which may apply to items or services reimbursed by any third-party payor, including commercial insurers.

These laws will continue to impose administrative, cost and compliance burdens on us. The shifting compliance environment and the need to build and maintain robust systems to comply with multiple jurisdictions with different compliance and/or reporting requirements increases the possibility that a healthcare company may violate one or more of these requirements. In addition, any action against us for violation of these laws, even if we successfully defend against it, could cause us to incur significant legal expenses and divert our management's attention from the operation of our business. If our operations are found to be in violation of any of the laws described above or any other governmental regulations that apply to us, we may be subject to penalties, including civil and criminal penalties, damages, fines, exclusion from the Medicare and Medicaid programs, and the curtailment or restructuring of our operations, any of which could adversely affect our ability to operate our business, results of operations and financial condition.

We may incur losses in future periods due to write-downs in the value of financial instruments.

We have positions in a variety of financial instruments including asset backed securities and other similar instruments. Financial markets are quite volatile and the markets for these securities can be illiquid. The value of these securities will continue to be impacted by external market factors including default rates, changes in the value of the underlying property, such as residential or commercial real estate, rating agency actions, the prices at which observable market transactions occur and the financial strength of various entities, such as financial guarantors who provide insurance for the securities. Should we need to convert these positions to cash, we may not be able to sell these instruments without significant losses due to current debtor financial conditions or other market considerations.

Regulations related to "conflict minerals" could adversely impact our business.

As part of the Dodd-Frank Wall Street Reform and Consumer Protection Act, the SEC adopted disclosure requirements regarding the use of certain minerals, known as conflict minerals, which are mined from the Democratic Republic of Congo (DRC) and adjoining countries, as well as procedures regarding a manufacturer's efforts to identify the sourcing of such minerals and metals produced from those minerals. In November 2016, the EU institutions agreed on the text of a conflict minerals regulation. After formal approval by the European Parliament and European Council, the regulation will be published and enter into force 20 days later. We have incurred, and will continue to incur, additional costs in order to comply with the SEC's disclosure requirements. In addition, we might incur further costs due to possible changes to our products, processes, or sources of supply as a consequence of our due diligence activities. As our supply chain is complex, we may not be able to sufficiently verify the origins of the specified minerals used in our products through our due diligence procedures, which may harm our reputation. In addition, we may encounter challenges to satisfy those customers who require that all of the components of our products be certified as "DRC conflict free", which could place us at a competitive disadvantage if we do not do so. We filed our report for the calendar year 2015 with the SEC on May 27, 2016.

Risks related to our common stock

A significant majority of our voting stock is held by the Schwartz family, which could lead to conflicts of interest.

We have two classes of voting stock: Class A Common Stock and Class B Common Stock. With a few exceptions, holders of Class A and Class B Common Stock vote as a single class. When voting as a single class, each share of Class A Common Stock is entitled to one-tenth of a vote, while each share of Class B Common Stock has one vote. In the election or removal of directors, the classes vote separately and the holders of Class A Common Stock are entitled to elect 25% of the Board of Directors, with holders of Class B Common Stock electing the remaining directors.

As a result of the Schwartz family's ownership of our Class A and Class B Common Stock, they are able to elect a majority of our directors, effect fundamental changes in our direction and control matters affecting us, including the determination of business opportunities that may be suitable for our company. The Schwartz family may exercise its control over us according to interests that are different from other investors' or debtors' interests. In particular, this concentration of ownership and voting power may have the effect of delaying or preventing a change in control of our company.

ITEM 1B. UNRESOLVED STAFF COMMENTS

None.

ITEM 2. PROPERTIES

We own our corporate headquarters located in Hercules, California. The principal manufacturing and research locations for each segment are as follows:

Segment	Location	Owned/Leased
Life Science	Greater San Francisco Bay Area, California	Owned/Leased
	Greater Boston Area, Massachusetts	Leased
	Singapore, Singapore	Leased
	Oxford, England	Leased
Clinical Diagnostics	Greater San Francisco Bay Area, California	Owned/Leased
	Irvine, California	Leased
	Greater Seattle Area, Washington	Leased
	Greater Boston Area, Massachusetts	Leased
	Lille, France	Owned
	Greater Paris Area, France	Leased
	Nazareth-Eke, Belgium	Leased
	Cressier, Switzerland	Owned/Leased
	Dreieich, Germany	Owned/Leased

Most manufacturing and research facilities also house administration, sales and distribution activities. In addition, we lease office and warehouse facilities in a variety of locations around the world. The facilities are used principally for sales, service, distribution and administration for both segments.

ITEM 3. LEGAL PROCEEDINGS

On January 23, 2015, the City of Riviera Beach General Employees' Retirement System filed a shareholder derivative lawsuit in the Superior Court of California, Contra Costa County, against three of our current directors and one former director. We are also named as a nominal defendant. In the complaint, the plaintiff alleges that our directors breached their fiduciary duty of loyalty by failing to ensure that we had sufficient internal controls and systems for compliance with the Foreign Corrupt Practices Act ("FCPA"); that we failed to provide adequate training on the FCPA; and that based on these actions, the directors have been unjustly enriched. Purportedly seeking relief on our behalf, the plaintiff seeks an award of restitution and unspecified damages, costs and expenses (including attorneys' fees). On April 23, 2015, we and the individual defendants filed a demurrer requesting dismissal of the complaint in this case. The demurrer was heard on August 6, 2015, and the Court granted the demurrer for failure to make a demand on our Board of Directors on August 17, 2015, but provided leave to amend. On September 4, 2015, the plaintiff filed an amended complaint and simultaneously served a litigation demand letter on our Board of Directors ("Board") via its counsel in this action. The letter demanded that we investigate and bring appropriate legal action against certain individuals, including the defendants in the City of Riviera Beach case and six current and former employees. The plaintiff also moved for a temporary stay in the proceedings, purportedly to enable the Board to respond to the demand. The Board formed a Demand Review Committee to respond to the demand. On February 24, 2016, the Demand Review Committee reported to the Board that it had

concluded its investigation and unanimously determined that it is not in the best interests of the Company and its stockholders to pursue litigation against any individuals named in the City of Riviera Beach's litigation demand letter. On October 6, 2015, we and the individual defendants filed a second demurrer, seeking to dismiss the case for failure to make a timely pre-suit demand. The case was stayed pending mediation. The caption is City of Riviera Beach General Employees' Retirement System v. Schwartz et al., Case No. C-15-00140. The lawsuit and demand letter are referred to collectively as the "California Action".

On August 13, 2015 and August 18, 2015, respectively, each of International Brotherhood of Electrical Workers Local 38 Pension Fund and Wayne County Employees' Retirement System filed a stockholder derivative complaint in the Delaware Court of Chancery against four of our current directors and one former director. We are named as a nominal defendant in the complaints. The complaints allege that the defendants failed to cause us to develop internal controls sufficient to ensure our compliance with the FCPA. The plaintiffs assert claims for breach of fiduciary duty and unjust enrichment and request an award of the damages we sustained as a result of the alleged violations, among other relief. The two lawsuits were consolidated on August 27, 2015. The case was stayed pending mediation. The caption of the consolidated case is In re Bio-Rad Laboratories, Inc. Stockholder Litigation, Consol. C.A. No. 11387-VCN (Del. Ch.). The cases filed in the Delaware Court of Chancery, together with the California Action, are referred to collectively as the "Derivative Actions".

The parties filed a Stipulation dated November 4, 2016 with the Superior Court of California for Contra Costa County that sets forth the terms of a proposed settlement of the Derivative Actions. The proposed settlement includes the dismissal with prejudice of all claims asserted in the Derivative Actions, an agreed-upon set of revised corporate procedures, and no monetary payment other than an award of attorneys' fees and costs to the plaintiffs' counsel. We and the other defendants do not admit any liability or fault in connection with the proposed settlement. On December 22, 2016 the Superior Court of California for Contra Costa County issued an order granting preliminary approval of this proposed settlement. Pursuant to the order, the Court will hold a hearing for final approval of the settlement on March 2, 2017, and any objections to the settlement were required to be filed in writing with the Court on or before February 15, 2017.

On May 27, 2015, our former general counsel, Sanford S. Wadler, filed a lawsuit in the U.S. District Court, Northern District of California, against us and four of our current directors and one former director. The plaintiff's suit alleged whistleblower retaliation in violation of the Sarbanes-Oxley Act and the Dodd-Frank Act for raising FCPA-related concerns. Mr. Wadler also alleged wrongful termination in violation of public policy, non-payment of wages and waiting time penalties in violation of the California Labor Code. The plaintiff sought back pay, compensatory damages for lost wages, earnings, retirement benefits and other employee benefits, compensation for mental pain and anguish and emotional distress, waiting time penalties, punitive damages, litigation costs (including attorneys' fees) and reinstatement of employment. On July 28, 2015 we filed a motion to dismiss the plaintiff's complaint and specifically requested dismissal of the claims alleged against us under the Dodd-Frank Act and California Labor Code 1102.5 and the claims against the directors under the Sarbanes-Oxley Act and the Dodd-Frank Act. On October 23, 2015, the District Court granted our motion with respect to the alleged violations of the Sarbanes-Oxley Act against all the director defendants except Norman Schwartz with prejudice. The Court denied our motion to dismiss the claims under the Dodd-Frank Act as against both us and the director defendants. The parties engaged in mediation of the case on April 19, 2016 and on September 14, 2016. The mediations did not result in a settlement. The trial commenced on January 17, 2017 and concluded on February 6, 2017. Mr. Wadler was awarded $10.92 million, plus prejudgment interest of $141,608, post-judgment interest, and Mr. Wadler's litigation costs, expert witness fees, and reasonable attorneys' fees as approved by the Court. We have provided for the judgment, interest and Mr. Wadler's litigation costs. We are considering an appeal of the judgment.

Bio-Rad received three notices of violations from the Bay Area Air Quality Management District ("District"). The District alleges that we operated three (3) power generation units without appropriate monitoring and recordkeeping and exceeded permissible levels of emissions during those operations. We are cooperating with the District and are investigating the allegations. No formal proceeding has been initiated by the District.

We are also party to various other claims, legal actions and complaints arising in the ordinary course of business. We cannot at this time reasonably estimate a range of exposure, if any, of the potential liability with respect to these matters. While we do not believe, at this time, that any ultimate liability resulting from any of these other matters will have a material adverse effect on our results of operations, financial position or liquidity, we cannot give any assurance regarding the ultimate outcome of these other matters and their resolution could be material to our operating results for any particular period, depending on the level of income for the period.

ITEM 4. MINE SAFETY DISCLOSURES

Not applicable.

PART II.

ITEM 5. MARKET FOR REGISTRANT'S COMMON EQUITY, RELATED STOCKHOLDER MATTERS AND ISSUER PURCHASES OF EQUITY SECURITIES

Information Concerning Common Stock

Bio-Rad's Class A and Class B Common Stock are listed on the New York Stock Exchange with the symbols BIO and BIO.B, respectively. The following sets forth, for the periods indicated, the high and low intraday sales prices for our Class A and Class B Common Stock.

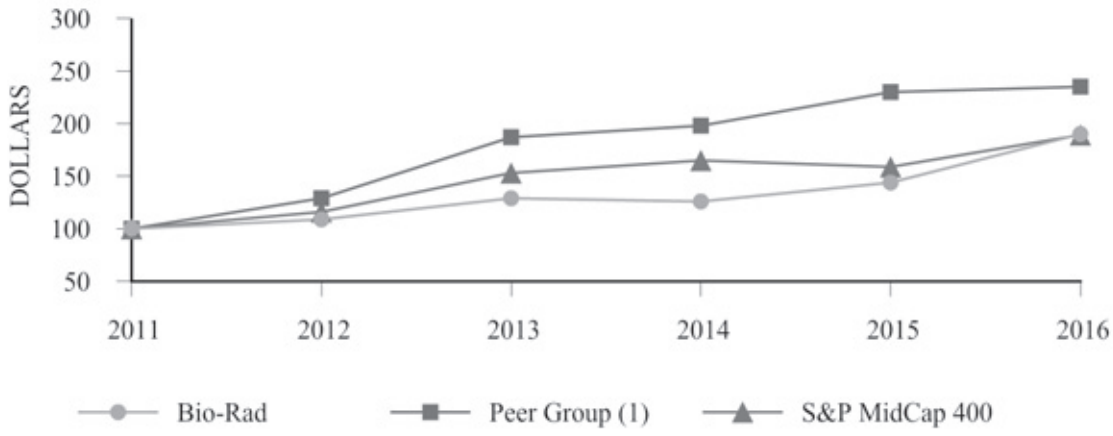
	Class A		Class B	
	High	Low	High	Low
2016				
Fourth Quarter	$ 184.89	$ 154.89	$ 194.15	$ 154.05
Third Quarter	164.45	140.53	171.12	140.69
Second Quarter	150.00	135.02	150.04	134.86
First Quarter	139.63	122.03	146.41	123.43
2015				
Fourth Quarter	$ 142.48	$ 132.49	$ 141.77	$ 134.08
Third Quarter	152.38	131.25	152.57	131.83
Second Quarter	151.97	133.38	151.93	123.31
First Quarter	137.23	112.51	137.23	113.32

On February 14, 2017, we had 275 holders of record of Class A Common Stock and 126 holders of record of Class B Common Stock. Bio-Rad has never paid a cash dividend and has no present plans to pay cash dividends.

See Item 12 of Part III of this report for the security ownership of certain beneficial owners and management and for securities authorized for issuance under equity compensation plans.

Stock Performance Graph

The following graph compares the cumulative stockholder returns over the past five years for our Class A Common Stock, the S&P 400 MidCap Index and a selected peer group, assuming $100 invested on December 31, 2011, and reinvestment of dividends if paid:



(1) The Peer Group consists of the following public companies: Danaher, Becton Dickinson, Thermo Fisher Scientific, Meridian Bioscience and PerkinElmer. Companies in our peer group reflect our participation in two different markets: life science research products and clinical diagnostics. No single public or private company has a comparable mix of products which serve the same markets. In many cases, only one division of a peer-group company competes in the same market as we do. Collectively, however, our peer group reflects products and markets similar to those of Bio-Rad.

This stock performance graph shall not be deemed incorporated by reference by any general statement incorporating by reference into any filing under the Securities Act or the Exchange Act, and shall not otherwise be deemed filed under these Acts.

ITEM 6. SELECTED FINANCIAL DATA

BIO-RAD LABORATORIES, INC.
Selected Financial Data
(in thousands, except per share data)

	Year Ended December 31,				
	2016	2015	2014	2013	2012
Net sales	$ 2,068,172	$ 2,019,441	$ 2,175,044	$ 2,132,694	$ 2,069,235
Cost of goods sold	930,085	897,771	996,527	954,216	914,077
Gross profit	1,138,087	1,121,670	1,178,517	1,178,478	1,155,158
Selling, general and administrative expense	816,724	761,990	808,200	798,070	681,778
Research and development expense	205,864	192,972	220,333	210,952	209,204
Impairment losses on goodwill and long-lived assets	62,305	—	—	—	—
Interest expense	21,942	21,692	22,131	61,271	51,112
Foreign exchange losses, net	4,542	10,249	9,305	8,566	5,040
Other (income) expense, net	(14,850)	(11,080)	(13,009)	(12,766)	(21,883)
Income before income taxes	41,560	145,847	131,557	112,385	229,907
Provision for income taxes	(13,435)	(32,754)	(42,712)	(34,574)	(64,361)
Net income attributable to noncontrolling interests	—	—	—	(21)	(69)
Net income attributable to Bio-Rad	$ 28,125	$ 113,093	$ 88,845	$ 77,790	$ 165,477
Basic earnings per share	$ 0.96	$ 3.87	$ 3.08	$ 2.72	$ 5.85
Diluted earnings per share	$ 0.95	$ 3.85	$ 3.05	$ 2.69	$ 5.78
Cash dividends paid per common share	$ —	$ —	$ —	$ —	$ —
Total assets	$ 3,850,504	$ 3,709,718	$ 3,341,278	$ 3,388,790	$ 3,443,503
Long-term debt, net of current maturities	$ 434,186	$ 433,883	$ 435,710	$ 435,615	$ 732,414

ITEM 7. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

This discussion should be read in conjunction with the information contained in our consolidated financial statements and the accompanying notes which are an integral part of the statements.

Overview. We are a multinational manufacturer and worldwide distributor of our own life science research and clinical diagnostics products. Our business is organized into two primary segments, Life Science and Clinical Diagnostics, with the mission to provide scientists with specialized products needed for biological research and clinical diagnostics.

We sell more than 8,000 products and services to a diverse client base comprised of scientific research, healthcare, education and government customers worldwide. We do not disclose quantitative information about our different products and services as it is impractical to do so based primarily on the numerous products and services that we sell and the global markets that we serve.

We manufacture and supply our customers with a range of reagents, apparatus and equipment to separate complex chemical and biological materials and to identify, analyze and purify components. Because our customers require standardization for their experiments and test results, much of our revenues are recurring.

We are impacted by the support of many governments for both research and healthcare. The current global economic outlook is still uncertain as the need to control government social spending by many governments limits

opportunities for growth. Adding to this uncertainty was the recent referendum in the United Kingdom to withdraw from the European Union, and a change in the U.S. executive branch of government. Approximately 37% of our 2016 consolidated net sales are derived from the United States and approximately 63% are derived from international locations, with Europe being our largest international region. The international sales are largely denominated in local currencies such as the Euro, Swiss Franc, Japanese Yen, Chinese Yuan and British Sterling. As a result, our consolidated net sales expressed in dollars benefit when the U.S. dollar weakens and suffer when the dollar strengthens. When the U.S. dollar strengthens, we benefit from lower cost of sales from our own international manufacturing sites as well as non-U.S. suppliers, and from lower international operating expenses. We regularly discuss our changes in revenue and expense categories in terms of both changing foreign exchange rates and in terms of a currency neutral basis, if notable, to explain the impact currency has on our results.

On February 15, 2017, we acquired all the issued and outstanding stock of RainDance Technologies, Inc. (RainDance) for approximately $87 million including certain assumed net liabilities. Cash payments at closing were $82.9 million. The acquisition will be included in our Life Science segment's results of operations from the acquisition date and will be accounted for as a business combination. RainDance's foundational intellectual property portfolio and product lines encompass a wide range of biological reactions in droplets, with potential applications in life science research and clinical research. These genomic tools provide ultra-sensitive detection of genetic variations in cancer as well as inherited and infectious diseases, enabling research in areas such as non-invasive liquid biopsy. We believe that RainDance's droplet-based solutions will extend our reach into next-generation sequencing applications and strengthen our position in the area of Droplet Digital™ PCR, offering customers with solutions for a wide range of nucleic acid detection applications. See Note 17 to the consolidated financial statements.

During the fourth quarter of 2016, we fully impaired goodwill and in-process research and development in the amounts of $13.5 million and $46.4 million, respectively, associated with our 2014 acquisition of GnuBIO, Inc.

In May 2016, we announced the elimination or relocation of various positions as part of restructuring plans approved by management. In connection with this announcement, for the year ended December 31, 2016, we recorded $12.5 million in restructuring charges related to severance and other employee benefits, of which $9.0 million is anticipated to be paid through 2019. These restructuring actions are primarily intended to reduce, eliminate or relocate our global workforce in order to better align expenses to our revenue and gross margin profile and position us for improved operating performance. These actions are aligned with the creation and evolution of our organization structure and coordinated with the implementation of our single instance ERP platform. In the future, we may take additional restructuring actions to gain operating efficiencies or reduce our operating expenses, while simultaneously implementing additional cost containment measures and expense control programs. Such restructuring actions are subject to significant risks, including delays in implementing expense control programs or workforce reductions and the failure to meet operational targets due to the loss of employees or a decrease in employee morale, any of which would impair our ability to achieve anticipated cost reductions. If we do not achieve the anticipated cost reductions, our business could be harmed. See Note 15 to the consolidated financial statements.

In January 2016, we acquired a high performance analytical flow cytometer platform from Propel Labs (Propel) that will enable advanced and novice users to perform basic and multi-parameter cytometry for a wide range of applications and chemistries. This asset acquisition was accounted for as a business combination and is included in our Life Science segment's results of operations from the acquisition date. The fair values of the net assets acquired from Propel as of the acquisition date were determined to be $32.7 million of definite-lived intangible assets and $0.1 million of goodwill, after the effects of a calculation revision that were reflected in the fourth quarter of 2016. This revision reduced goodwill/intangibles and contingent consideration by the same amount and had no significant impact on our Consolidated Income Statement.

The fair value of the consideration as of the acquisition date was $32.8 million as revised, which included $9.5 million paid in cash at the closing date and $23.3 million in contingent consideration potentially payable to Propel. The contingent consideration was based on a probability-weighted income approach related to the achievement of

sales milestones, ranging from 39% to 20% for the calendar years 2017 through 2020. The sales milestones could potentially range from $0 to an unlimited amount through December 31, 2020. The contingent consideration was recognized at its estimated fair value of $25.4 million as of December 31, 2016.

As previously disclosed, in May 2010 we voluntarily disclosed to the U.S. Department of Justice (DOJ) and the Securities and Exchange Commission (SEC) certain likely or potential violations of the U.S. Foreign Corrupt Practices Act (FCPA). Effective November 3, 2014, we entered into a non-prosecution agreement (NPA) with the DOJ and consented to the entry of an Order by the SEC (SEC Order), which actions resolve both the DOJ and SEC investigations. As a result of the settlements with the DOJ and the SEC, during the fourth quarter of 2014 we paid a total of $55.1 million that included a penalty of $14.4 million, $35.1 million in disgorgement, and $5.6 million in interest. On October 28, 2016, the DOJ and SEC informed Bio-Rad that they did not intend to extend the NPA after it expired on November 2, 2016.

Critical Accounting Policies and Estimates

The accompanying discussion and analysis of our financial condition and results of operations are based upon our consolidated financial statements, which have been prepared in accordance with U.S. generally accepted accounting principles (GAAP). The preparation of financial statements in conformity with GAAP requires management to make estimates and assumptions that affect the reported amounts of assets, liabilities and contingencies as of the date of the financial statements and reported amounts of revenues and expenses during the reporting periods. We evaluate our estimates on an on-going basis. We base our estimates on historical experience and on other assumptions that are believed to be reasonable under the circumstances, the results of which form the basis for making judgments about the carrying values of assets and liabilities that are not readily apparent from other sources. However, future events may cause us to change our assumptions and estimates, which may require adjustment. Actual results could differ from these estimates. We have determined that for the periods reported in this Annual Report on Form 10-K the following accounting policies and estimates are critical in understanding our financial condition and results of operations.

Accounting for Income Taxes. Management is required to make estimates related to our income tax provision in each of the jurisdictions in which we operate. This process involves estimating our current tax exposures, as well as making judgments regarding the recoverability of deferred tax assets in each jurisdiction. Deferred tax assets and liabilities reflect the tax effects of losses, credits, and temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and the amounts used for income tax purposes. Management assesses the likelihood that the deferred tax assets will be recovered from future taxable income and to the extent management believes that recovery is not likely, a valuation allowance must be established. To the extent management establishes a valuation allowance or increases this allowance in a period, an increase to expense within the Provision for income taxes in the Consolidated Statements of Income may result.

We have recorded a valuation allowance of $66.4 million and $58.3 million as of December 31, 2016 and 2015, respectively, due to uncertainties related to our ability to utilize some of the deferred tax assets, primarily consisting of certain foreign net operating losses carried forward. The valuation allowance is based on management's current estimates of taxable income for the jurisdictions in which we operate and the period over which the deferred tax assets will be recoverable. In the event that actual results differ from these estimates, or these estimates are adjusted in future periods, an additional valuation allowance may need to be established, which would increase the tax provision, lowering income and impacting our financial position. Should realization of these deferred tax assets for which a valuation allowance has been provided occur, the provision for income taxes may decrease, raising income and positively impacting Bio-Rad's financial position.

We recognize the tax benefit from an uncertain tax position only if it is more likely than not that the tax position will be sustained on examination by the taxing authorities based on the technical merits of the position. The tax benefits recognized in the financial statements on a particular tax position are measured based on the largest benefit that has a greater than 50% likelihood of being realized upon settlement. The amount of unrecognized tax benefits is adjusted as appropriate for changes in facts and circumstances, such as significant amendments to existing tax

law, new regulations or interpretations by the taxing authorities, new information obtained during a tax examination, or resolution of an examination. We recognize both accrued interest and penalties, where appropriate, related to unrecognized tax benefits in income tax expense. Our overall effective tax rate is subject to fluctuations because of changes in the geographic mix of earnings, changes to statutory tax rates and tax laws, and because of the impact of various tax audits and assessments, as well as generation of tax credits.

Valuation of Goodwill and Long-lived Assets. Goodwill represents the excess of the cost over the fair value of net tangible and identifiable intangible assets of acquired businesses. Goodwill amounts are assigned to reporting units at the time of acquisition and are adjusted for any subsequent significant transfers of business between reporting units. We assess the impairment of goodwill annually in the fourth quarter or whenever events or changes in circumstances indicate that the carrying value may not be recoverable. We perform the impairment tests of goodwill at our reporting unit level, which is one level below our operating segments. The goodwill impairment test consists of a two-step process. The first step of the goodwill impairment test, used to identify potential impairment, compares the fair value of a reporting unit to its carrying value, including goodwill. If the fair value of the reporting unit exceeds its carrying amount, goodwill of the reporting unit is considered not impaired, and the second step of the impairment test is not required. The second step, if required, compares the implied fair value of the reporting unit goodwill with the carrying amount of that goodwill. The fair value of a reporting unit is allocated to all of the assets and liabilities of that unit (including any unrecognized intangible assets) as if the reporting unit had been acquired in a business combination and the fair value of the reporting unit was the price paid to acquire the reporting unit. If the carrying amount of the reporting unit's goodwill exceeds its implied fair value, an impairment charge is recognized in an amount equal to that excess.

We use a projected discounted cash flow model to determine the fair value of a reporting unit. This discounted cash flow method for determining goodwill may be different from the fair value that would result from an actual transaction between a willing buyer and a willing seller. Projections such as discounted cash flow models are inherently uncertain and accordingly, actual future cash flows may differ materially from projected cash flows. Management judgment is required in developing the assumptions for the discounted cash flow model. These assumptions include revenue growth rates, profit margins, future capital expenditures, working capital needs, expected foreign currency rates, discount rates and terminal values. We estimate future cash flows using current and longer-term financial forecasts. These forecasts take into account the current economic environment. The discount rates used are compiled using independent sources, current trends in similar businesses and other observable market data. Changes to these rates might result in material changes in the valuation and determination of the recoverability of goodwill. For example, an increase in the discount rate used to discount cash flows will decrease the computed fair value.

Impairment tests are highly sensitive to changes in assumptions and minor changes to assumptions that could result in impairment losses. Our forecasts utilized in our 2016 impairment test assumed, among other things, sales growth from executing our sales and marketing programs, new product introductions, successful product development and timely registration of our products when required, while controlling costs. In addition, external factors, such as currency, inflation rates and cost of capital, could affect the determination of fair value of our reporting units. Aside from our GnuBIO, Inc. reporting unit, which reflected a carrying value that exceeded its fair value, our impairment tests resulted in excessive fair value over book value ranging from 22% to more than 400% for our various reporting units. If the initiatives mentioned above do not achieve the desired results, or external factors change detrimentally, future impairment losses may occur.

To validate the reasonableness of the reporting unit fair values, we reconcile the aggregate fair values of the reporting units to the enterprise market capitalization. In performing the reconciliation we may, depending on the volatility of the market value of our stock price, use either the stock price on the valuation date or the average stock price over a range of dates around the valuation date.

For purposes of recognition and measurement of an impairment loss, a long-lived asset or assets are grouped with other assets and liabilities at the lowest level for which identifiable cash flows are largely independent of the cash flows of other assets and liabilities. We assess the impairment of long-lived assets (including identifiable

intangibles) whenever events or changes in circumstances indicate that the carrying value may not be recoverable. Factors that we consider important that could trigger an impairment review include:

- significant reporting unit under-performance relative to expected, historical or projected future operating results;
- significant changes in the manner of use of the long-lived assets, intangible assets or the strategy for our overall business;
- a current expectation that, more likely than not, a long-lived asset will be sold or otherwise disposed of before the end of its previously estimated useful life; and
- significant negative industry, legal, regulatory or economic trends.

When management determines that the carrying value of long-lived assets may not be recoverable based upon the existence of one or more of the above indicators of impairment, we test for any impairment based on a projected undiscounted cash flow method. Projected future operating results and cash flows of the asset or asset group are used to establish the fair value used in evaluating the carrying value of long-lived and intangible assets. We estimate the future cash flows of the long-lived assets using current and long-term financial forecasts. The carrying amount of a long-lived asset is not recoverable if it exceeds the sum of the undiscounted cash flows expected to result from the use and eventual disposition of the asset. If this is the case, an impairment loss would be recognized. The impairment loss recognized is the amount by which the carrying amount exceeds the fair value. In 2016, we fully impaired goodwill and in-process research and development in the amounts of $13.5 million and $46.4 million, respectively, associated with our 2014 acquisition of GnuBIO, Inc. The impairments were based upon a revision of our Level 3 valuation inputs, i.e., expected future cash flows. Also in 2016, we impaired intellectual property in the amount of $2.4 million associated with the termination of a research and development project. There were no impairment losses recorded in 2015. In 2014, we impaired licenses of a discontinued product line in the amount of $6.4 million. This impairment charge included $5.8 million in Cost of goods sold and $0.6 million in Research and development expense in the accompanying Consolidated Statements of Income.

We early adopted ASU 2017-04, "Simplifying the Test for Goodwill Impairment," on January 1, 2017, which removes Step 2 of the goodwill impairment test for any impairments after January 1, 2017. See Note 1 to the consolidated financial statements.

Valuation of Inventories. We value inventory at the lower of the actual cost to purchase and/or manufacture the inventory, or the current estimated net realizable value of the inventory. We review inventory quantities on hand and reduce the cost basis of excess and obsolete inventory based primarily on an estimated forecast of product demand, production requirements and the quality, efficacy and potency of raw materials. This review is done on a quarterly basis or, if warranted by the circumstances, more frequently. In addition, our industry is characterized by technological change, frequent new product development and product obsolescence that could result in an increase in the amount of obsolete inventory quantities on hand. Our estimates of future product demand may prove to be inaccurate, and if too high, we may have overstated the carrying value of our inventory. In the future, if inventory is determined to be overvalued, we would be required to write down the value of inventory to market and recognize such costs in our cost of goods sold at the time of such determination. Therefore, although we make efforts to ensure the accuracy of our forecasts of future product demand and perform procedures to safeguard overall inventory quality, any significant unanticipated changes in demand, technological developments, regulations, storage conditions, or other economic or environmental factors affecting biological materials, could have a significant impact on the value of our inventory and reported results of operations.

We adopted ASU 2015-11, "Simplifying the Measurement of Inventory," on January 1, 2017, which requires inventory measurement at the lower of cost and net realizable value. See Note 1 to the consolidated financial statements.

Valuation of Investments. We regularly review our investments for factors that may indicate that a decline in the fair value of an investment below its carrying value is other-than-temporary. Some factors considered in evaluating whether or not a decline in fair value is other-than-temporary include our ability and intent to retain the investment

for a period of time sufficient to allow for a recovery in value, the duration and extent to which the fair value has been less than cost and the financial condition and prospects of the issuer. Such reviews are inherently uncertain in that the value of the investment may not fully recover or may decline further in future periods resulting in realized losses.

Warranty Reserves. We warrant certain equipment against defects in design, materials and workmanship, generally for a period of one year. Upon delivery and on acceptance of that equipment, we establish, as part of cost of goods sold, a provision for the expected costs of such warranty repairs based on historical experience, specific warranty terms and customer feedback. A review is performed on a quarterly basis to assess the adequacy of our warranty reserve and it is adjusted if necessary. The warranty reserve is based on actual experience and expected future costs to be incurred. Should realized costs be higher than expected costs, cost of goods sold would be lower in the period of estimation and higher when realized.

Allowance for Doubtful Accounts. We maintain an allowance for doubtful accounts for estimated losses resulting from the collectability of our customer accounts. The amount of the allowance is determined by analyzing known uncollectible accounts, the age of our receivables, economic conditions in the customers' country or industry, historical losses and our customers' general credit-worthiness. Amounts later determined and specifically identified to be uncollectible are charged or written off against this allowance. Uncertainty in the current economic environment, if prolonged, could result in greater amounts becoming uncollectible in the future. Should the estimates of losses be higher than the actual uncollectible accounts, we would report lower profitability when the estimates are made and higher profitability when the receivable is collected.

Litigation Accruals. We record as liabilities in our Consolidated Balance Sheets estimated amounts for claims that are probable and can be reasonably estimated. The likelihood of a material change in these estimated liabilities is dependent on the possible outcome of settlement negotiations, regulatory or judicial review and the development of facts and circumstances in extended litigation which could change claims or assessments when both the amount and range of loss on some outstanding litigation is uncertain. We disclose in the footnotes of the financial statements when we are unable to make a reasonable estimate of a material liability that could result from unfavorable outcomes in litigation. As events occur, we will assess the potential liability related to our pending litigation and revise our estimates. Such revisions could materially impact our results of operations.

Results of Operations - Sales, Gross Margins and Expenses

The following shows cost of goods sold, gross profit, expense items and net income as a percentage of net sales:

	Year Ended December 31,		
	2016	2015	2014
Net sales	100.0%	100.0%	100.0%
Cost of goods sold	45.0	44.5	45.8
Gross profit	55.0	55.5	54.2
Selling, general and administrative expense	39.5	37.7	37.2
Research and development expense	10.0	9.6	10.1
Net income attributable to Bio-Rad	1.4	5.6	4.1

Net sales

Net sales (sales) in 2016 were $2.07 billion, an increase of 2.4% compared to $2.02 billion in 2015. Excluding the impact of foreign currency, 2016 sales increased by approximately 4.0% compared to 2015. Currency neutral sales growth was primarily reflected in all regions except Europe.

The Life Science segment sales in 2016 were $730.7 million, an increase of 5.1% compared to 2015. On a currency neutral basis, sales increased 6.5% compared to 2015. The currency neutral sales increase was primarily in our Droplet Digital™ PCR and process media products. The currency neutral sales increase was in all regions.

The Clinical Diagnostics segment sales in 2016 were $1.32 billion, an increase of 1.0% compared to 2015. On a currency neutral basis, sales increased 2.6% compared to 2015. The currency neutral sales increase was primarily attributable to growth in quality control, immunology, blood typing and diabetes product lines. On a geographic view, currency neutral sales in 2016 increased most notably in the Americas and Asia, while sales declined in Europe.

Sales in 2015 were $2.02 billion, a decrease of 7.2% compared to $2.18 billion in 2014. Excluding the impact of foreign currency, 2015 sales increased by approximately 1.6% compared to 2014. Currency neutral sales growth was primarily reflected in the United States and China.

The Life Science segment sales in 2015 were $695.0 million, a decrease of 4.6% compared to 2014. On a currency neutral basis, sales increased 2.5% compared to 2014. The currency neutral sales increase was primarily in our Droplet Digital™ PCR, western blotting, process chromatography media and cell biology products. The currency neutral sales increase was primarily in the United States and Europe, partially offset by lower sales in Asia, excluding China.

The Clinical Diagnostics segment sales in 2015 were $1.31 billion, a decrease of 8.5% compared to 2014. On a currency neutral basis, sales increased 1.1% compared to 2014. The Clinical Diagnostics segment had currency neutral sales growth from quality controls and immunology products, partially offset by declines in blood typing and infectious disease products. Currency neutral sales growth was primarily in North America, China and Latin America, while European markets were still experiencing consolidation and pricing pressures.

Gross margin

Consolidated gross margins were 55.0% in 2016 compared to 55.5% in 2015. Life Science segment gross margins in 2016 decreased from 2015 by approximately 0.7 percentage points, primarily due to lower margins in protein quantification and cell biology, higher service costs, higher acquisition intangible amortization, and $0.7 million of restructuring costs, partially offset by higher margins in Droplet Digital™ PCR, process media products and antibody products. Clinical Diagnostics segment gross margins in 2016 decreased from 2015 by approximately 0.5 percentage points. The decrease compared to 2015 was primarily driven by sales mix and pricing pressures, along with higher period expenses, and $1.4 million of restructuring costs, partially offset by the suspension of the medical device tax.

Beginning in 2013, the Patient Protection and Affordable Care Act, as amended by the Health Care and Education Reconciliation Act (PPACA), among other initiatives, provided for a 2.3% annual excise tax on the sales of certain medical devices in the U.S. Bio-Rad has been paying this excise tax on most of our U.S. Clinical Diagnostic sales, which we accounted for as a period cost in Cost of goods sold. However, the Consolidated Appropriations Act, 2016 (Pub. L. 114-113), signed into law on December 18, 2015, includes a two year moratorium on the medical device excise tax during the period beginning on January 1, 2016, and ending on December 31, 2017.

Consolidated gross margins were 55.5% in 2015 compared to 54.2% in 2014. Life Science segment gross margins in 2015 increased from 2014 by approximately 0.9 percentage points, primarily due to sales of higher gross margin products including Droplet Digital™ PCR, gene expression and cell biology products. In addition, lower service costs in Europe and costs associated with the closing of a manufacturing plant in 2014 contributed to higher margins. Clinical Diagnostics segment gross margins in 2015 increased from 2014 by approximately 1.8 percentage points. The increase compared to 2014 was primarily due to the 2014 consolidation and closure of certain facilities and the discontinuation of an underperforming product line. Sales mix also contributed to the higher gross margins in 2015.

Selling, general and administrative expense

Consolidated selling, general and administrative expenses (SG&A) increased to $816.7 million or 39.5% of sales in 2016 compared to $762.0 million or 37.7% of sales in 2015. Increases to SG&A primarily included employee-related expenses, our largest cost, which also included $10.4 million of restructuring costs, $21.0 million for various legal matters, including the Wadler judgment as discussed further in Note 13 to the consolidated financial statements, professional fees, software, the revaluation of contingent consideration primarily associated with the cell sorting system and to a lesser extent the analytical flow cytometer platform, travel, facilities and recruitment/ relocation. Decreases to SG&A primarily included bad debt expense and a one-time distributor cost in 2015.

Consolidated SG&A decreased to $762.0 million or 37.7% of sales in 2015 compared to $808.2 million or 37.2% of sales in 2014. Underlying the overall decrease in SG&A was the impact of foreign currency, an accrual of $19.5 million in 2014 associated with the SEC and DOJ investigations relating to the FCPA investigation for which a final settlement was reached in the fourth quarter of 2014, and a reduction of $4.2 million from the revaluations of contingent consideration. Currency neutral increases in SG&A were primarily employee-related expenses, our largest cost, facilities and professional fees, partially offset by travel. Other increases in SG&A included $2.3 million of bad debt expense and a one-time distributor termination cost of $1.9 million.

Research and development expense

Research and development expense increased to $205.9 million or 10.0% of sales in 2016 compared to $193.0 million or 9.6% of sales in 2015. Life Science segment research and development expense increased in 2016 from 2015 primarily due to increased project activities in Droplet Digital™ PCR, protein quantification and cell biology. Clinical Diagnostics segment research and development expense increased in 2016 from 2015 primarily from increased spending associated with the GnuBIO business.

Research and development expense decreased to $193.0 million or 9.6% of sales in 2015 compared to $220.3 million or 10.1% of sales in 2014. Life Science segment research and development expense decreased in 2015 from 2014 primarily due to headcount reductions, lower supplies and lower external product development spend. Clinical Diagnostics segment research and development expense decreased in 2015 from 2014 primarily due to the wind down of spending on projects as they approach launch and the discontinuation of an underperforming product line in 2014.

Results of Operations – Non-operating

Interest expense

Interest expense in 2016 increased 1.2% to $21.9 million, relatively flat compared to $21.7 million in 2015.

Interest expense in 2015 decreased 2.0% to $21.7 million compared to 2014 primarily due to $0.6 million in 2014 associated with our offer to settle the SEC and DOJ investigations relating to the FCPA investigation for which a final settlement was reached in the fourth quarter of 2014.

Foreign currency exchange gains and losses

Foreign currency exchange gains and losses consist of foreign currency transaction gains and losses on intercompany net receivables and payables and the change in fair value of our forward foreign exchange contracts used to manage our foreign currency exchange risk. Net foreign currency exchange losses for 2016, 2015 and 2014 were $4.5 million, $10.2 million and $9.3 million, respectively. The 2016, 2015 and 2014 net foreign currency exchange losses were attributable to market volatility, increasing costs to hedge and the result of the estimating process inherent in the timing of shipments and payments of intercompany debt, and our decision to reclassify a large percentage of our intercompany receivable from Brazil to long-term towards the end of 2015. All years are affected by the economic hedging program we employ to hedge our intercompany receivables and payables.

Other income and expense, net

Other income and expense, net includes investment and dividend income, generally interest income on our cash and cash equivalents, short-term investments and long term marketable securities. Other (income) expense, net in 2016 increased to $14.9 million income compared to $11.1 million income in 2015. The increase was primarily due to higher dividend income in 2016 on the ordinary and preferred shares of our investment in Sartorius AG, and higher investment income.

Other (income) expense, net in 2015 decreased to $11.1 million income compared to $13.0 million income in 2014. The decrease was primarily due to lower interest and investment income primarily related to a weaker 2015 foreign currency exchange rate for ordinary and preferred dividends from our investment in Sartorius AG, and realized losses in 2015 compared to no realized losses in 2014.

Effective tax rate

Our effective tax rate was 32%, 22% and 32% in 2016, 2015 and 2014, respectively. The effective tax rates for 2016 and 2015 included tax benefits from the repatriation of foreign earnings. The effective tax rate for 2016 included additional tax liabilities for unrecognized tax benefits related to the non-deductibility of interest expense in our foreign jurisdictions. The effective tax rate for 2014 included nondeductible penalties and losses that were nonrecurring. Our foreign taxes result primarily from income earned in France and Switzerland. Many jurisdictions in which we operate, including Switzerland, Russia, the U.K. and Singapore, have statutory tax rates that are significantly lower than the U.S. statutory tax rate of 35%. Our effective tax rate may be impacted in the future, either favorably or unfavorably, by many factors including, but not limited to, changes to statutory tax rates, changes in tax laws or regulations, tax audits and settlements, and generation of tax credits.

Our income tax returns are audited by U.S. federal, state and foreign tax authorities. We are currently under examination by many of these tax authorities. The tax years open to examination include the years 2013 and forward for the U.S., and the years 2010 and forward for certain foreign jurisdictions, including France, Switzerland and Germany. There are differing interpretations of tax laws and regulations, and as a result, significant disputes may arise with these tax authorities involving issues of the timing and amount of deductions and allocations of income among various tax jurisdictions. We evaluate our exposures associated with our tax filing positions on a quarterly basis.

We record liabilities for unrecognized tax benefits related to uncertain tax positions. We do not believe any currently pending uncertain tax positions will have a material adverse effect on our consolidated financial statements, although an adverse resolution of one or more of these uncertain tax positions in any period may have a material impact on the results of operations for that period.

As of December 31, 2016, based on the expected outcome of certain examinations or as a result of the expiration of statutes of limitation for certain jurisdictions, we believe that within the next twelve months it is reasonably possible that our previously unrecognized tax benefits could decrease by approximately $3.5 million. Substantially all such amounts will impact our effective income tax rate.

During 2017 we expect to proceed with the implementation of our European Headquarters and related restructuring plans that could have a significant effect on our effective tax rate. Many of these plans are operational changes that may impact our jurisdictional mix of earnings in the future.

Liquidity and Capital Resources

Bio-Rad operates and conducts business globally, primarily through subsidiary companies established in the markets in which we trade. Goods are manufactured in a small number of locations, and are then shipped to local distribution facilities around the world. Our product mix is diversified, and certain products compete largely on product efficacy, while others compete on price. Gross margins are generally sufficient to exceed normal operating costs, and funding for research and development of new products, as well as routine outflows of capital expenditures, interest and taxes. In addition to the annual positive cash flow from operating activities, additional liquidity is readily available via the sale of short-term investments and access to our $200.0 million unsecured Credit Agreement that we entered into in June 2014. Borrowings under the Credit Agreement are on a revolving basis and can be used to make permitted acquisitions, for working capital and for other general corporate purposes. We had no outstanding borrowings under the Credit Agreement as of December 31, 2016, however, $0.8 million was utilized for domestic standby letters of credit that reduced our borrowing availability. The Credit Agreement matures in June 2019.

At December 31, 2016, we had available $839.4 million in cash, cash equivalents and short-term investments, of which approximately 28% was held in our foreign subsidiaries. We believe that our holdings of cash, cash equivalents and short-term investments in the U.S. and in our foreign subsidiaries are sufficient to meet both the current and long-term needs of our global operations. The amount of funds held in the United States can fluctuate due to the timing of receipts and payments in the ordinary course of business and due to other reasons, such as business-development activities. As part of our ongoing liquidity assessments, we regularly monitor the mix of domestic and foreign cash flows (both inflows and outflows). Repatriation of overseas funds will result in additional U.S. federal and state income tax payments. In general, it is our practice and intention to indefinitely reinvest the cash generated by our foreign subsidiaries in our foreign subsidiaries' operations.

Under domestic and international lines of credit, standby letters of credit and guarantee arrangements, we had $205.7 million available for borrowing and usage as of December 31, 2016, which was reduced by $5.4 million that was utilized for standby letters of credit and guarantee arrangements issued by our banks to support our obligations. Management believes that this availability, together with cash flow from operations, will be adequate to meet our current objectives for operations, research and development, capital additions for manufacturing and distribution, plant and equipment, information technology systems and an acquisition of reasonable proportion to our existing total available capital.

While economic growth is somewhat improving, instability still exists in developed nations and in the U.S., such as the slowing rate of growth in the Chinese economy and in emerging markets, especially those oil-producing countries that have been affected by a decline in oil prices, which may adversely affect our future results of cash flows. Demand for our products and services could change more dramatically than in previous years based on activity, funding, reimbursement constraints and support levels from government, universities, hospitals and private industry, including diagnostic laboratories. The need for certain sovereign nations with large annual deficits to curtail spending could lead to slower growth of, or even a decline in, our business. Sovereign nations either delaying payment for goods and services or renegotiating their debts could impact our liquidity. The situation in these sovereign nations is continuously evolving and we have no greater knowledge of the situation other than what is publicly reported. As of December 31, 2016 and December 31, 2015, we had accounts receivable, net of an allowance for doubtful accounts, in Spain, Italy, Greece and Portugal of $32.7 million and $40.7 million, respectively.

Cash Flows from Operations

Net cash provided by operations was $216.4 million, $186.2 million and $273.3 million in 2016, 2015, and 2014, respectively. The net increase between 2016 and 2015 of $30.2 million primarily resulted from:

- higher cash received from customers in 2016 primarily due to lower U.S. collections in the second half of 2015 from delays associated with the second phase of an ERP implementation, and
- higher investment income received, partially offset by
- more cash paid to suppliers and employees primarily related to higher payments to inventory suppliers as payments were delayed in the latter part of 2015 mostly associated with the second deployment of the ERP system, higher annual performance-based compensation payments in 2016, and higher legal and other professional fees,
- higher net income tax payments than in 2015, and
- net payments in 2016 compared to net cash received in 2015 for forward foreign exchange contracts.

The net decrease between 2015 and 2014 of $87.1 million primarily resulted from:

- lower cash received from customers primarily due to the value of foreign currency denominated sales and subsequent collections that were affected by a strengthening in the U.S. dollar, disproportionately larger collections in 2014 from the Spanish government, lower U.S. collections in the second half of 2015 from delays associated with the second phase of an ERP implementation, and higher U.S. collections in 2014 resulting from delays caused by the first deployment of a new ERP system, partially offset by
- less cash paid to suppliers and employees primarily related to a decrease in foreign exchange rates, and reductions in force, partially offset by higher performance-based compensation payments, and
- a payment of $55.1 million for the settlement with the SEC and DOJ associated with the FCPA in the fourth quarter of 2014.

We regularly review past due receivables to assess the allowance for doubtful accounts and believe net accounts receivable are fully realizable. We also routinely review inventory for the impact of obsolescence and changes in market prices caused by the introduction of new products, technologies and in government reimbursement policies. Cash flows from operations during the first quarter have historically had larger payments for royalties, fourth quarter sales commissions to third parties and annual employee bonuses, and we expect this pattern to recur in the first quarter of 2017.

Cash Flows from Investing Activities

Net cash used in investing activities was $213.9 million, $166.9 million and $190.5 million for 2016, 2015 and 2014, respectively. Purchases, net of sales and maturities of marketable securities and investments had an overall decrease of $13.2 million in 2016 compared to 2015 primarily due to a decrease in maturities and securities sales, partially offset by a decrease in purchases. Purchases, net of sales and maturities of marketable securities and investments had an overall decrease of $35.4 million in 2015 compared to 2014 primarily due to an increase in purchases, partially offset by an increase in maturities and securities sales.

Short-term restricted investments of $4.56 million and $4.21 million in 2016 and 2015, respectively, represent a money market fund for collateral that secures worker's compensation and general liability insurance. Investment income accrues to us and is recorded in Investment proceeds and miscellaneous receipts, net in the Consolidated Statements of Cash Flows.

Our investment objective is to maintain liquidity to meet anticipated operational and other corporate requirements in which capital is preserved and increased through investing in low risk, high quality securities with commensurate returns, consistent with our risk tolerance level.

Purchases of intangible assets were higher in 2014 than in 2016 and 2015 primarily due to higher purchases of licenses. Payments for acquisitions, net of cash received, and long-term investments in 2016 and 2014 were primarily due to the following:

- in January 2016, we acquired a high performance analytical flow cytometer platform from Propel for total consideration of $32.8 million, which included $9.5 million paid in cash at the closing date and $23.3 million in contingent consideration potentially payable to Propel, after the effects of a calculation revision that were reflected in the fourth quarter of 2016 , and
- in April 2014, we acquired 100% of the issued and outstanding stock of GnuBIO for a total consideration of $50.4 million, which included $39.7 million paid in cash at the closing date and $10.7 million in contingent consideration potentially payable to GnuBIO's shareholders. The Level 3 contingent consideration was revalued to a fair value of $10.0 million as of December 31, 2016 and 2015.

We continue to review possible acquisitions to expand both our Life Science and Clinical Diagnostics segments, such as our acquisition of RainDance in February 2017. We routinely meet with the principals or brokers of the subject companies. We are currently in discussion and assessing a few possible acquisitions in which we expect our current reported cash and cash equivalents to be sufficient for any cash consideration for these possible acquisitions. However, it is not certain at this time that any of these discussions involving material or significant acquisitions will advance to completion.

Capital expenditures in 2016 totaled $141.4 million, compared to $112.0 million and $121.0 million in 2015 and 2014, respectively. Capital expenditures represent the addition and replacement of production machinery and research equipment, ongoing manufacturing and facility additions for expansion, regulatory, environmental and compliance. Also included in capital expenditures are investments in business systems and data communication upgrades and enhancements. All periods include equipment placed with Clinical Diagnostics segment customers who then contract to purchase our reagents for use. As we continue to implement the remaining phases of the ERP platform, we expect capital expenditures to moderate in 2017 and then decline over the next couple of years. Capital expenditures were lower in 2015 compared to 2016 as the second phase was implemented in July 2015 and the third phase of the ERP system ramped up in 2016. Capital expenditures were higher in 2014 than in 2015 as we were in the development stages (in which appropriate costs are capitalized) of implementing the second phase of a global single instance ERP platform. The current estimated future project cost for global implementation for the single instance ERP platform is projected to be $90 million to $130 million, and is estimated to take approximately the next two to three years to fully implement.

Cash Flows from Financing Activities

Net cash provided by financing activities was $9.0 million, $8.6 million and $11.7 million in 2016, 2015 and 2014, respectively. Net cash provided by financing activities in 2016, 2015 and 2014 was primarily from proceeds from issuance of our common stock. Additionally in 2016, 2015 and 2014, there were payments of $3.5 million, $3.0 million and $2.4 million, respectively, to Propel Labs' shareholders in contingent consideration for sales milestones that were associated with the valuation as of the 2012 acquisition date. In 2014, there was also the payment of a short-term borrowing.

We have outstanding Senior Notes of $425.0 million, which are not due until 2020. We believe the current cash is sufficient to meet normal operating costs, and funding for research and development of new products, as well as routine outflows of capital expenditures, interest and taxes.

The Board of Directors has authorized the repurchase of up to $18.0 million of Bio-Rad's common stock, of which $3.3 million has yet to be repurchased as of December 31, 2016. The Credit Agreement may limit our ability to repurchase our stock. In accordance with the terms of awards under the 2007 Incentive Award Plan, in June 2012, we withheld 122 shares of our Class A common stock and 917 shares of our Class B common stock to satisfy tax obligations due upon the vesting of restricted stock of certain of our employees, which is considered a repurchase of

our stock. All of the restricted stock vested as of December 31, 2013 and therefore we do not anticipate any repurchasing of shares for this purpose. We had no other repurchases of our stock during 2016, 2015 or 2014.

Off-Balance Sheet Arrangements

We do not have any off-balance sheet arrangements that have had or are reasonably likely to have a current or future material effect on our financial condition, results of operations or liquidity.

Contractual Obligations

The following summarizes certain of our contractual obligations as of December 31, 2016 and the effect such obligations are expected to have on our cash flows in future periods (in millions):

	Payments Due by Period				
Contractual Obligations	Total	Less Than One Year	1-3 Years	3-5 Years	More than 5 Years
Long-term debt, including current portion (1)	$ 437.0	$ 0.3	$ 0.5	$ 425.6	$ 10.6
Interest payments (1)	81.6	20.7	41.4	19.5	—
Operating lease obligations (2)	158.0	42.1	56.7	33.5	25.7
Purchase obligations (3)	35.0	17.5	8.5	9.0	—
Long-term liabilities (4)	142.9	34.3	10.5	4.0	94.1

(1) These amounts represent expected cash payments, including capital lease obligations, which are included in our December 31, 2016 Consolidated Balance Sheet. Our debt is fixed and primarily consists of the 4.875% Notes. See Note 5 of the Consolidated Financial Statements for additional information about our debt.

(2) Operating lease obligations are described in Note 12 of the Consolidated Financial Statements.

(3) Purchase obligations include agreements to purchase goods or services that are enforceable and legally binding to Bio-Rad and that specify all significant terms. Purchase obligations exclude agreements that are cancelable without penalty.

(4) Excluded from this table are tax liabilities for uncertain tax positions and contingencies in the amount of $16.4 million. We are not able to reasonably estimate the timing of future cash flows of these tax liabilities, therefore, our income tax obligations are excluded from the table above. See Note 6 of the Consolidated Financial Statements for additional information about our income taxes.

Recent Accounting Standards Updates

In January 2017, the Financial Accounting Standards Board (“FASB”) issued Accounting Standards Update No. (“ASU”) 2017-04, "Simplifying the Test for Goodwill Impairment." ASU 2017-04 removes Step 2 of the goodwill impairment test, which requires a hypothetical purchase price allocation. A goodwill impairment will be the amount by which a reporting unit’s carrying value exceeds its fair value, not to exceed the carrying amount of goodwill. ASU 2017-04 is effective prospectively for annual and interim periods beginning after December 15, 2019. Early adoption is permitted for any impairment tests performed after January 1, 2017. ASU 2017-04 will provide a more streamlined approach to evaluating future goodwill impairment and we early adopted on January 1, 2017. We have not assessed the impact that ASU 2017-04 will have on our consolidated financial statements because a goodwill impairment has not occurred after January 1, 2017.

In January 2017, the FASB issued ASU 2017-01, "Clarifying the Definition of a Business." ASU 2017-01 changes the definition of a business to assist entities with evaluating when a set of transferred assets and activities is a business. If substantially all of the fair value is concentrated in a single asset or a group of similar assets, the acquired

set is not a business. If this is not met, the entity then evaluates whether the set meets the requirement that a business include, at a minimum, an input and a substantive process that together significantly contribute to the ability to create outputs. Determining whether a set constitutes a business is critical because the accounting for a business combination differs significantly from that of an asset acquisition. ASU 2017-01 is effective for fiscal years beginning after December 15, 2017, and interim periods within those years. ASU 2017-01 will be applied prospectively to any transactions occurring within the period of adoption. Early adoption is permitted, including for interim or annual periods in which the financial statements have not been issued or made available for issuance. We early adopted ASU 2017-01 on January 1, 2017. For our acquisition of RainDance Technologies, Inc., ASU 2017-01 did not affect the conclusion of it being a business combination (see Note 17 to the consolidated financial statements).

In November 2016, the FASB issued ASU 2016-18, "Restricted Cash." ASU 2016-18 requires entities to show the changes in the total of cash, cash equivalents, restricted cash and restricted cash equivalents in the statement of cash flows. As a result, entities will no longer present transfers between cash and cash equivalents and restricted cash and restricted cash equivalents in the statement of cash flows. ASU 2016-18 will be applied retrospectively and is effective for fiscal years beginning after December 15, 2017, and interim periods within those years. Early adoption is permitted. We have had a limited amount of restricted cash of $2.0 million and $1.4 million as of December 31, 2016 and 2015, respectively, which was reclassified from cash to either Prepaid expenses, Other current assets or Other assets in the Consolidated Balance Sheets. At the time of adoption, we cannot assure whether these same restricted cash amounts will be held or what other restricted cash we may have, or that historically reported amounts will be similar.

In October 2016, the FASB issued ASU 2016-16, "Intra-Entity Transfers of Assets Other Than Inventory." ASU 2016-16 requires immediate recognition of income tax consequences of intercompany asset transfers, other than inventory transfers. Existing GAAP prohibits recognition of income tax consequences of intercompany asset transfers whereby the seller defers any net tax effect and the buyer is prohibited from recognizing a deferred tax asset on the difference between the newly created tax basis of the asset in its tax jurisdiction and its financial statement carrying amount as reported in the consolidated financial statements. ASU 2016-16 specifically excludes from its scope intercompany inventory transfers whereby the recognition of tax consequences will take place when the inventory is sold to third parties. ASU 2016-16 is effective for fiscal years beginning after December 15, 2017, and interim periods within those fiscal years. Early adoption is permitted as of the beginning of an annual reporting period for which financial statements have not been issued or made available for issuance. We do not plan to early adopt ASU 2016-16. We are currently evaluating the effect ASU 2016-16 will have on our consolidated financial statements.

In August 2016, the FASB issued ASU 2016-15, "Classification of Certain Cash Receipts and Cash Payments." ASU 2016-15 is intended to reduce diversity in practice in how certain transactions are classified in the statement of cash flows. ASU 2016-15 is effective for fiscal years beginning after December 15, 2017, and interim periods within those fiscal years, with early adoption permitted. We are currently evaluating the effect ASU 2016-15 will have on our consolidated statements of cash flows, if any.

In June 2016, the FASB issued ASU 2016-13, "Measurement of Credit Losses on Financial Instruments." ASU 2016-13 will replace the current incurred loss approach with an expected loss model for trade and other receivables, and instruments measured at amortized cost and require entities to record allowances for available-for-sale debt securities rather than reduce the carrying amount under the current other-than-temporary impairment model. ASU 2016-13 is effective for fiscal years beginning after December 15, 2019, and interim periods within those fiscal years. Early adoption is permitted for all entities for annual periods beginning after December 15, 2018, and interim periods therein. We are currently evaluating the effect ASU 2016-13 will have on our consolidated financial statements.

In March 2016, the FASB issued ASU 2016-09, "Improvements to Employee Share-Based Payment Accounting." ASU 2016-09 will require all income tax effects of awards to be recognized in the income statement when the awards vest or are settled. It also will allow an employer to repurchase more of an employee’s shares than it can today for tax withholding purposes without triggering liability accounting and to make a policy election to account for forfeitures as they occur. ASU 2016-09 is effective for fiscal years beginning after December 15, 2016, and interim periods

within those fiscal years. We adopted ASU 2016-09 on January 1, 2017 and made a policy election to account for forfeitures as they occur. We do not expect ASU 2016-09 to have a material impact on our consolidated financial statements.

In March 2016, the FASB issued ASU 2016-07, "Simplifying the Transition to the Equity Method of Accounting," which eliminates the requirement to retrospectively apply the equity method in previous periods when an investor initially obtains significant influence over an investee. Under current guidance, an investor that does not consolidate an investment and initially accounts for it under a method other than the equity method is required to retrospectively apply the equity method in prior periods in which it held the investment when it subsequently obtained significant influence. ASU 2016-07 will be applied on a prospective basis and is effective for all entities for fiscal years beginning after December 15, 2016, and interim periods within those years. We adopted ASU 2016-07 on January 1, 2017 and do not expect it to materially affect our consolidated financial statements, unless our situation changes regarding our ability to influence the investee in the future as a result of our cost method investment in Sartorius AG (see Note 3 to the consolidated financial statements).

In February 2016, the FASB issued ASU 2016-02, "Leases," which will require, among other items, lease accounting to recognize most leases as assets and liabilities on the balance sheet. Qualitative and quantitative disclosures will be enhanced to better understand the amount, timing and uncertainty of cash flows arising from leases. ASU 2016-02 is effective for fiscal years beginning after December 15, 2018, and interim periods within those fiscal years, with early adoption permitted. We do not plan to early adopt. ASU 2016-02 will be adopted on a modified retrospective basis, with elective reliefs, which requires application of ASU 2016-02 for all periods presented. We are currently gathering, documenting and analyzing lease agreements related to this ASU and anticipate material additions to the balance sheet for right-of-use assets, offset by the associated liabilities.

In January 2016, the FASB issued ASU 2016-01, "Recognition and Measurement of Financial Assets and Financial Liabilities." Amendments under ASU 2016-01, among other items, require that all equity investments in unconsolidated entities (other than those accounted for using the equity method of accounting) will generally be measured at fair value through earnings. There will no longer be an available-for-sale classification, for which changes in fair value are reported in other comprehensive income, for equity securities with readily determinable fair values. For equity investments without readily determinable fair values, the cost method is also eliminated. However, entities will be able to elect to record equity investments without readily determinable fair values at cost, less impairment, and plus or minus subsequent adjustments for observable price changes. Changes in the basis of these equity investments will be reported in current earnings. ASU 2016-01 is effective for fiscal years beginning after December 15, 2017, and interim periods within those fiscal years. For equity securities that would be affected by ASU 2016-01, see the available-for-sale investments table in Note 3 to the consolidated financial statements. At the time of adoption, we cannot assure whether these same equity securities will be held or what other equity securities we may have, or that historically reported changes will be similar.

In September 2015, the FASB issued ASU 2015-16, "Simplifying the Accounting for Measurement-Period Adjustments," which eliminates the requirement for an acquirer in a business combination to account for measurement-period adjustments retrospectively. Under ASU 2015-16, acquirers must recognize measurement-period adjustments during the period in which they determine the amounts, including the effect on earnings of any amounts they would have recorded in previous periods if the accounting had been completed at the acquisition date. The measurement period cannot exceed one year from the date of the acquisition. ASU 2015-16 was effective on January 1, 2016, and we adopted it at the same time as a change in accounting policy, which had no impact on our consolidated financial statements.

In July 2015, the FASB issued ASU 2015-11, “Simplifying the Measurement of Inventory.” Under current guidance, an entity subsequently measures inventory at the lower of cost or market, with market defined as replacement cost, net realizable value (NRV), or NRV less a normal profit margin. An entity uses current replacement cost provided that it is not above NRV (i.e., the ceiling) or below NRV less an “approximately normal profit margin” (i.e., the floor). ASU 2015-11 eliminates this analysis and requires entities to measure most inventory “at the lower of cost and NRV.” ASU 2015-11 is effective prospectively for annual periods beginning after December 15, 2016, and interim periods

therein. We adopted ASU 2015-11 on January 1, 2017 and do not expect it to have a material impact to our consolidated financial statements.

In April 2015, the FASB issued ASU 2015-03, "Simplifying the Presentation of Debt Issuance Costs." ASU 2015-03 was issued to simplify the presentation of debt issuance costs by requiring debt issuance costs to be presented as a deduction from the corresponding debt liability. This makes the presentation of debt issuance costs consistent with the presentation of debt discounts or premiums. Under prior U.S. GAAP, debt issuance costs were reported on the balance sheet as assets and amortized as interest expense. Under ASU 2015-03, debt issuance costs will continue to be amortized to interest expense using the effective interest method. In August 2015, the FASB issued ASU 2015-15, "Presentation and Subsequent Measurement of Debt Issuance Costs Associated with Line-of-Credit Arrangements" to clarify the SEC staff's position that it would not object to an entity deferring and presenting debt issuance costs as an asset and subsequently amortizing the deferred debt issuance costs ratably over the term of the line-of-credit arrangement, which is our current practice. We adopted ASU 2015-03 on January 1, 2016 on a retrospective basis as a change in accounting policy. The Condensed Consolidated Balance Sheet as of December 31, 2015 was retrospectively adjusted by decreasing Other assets and Long-term debt, net of current maturities, by $1.8 million, respectively.

In May 2014, the FASB issued ASU 2014-09, "Revenue from Contracts with Customers," which requires an entity to recognize the amount of revenue to which it expects to be entitled for the transfer of promised goods or services to customers. ASU 2014-09 will replace most existing revenue recognition guidance in GAAP when it becomes effective. In August 2015, the FASB issued ASU 2015-14 to defer the effective date for annual reporting periods beginning after December 15, 2017, including interim periods within that reporting period. Early adoption is permitted as of the original effective date in ASU 2014-09, which is annual reporting periods beginning after December 15, 2016, however, we will not early adopt. In December 2016, the FASB issued ASU 2016-20, "Technical Corrections and Improvements to Topic 606, Revenue from Contracts with Customers" which affect narrow aspects of the guidance issued in ASU 2014-09. In May 2016, the FASB issued ASU 2016-12, "Narrow-Scope Improvements and Practical Expedients," which amends and clarifies certain aspects in ASU 2014-09 that include collectiblity, presentation of sales and other taxes collected from customers, noncash consideration, contract modifications and completed contracts at transition. In April 2016, the FASB issued ASU 2016-10, "Identifying Performance Obligations and Licensing," which amends the guidance in ASU 2014-09 on accounting for licenses of intellectual property and identifying performance obligations. In March 2016, the FASB issued ASU 2016-08, "Principal versus Agent Considerations (Reporting Revenue Gross versus Net)," which amends the principal versus agent guidance in ASU 2014-09. The standards are to be applied retrospectively and permit the use of either the retrospective or cumulative effect transition method. We will use the cumulative effect transition method once we adopt ASUs 2014-09, 2016-20, 2016-12, 2016-10 and 2016-08 on January 1, 2018. We have completed revenue recognition diagnostic surveys across all regions in our decentralized sales contracting process, which is based on local country commercial regulations and practices. We have begun assessing individual contracts to identify performance obligations under these ASU's, as compared with the deliverables and separate units of accounting previously identified under current U.S. GAAP, to determine the effect that these ASU's will have on our consolidated financial statements and related disclosures.

ITEM 7A. QUANTITIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

Financial Risk Management

The main goal of Bio-Rad's financial risk management program is to reduce the variance in expected cash flows arising from unexpected foreign exchange rate and interest rate changes. Financial exposures are managed through operational means and by using various financial instruments, including cash and liquid resources, borrowings, and forward and spot foreign exchange contracts. No derivative financial instruments are entered into for the purpose of trading or speculation. Company policy requires that all derivative positions are undertaken to manage the risks arising from underlying business activities. These derivative transactions do not qualify for hedge accounting treatment. Derivative instruments used in these transactions are valued at fair value and changes in fair value are included in reported earnings.

Foreign Exchange Risk. We operate and conduct business in many countries and are exposed to movements in foreign currency exchange rates. We face transactional currency exposures that arise when we enter into transactions denominated in currencies other than U.S. dollars. Additionally, our consolidated net equity is impacted by the conversion of the net assets of our international subsidiaries for which the functional currency is not the U.S. dollar.

Foreign currency exposures are managed on a centralized basis. This allows for the netting of natural offsets and lowers transaction costs and net exposures. Where possible, we seek to manage our foreign exchange risk in part through operational means, including matching same-currency revenues to same-currency costs, and same-currency assets to same-currency liabilities. Moreover, weakening in one currency can often be offset by strengthening in another currency. Foreign exchange risk is also managed through the use of forward foreign exchange contracts. Positions are primarily in Euro, Swiss Franc, British Sterling, Singapore Dollar, Brazilian Real and Japanese Yen. The majority of forward contracts are for periods of 90 days or less. We record the change in value of our foreign currency receivables and payables as a Foreign exchange (gain) loss on our Consolidated Statements of Income along with the change in fair market value of the forward exchange contract used as an economic hedge of those assets or liabilities.

Our forward contract holdings at year-end were analyzed to determine their sensitivity to fluctuations in foreign currency exchange rates. All other variables were held constant. Market risk associated with derivative holdings is the potential change in fair value of derivative positions arising from an adverse movement in foreign exchange rates. A decline of 10% on quoted foreign exchange rates would result in an approximate net-present-value loss of $30 million on our derivative position as of December 31, 2016. This impact of a change in exchange rates excludes the offset derived from the change in value of the underlying assets and liabilities, which could reduce the adverse effect significantly.

Interest Rate Risk of Debt Instruments. Bio-Rad centrally manages the short-term cash surpluses and shortfalls of its subsidiaries. Our holdings of variable rate debt instruments at year-end were analyzed to determine their sensitivity to movements in interest rates. Due to the relatively small amount of short-term variable rate debt we have outstanding, there would not be a material impact to earnings or cash flows if interest rates moved adversely by 10%. Our long-term debt consists primarily of fixed-rate instruments, and is thus insulated from interest rate changes. As of December 31, 2016, the overall interest rate risk associated with our debt was not significant.

ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

Index to Consolidated Financial Statements

	Page
Reports of Independent Registered Public Accounting Firm	41-42
Consolidated Balance Sheets at December 31, 2016 and 2015	43-44
Consolidated Statements of Income for each of the three years in the period ended December 31, 2016	45
Consolidated Statements of Comprehensive Income for each of the three years in the period December 31, 2016	46
Consolidated Statements of Cash Flows for each of the three years in the period ended December 31, 2016	47
Consolidated Statements of Changes in Stockholders' Equity for each of the three years in the period ended December 31, 2016	48
Notes to Consolidated Financial Statements	49-85

Report of Independent Registered Public Accounting Firm

The Board of Directors and Stockholders
Bio-Rad Laboratories, Inc.:

We have audited the accompanying consolidated balance sheets of Bio-Rad Laboratories, Inc. and subsidiaries (the Company) as of December 31, 2016 and 2015, and the related consolidated statements of income, comprehensive income, stockholders' equity, and cash flows for each of the years in the three-year period ended December 31, 2016. In connection with our audits of the consolidated financial statements, we also have audited the financial statement schedule. These consolidated financial statements and financial statement schedule are the responsibility of the Company's management. Our responsibility is to express an opinion on these consolidated financial statements and financial statement schedule based on our audits.

We conducted our audits in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of Bio-Rad Laboratories, Inc. and subsidiaries as of December 31, 2016 and 2015, and the results of their operations and their cash flows for each of the years in the three-year period ended December 31, 2016, in conformity with U.S. generally accepted accounting principles. Also in our opinion, the related financial statement schedule, when considered in relation to the basic consolidated financial statements taken as a whole, present fairly, in all material respects, the information set forth therein.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), Bio-Rad Laboratories, Inc.'s internal control over financial reporting as of December 31, 2016, based on criteria established in *Internal Control - Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO), and our report dated February 28, 2017 expressed an unqualified opinion on the effectiveness of the Company's internal control over financial reporting.

/s/ KPMG LLP

San Francisco, California
February 28, 2017

Report of Independent Registered Public Accounting Firm

The Board of Directors and Stockholders
Bio-Rad Laboratories, Inc.:

We have audited Bio-Rad Laboratories, Inc.'s (the Company) internal control over financial reporting as of December 31, 2016, based on criteria established in *Internal Control - Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). Bio-Rad Laboratories Inc.'s management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying Management's Report on Internal Control Over Financial Reporting (Item 9A(b)). Our responsibility is to express an opinion on the Company's internal control over financial reporting based on our audit.

We conducted our audit in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects. Our audit included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audit also included performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

A company's internal control over financial reporting is a process designed 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. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

In our opinion, Bio-Rad Laboratories, Inc. maintained, in all material respects, effective internal control over financial reporting as of December 31, 2016, based on criteria established in *Internal Control - Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO).

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), the consolidated balance sheets of Bio-Rad Laboratories, Inc. and subsidiaries as of December 31, 2016 and 2015, and the related consolidated statements of operations, comprehensive income, stockholders' equity, and cash flows for each of the years in the three-year period ended December 31, 2016, and our report dated February 28, 2017 expressed an unqualified opinion on those consolidated financial statements and financial statement schedule.

/s/ KPMG LLP

San Francisco, California
February 28, 2017

BIO-RAD LABORATORIES, INC.
Consolidated Balance Sheets
(In thousands, except share data)

	December 31,	
	2016	2015
ASSETS		
Current assets:		
Cash and cash equivalents	$ 456,264	$ 457,549
Short-term investments	383,176	328,718
Restricted investments	4,560	4,210
Accounts receivable, less allowance for doubtful accounts of $23,367 at 2016 and $24,418 at 2015	372,348	391,485
Inventories:		
Raw materials	116,540	109,928
Work in process	125,982	114,438
Finished goods	282,439	265,858
Total inventories	524,961	490,224
Prepaid expenses	91,014	94,369
Other current assets	12,201	11,041
Total current assets	1,844,524	1,777,596
Property, plant and equipment:		
Land and improvements	17,895	17,823
Buildings and leasehold improvements	290,367	276,070
Equipment	919,126	823,193
Total property, plant and equipment	1,227,388	1,117,086
Less: accumulated depreciation and amortization	(738,774)	(679,396)
Property, plant and equipment, net	488,614	437,690
Goodwill, net	477,115	495,948
Purchased intangibles, net	161,609	214,026
Other investments	830,790	719,840
Other assets	47,852	64,618
Total assets	$ 3,850,504	$ 3,709,718

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

BIO-RAD LABORATORIES, INC.
Consolidated Balance Sheets
(continued)
(In thousands, except share data)

	December 31,	
	2016	2015
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Accounts payable	$ 133,109	$ 122,391
Accrued payroll and employee benefits	163,364	157,857
Notes payable and current maturities of long-term debt	334	298
Income and other taxes payable	28,124	29,339
Deferred revenue	31,003	29,683
Other current liabilities	115,388	101,783
Total current liabilities	471,322	441,351
Long-term debt, net of current maturities	434,186	433,883
Deferred income taxes	222,919	233,475
Other long-term liabilities	135,318	110,506
Total liabilities	1,263,745	1,219,215
Commitments and contingent liabilities		
Stockholders' equity:		
Preferred stock, $0.0001 par value, 7,500,000 shares authorized; issued and outstanding - none	—	—
Class A common stock, $0.0001 par value; 80,000,000 shares authorized; shares issued - 24,454,048 and 24,230,448 at 2016 and 2015, respectively; shares outstanding - 24,453,926 and 24,230,326 at 2016 and 2015, respectively	2	2
Class B common stock, $0.0001 par value; 20,000,000 shares authorized; shares issued - 5,123,883 and 5,130,558 at 2016 and 2015, respectively; shares outstanding - 5,122,966 and 5,129,641 at 2016 and 2015, respectively	1	1
Additional paid-in capital	332,911	300,408
Class A treasury stock at cost, 122 shares at 2016 and 2015	(12)	(12)
Class B treasury stock at cost, 917 shares at 2016 and 2015	(89)	(89)
Retained earnings	1,836,180	1,808,055
Accumulated other comprehensive income	417,766	382,138
Total stockholders' equity	2,586,759	2,490,503
Total liabilities and stockholders' equity	$ 3,850,504	$ 3,709,718

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

BIO-RAD LABORATORIES, INC.
Consolidated Statements of Income
(In thousands, except per share data)

	Year Ended December 31,		
	2016	2015	2014
Net sales	$ 2,068,172	$ 2,019,441	$ 2,175,044
Cost of goods sold	930,085	897,771	996,527
Gross profit	1,138,087	1,121,670	1,178,517
Selling, general and administrative expense	816,724	761,990	808,200
Research and development expense	205,864	192,972	220,333
Impairment losses on goodwill and long-lived assets	62,305	—	—
Income from operations	53,194	166,708	149,984
Interest expense	21,942	21,692	22,131
Foreign exchange losses, net	4,542	10,249	9,305
Other (income) expense, net	(14,850)	(11,080)	(13,009)
Income before income taxes	41,560	145,847	131,557
Provision for income taxes	(13,435)	(32,754)	(42,712)
Net income	$ 28,125	$ 113,093	$ 88,845
Basic earnings per share:			
Net income per basic share	$ 0.96	$ 3.87	$ 3.08
Weighted average common shares - basic	29,440	29,186	28,876
Diluted earnings per share:			
Net income per diluted share	$ 0.95	$ 3.85	$ 3.05
Weighted average common shares - diluted	29,646	29,409	29,133

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

BIO-RAD LABORATORIES, INC.
Consolidated Statements of Comprehensive Income
(In thousands)

	Year Ended December 31,		
	2016	2015	2014
Net income	$ 28,125	$ 113,093	$ 88,845
Other comprehensive income (loss):			
Foreign currency translation adjustments	(32,394)	(37,536)	(118,142)
Foreign other post-employment benefits adjustments, net of income taxes	2,086	(4,403)	(8,186)
Net unrealized holding gains on available-for-sale (AFS) investments, net of income taxes	65,936	205,132	4,556
Other comprehensive income (loss), net of income taxes	35,628	163,193	(121,772)
Comprehensive income (loss)	$ 63,753	$ 276,286	$ (32,927)

Reclassification adjustments are calculated using the specific identification method.
The accompanying notes are an integral part of these consolidated financial statements.

BIO-RAD LABORATORIES, INC.
Consolidated Statements of Cash Flows
(In thousands)

	Year Ended December 31,		
	2016	2015	2014
Cash flows from operating activities:			
Cash received from customers	$ 2,074,024	$ 1,956,084	$ 2,162,520
Cash paid to suppliers and employees	(1,810,844)	(1,730,062)	(1,806,526)
Interest paid, net	(21,318)	(20,793)	(20,793)
Income tax payments, net	(38,442)	(31,715)	(28,939)
Settlement with the SEC and DOJ relating to the FCPA, including interest	—	—	(55,050)
Investment proceeds and miscellaneous receipts, net	15,683	11,953	15,671
Excess tax benefits from share-based compensation	(1,506)	(3,610)	(1,349)
(Payments for) proceeds from forward foreign exchange contracts, net	(1,164)	4,353	7,778
Net cash provided by operating activities	216,433	186,210	273,312
Cash flows from investing activities:			
Capital expenditures	(141,436)	(112,000)	(120,999)
Proceeds from dispositions of property, plant and equipment	398	79	225
Payments for acquisition and long-term investment	(14,165)	(4,356)	(44,627)
Payments for purchases of intangible assets	(135)	(1,372)	(15,479)
Payments for purchases of restricted investment	(350)	(4,210)	—
Payments for purchases of marketable securities and investments	(278,071)	(294,497)	(205,746)
Proceeds from sales of marketable securities and investments	76,859	78,664	75,725
Proceeds from maturities of marketable securities and investments	143,020	170,823	120,390
Net cash used in investing activities	(213,880)	(166,869)	(190,511)
Cash flows from financing activities:			
Net borrowings (payments) on line-of-credit arrangements and notes payable	37	—	(1,560)
Payments on long-term borrowings	(303)	(282)	(253)
Proceeds from issuances of common stock for share-based compensation	11,280	8,236	15,051
Payments of contingent consideration	(3,500)	(2,983)	(2,374)
Debt issuance costs on long-term borrowings	—	—	(524)
Excess tax benefits from share-based compensation	1,506	3,610	1,349
Net cash provided by financing activities	9,020	8,581	11,689
Effect of foreign exchange rate changes on cash	(12,858)	16,376	(12,790)
Net (decrease) increase in cash and cash equivalents	(1,285)	44,298	81,700
Cash and cash equivalents at beginning of year	457,549	413,251	331,551
Cash and cash equivalents at end of year	$ 456,264	$ 457,549	$ 413,251

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

BIO-RAD LABORATORIES, INC.
Consolidated Statements of Changes in Stockholders' Equity
(In thousands)

	Common Stock	Additional Paid-in Capital	Treasury Stock	Retained Earnings	Accumulated Other Comprehensive Income	Total Stockholders' Equity
Balance at December 31, 2013	$ 3	$ 239,986	$ (101)	$ 1,606,117	$ 340,717	$ 2,186,722
Net income	—	—	—	88,845	—	88,845
Other comprehensive loss, net of tax	—	—	—	—	(121,772)	(121,772)
Issuance of common stock	—	15,051	—	—	—	15,051
Stock compensation expense	—	14,888	—	—	—	14,888
Tax benefit-exercise stock options	—	1,421	—	—	—	1,421
Balance at December 31, 2014	3	271,346	(101)	1,694,962	218,945	2,185,155
Net income	—	—	—	113,093	—	113,093
Other comprehensive income, net of tax	—	—	—	—	163,193	163,193
Issuance of common stock	—	8,236	—	—	—	8,236
Stock compensation expense	—	16,983	—	—	—	16,983
Tax benefit-exercise stock options	—	3,843	—	—	—	3,843
Balance at December 31, 2015	3	300,408	(101)	1,808,055	382,138	2,490,503
Net income	—	—	—	28,125	—	28,125
Other comprehensive income, net of tax	—	—	—	—	35,628	35,628
Issuance of common stock	—	11,280	—	—	—	11,280
Stock compensation expense	—	19,730	—	—	—	19,730
Tax benefit-exercise stock options	—	1,493	—	—	—	1,493
Balance at December 31, 2016	$ 3	$ 332,911	$ (101)	$ 1,836,180	$ 417,766	$ 2,586,759

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

1. SIGNIFICANT ACCOUNTING POLICIES

Basis of Presentation

The consolidated financial statements include the accounts of Bio-Rad Laboratories, Inc. and all of our wholly and majority owned subsidiaries (referred to in this report as "Bio-Rad," "we," "us" and "our") after elimination of intercompany balances and transactions. The preparation of financial statements in conformity with U.S. generally accepted accounting principles requires management to make estimates and assumptions that affect the amounts reported in the financial statements and accompanying notes. Actual results could differ from those estimates.

We evaluate subsequent events and the evidence they provide about conditions existing at the date of the balance sheet as well as conditions that arose after the balance sheet date but through the date the financial statements are issued. The effects of conditions that existed at the balance sheet date are recognized in the financial statements. Events and conditions arising after the balance sheet date but before the financial statements are issued are evaluated to determine if disclosure is required to keep the financial statements from being misleading. To the extent such events and conditions exist, disclosures are made regarding the nature of events and the estimated financial effects for those events and conditions.

Cash and Cash Equivalents

Cash and cash equivalents consist of cash and highly liquid investments with original maturities of three months or less which are readily convertible into cash. Cash equivalents are stated at cost, which approximates fair value.

Short-term Restricted Investments

Short-term restricted investments of $4.56 million and $4.21 million at December 31, 2016 and 2015, respectively, represent a money market fund for collateral that secures worker's compensation and general liability insurance. Investment income accrues to Bio-Rad and is recorded in Cash and cash equivalents in the Consolidated Balance Sheets.

Available-for-Sale Investments

Available-for-sale investments consist of corporate obligations, municipal securities, asset backed securities, U.S. government sponsored agencies and marketable equity securities. Management classifies investments at the time of purchase and reevaluates such classification at each balance sheet date. Investments with maturities beyond one year may be classified as short-term based on their liquid nature and because such marketable securities represent the investment of cash that is available for current operations. Available-for-sale investments are reported at fair value based on quoted market prices and other observable market data. Unrealized gains and losses are reported as a component of other comprehensive income, net of any related tax effect. Unrealized losses are charged against income when a decline in the fair value of an individual security is determined to be other-than-temporary. We review our available-for-sale investments for other-than-temporary losses on a quarterly basis. Realized gains and losses and other-than-temporary impairments on investments are included in Other (income) expense, net (see Note 10).

Concentration of Credit Risk

Financial instruments that potentially subject us to concentration of credit risk consist primarily of cash and cash equivalents, investments, foreign exchange contracts and trade accounts receivable. Cash and cash equivalents and

investments are placed with various highly rated major financial institutions located in different geographic regions. Bio-Rad has not sustained significant losses from instruments held at financial institutions.

The forward contracts used in managing our foreign currency exposures have an element of risk in that the counterparties may be unable to meet the terms of the agreements. We attempt to minimize this risk by limiting the counterparties to a diverse group of highly-rated domestic and international financial institutions. In the event of non-performance by these counterparties, the carrying values of our financial instruments represent the maximum amount of loss we would have incurred as of our fiscal year-end. However, we do not expect to record any losses as a result of counterparty default.

We perform credit evaluation procedures related to our trade receivables and with the exception of certain developing countries, generally do not require collateral. As a result of increased risk in certain developing countries, some Bio-Rad sales are subject to collateral letters of credit from our customers. Credit risk for trade accounts receivable is generally limited due to the large number of customers and their dispersion across many geographic areas. However, a significant amount of trade receivables are with national healthcare systems in countries within the European Union.

Accounts Receivable

We maintain an allowance for doubtful accounts for estimated losses resulting from the inability of our customers to make required payments. The amount of the allowance is determined by analyzing known uncollectible accounts, aged receivables, economic conditions in the customers' country or industry, historical losses and our customers' credit-worthiness. Amounts later determined and specifically identified to be uncollectible are charged or written off against this allowance.

Inventory

Inventories are valued at the lower of actual cost or market (net realizable value) and include material, labor and overhead costs. The first-in, first-out method is used to relieve inventory for products sold.

Property, Plant and Equipment

Property, plant and equipment are carried at cost, less accumulated depreciation and amortization. Included in property, plant and equipment are buildings and equipment acquired under capital lease arrangements, reagent rental equipment and capitalized software, including costs for software developed or obtained for internal use. Property, plant and equipment are assessed for impairment quarterly or whenever events or changes in circumstances indicate that the carrying amount may not be recoverable.

Depreciation is computed on a straight-line basis over the estimated useful lives of the assets. Buildings and leasehold improvements are amortized over 15-30 years or the term of the leases or life of the improvements, whichever is shorter. With the exception of reagent rental equipment, which is amortized over a 1-5 year period, equipment and capitalized software is depreciated over 3-12 years.

Goodwill

Goodwill represents the excess of the cost over the fair value of net tangible and identifiable intangible assets of acquired businesses. Goodwill is assessed for impairment by applying fair value based tests annually in the fourth quarter or whenever events or changes in circumstances indicate that the carrying amount may not be recoverable. We perform impairment tests of goodwill at our reporting unit level, which is one level below our operating segments. Our reporting units are identified as components for which discrete financial information is available and is regularly reviewed by management. Goodwill amounts are assigned to reporting units at the time of acquisition.

The goodwill impairment test consists of a two-step process. The first step of the goodwill impairment test, used to identify potential impairment, compares the fair value of a reporting unit to its carrying value, including goodwill.

We use a projected discounted cash flow model to determine the fair value of a reporting unit. If the fair value of the reporting unit exceeds its carrying amount, goodwill of the reporting unit is considered not impaired, and the second step of the impairment test is not required. The second step, if required, compares the implied fair value of the reporting unit goodwill with the carrying amount of that goodwill. The fair value of a reporting unit is allocated to all of the assets and liabilities of that unit (including any unrecognized intangible assets) as if the reporting unit had been acquired in a business combination and the fair value of the reporting unit was the price paid to acquire the reporting unit. If the carrying amount of the reporting unit's goodwill exceeds its implied fair value, an impairment charge is recognized in an amount equal to that excess.

Long-Lived Assets

For purposes of recognition and measurement of an impairment loss, a long-lived asset or assets are grouped with other assets and liabilities at the lowest level for which identifiable cash flows are largely independent of the cash flows of other assets and liabilities. We assess the impairment of long-lived assets (including identifiable intangible assets) quarterly or whenever events or changes in circumstances indicate that the carrying value may not be recoverable. Factors that we consider important that could trigger an impairment review include:

- significant under-performance relative to expected, historical or projected future operating results;
- significant changes in the manner of use of the long-lived assets, intangible assets or the strategy for our overall business;
- a current expectation that, more likely than not, a long-lived asset will be sold or otherwise disposed of at a loss before the end of its previously estimated useful life; and
- significant negative industry, legal, regulatory or economic trends.

When management determines that the carrying value of long-lived assets may not be recoverable based upon the existence of one or more of the above indicators of impairment, we test for any impairment based on a projected undiscounted cash flow method. Projected future operating results and cash flows of the asset or asset group are used to establish the fair value used in evaluating the carrying value of long-lived and intangible assets. We estimate the future cash flows of the long-lived assets using current and long-term financial forecasts. The carrying amount of a long-lived asset is not recoverable if it exceeds the sum of the undiscounted cash flows expected to result from the use and eventual disposition of the asset. If this is the case, an impairment loss would be recognized. The impairment loss recognized is the amount by which the carrying amount exceeds the fair value.

Income Taxes

We account for income taxes under the asset and liability method, which requires the recognition of deferred tax assets and liabilities for the expected future tax consequences of events that have been included in the financial statements. Under this method, deferred tax assets and liabilities reflect the tax effects of losses, credits, and temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and the amounts used for income tax purposes. They are determined using enacted tax rates in effect for the year in which the differences are expected to reverse. The effect of a change in tax rates on deferred tax assets and liabilities is recognized in income in the period that includes the enactment date.

We record deferred tax assets to the extent we believe these assets will more likely than not be realized. In making such determination, we consider all available positive and negative evidence, including scheduled reversals of deferred tax liabilities, projected future taxable income, tax planning strategies and recent financial operations. To the extent we determine that we are able to realize our deferred income tax assets in the future in excess of their net recorded amount, we make an adjustment to the valuation allowance which may reduce the provision for income taxes. When we establish or reduce the valuation allowance against our deferred tax assets, our provision for income taxes will increase or decrease, respectively, in the period that determination to change the valuation allowance is made.

We recognize the tax benefit from an uncertain tax position only if it is more likely than not that the tax position will be sustained on examination by the taxing authorities based on the technical merits of the position. The tax benefits recognized in the financial statements on a particular tax position are measured based on the largest benefit

that has a greater than a 50% likelihood of being realized upon settlement. The amount of unrecognized tax benefits is adjusted as appropriate for changes in facts and circumstances, such as significant amendments to existing tax law, new regulations or interpretations by the taxing authorities, new information obtained during a tax examination, or resolution of an examination. We recognize both accrued interest and penalties, where appropriate, related to unrecognized tax benefits in the provision for income taxes.

Revenue Recognition

Revenue is recognized when pervasive evidence of an arrangement exists, the price to the buyer is fixed or determinable, collectability is reasonably assured and title has passed to the customer or product has been delivered absent specific contractual specifications. Revenue associated with equipment that requires factory installation is not recorded until installation is complete and customer acceptance, if required contractually, has occurred. At the time revenue is recognized, a provision is recognized for estimated product returns. Service revenues on extended warranty contracts are recognized ratably over the life of the service agreement, or as services are performed if not under contract. Net sales are the actual selling price of products to customers. Any taxes billed to the customer (sales tax, value added tax, etc.) shall be credited to the tax liability accounts and excluded from net sales.

Reagent agreements are a diagnostic industry sales method that provides use of an instrument and consumables (reagents) to a customer on a per test basis. We evaluate our reagent agreements and account for these contracts under the guidance pertaining to accounting for revenue arrangements with multiple deliverables. Our reagent agreements represent one unit of accounting as the instrument and consumables are interdependent in producing a diagnostic result that neither has a stand-alone value with respect to these agreements. All revenues that we earn under our reagent agreements are recognized pursuant to the terms of each agreement and are based and entirely contingent upon either (i) when the consumables to conduct a fixed number of tests are delivered or (ii) as reported by the customer on a per test basis.

Shipping and Handling

We classify all freight costs billed to customers as Net sales. Related freight costs are included in Cost of goods sold.

Warranty

We warrant certain equipment against defects in design, materials and workmanship, mostly for a period of one year. Upon delivery of that equipment, we establish, as part of Cost of goods sold, a provision for the expected costs of such warranty based on historical experience, specific warranty terms and customer feedback. A review is performed on a quarterly basis to assess the adequacy of our warranty accrual.

Changes in the warranty accrual, included in Other current liabilities and Other long-term liabilities, were as follows (in millions):

	2016	2015
January 1	$ 17.4	$ 17.8
Provision for warranty	33.4	30.6
Actual warranty costs	(33.2)	(31.0)
December 31	$ 17.6	$ 17.4

Research and Development

Internal research and development costs are expensed as incurred. Third-party research and development costs are expensed when the contracted work has been performed.

Foreign Currency

Balance sheet accounts of international subsidiaries are translated at the current exchange rates as of the end of each accounting period. Income statement items are translated at average exchange rates for the period. The resulting translation adjustments are recorded as a separate component of stockholders' equity.

Foreign currency transaction gains and losses are included in Foreign exchange losses, net in the Consolidated Statements of Income. Transaction gains and losses result primarily from fluctuations in exchange rates when intercompany receivables and payables are denominated in currencies other than the functional currency of our subsidiary that recorded the transaction.

Forward Foreign Exchange Contracts

As part of distributing our products, we regularly enter into intercompany transactions. We enter into forward foreign exchange contracts to manage foreign exchange risk of future movements in exchange rates that affect foreign currency denominated intercompany receivables and payables. We do not use derivative financial instruments for speculative or trading purposes, nor do we seek hedge accounting treatment for any of our contracts. As a result, these contracts, generally with maturity dates of 90 days or less and denominated primarily in currencies of industrial countries, are recorded as an asset or liability measured at their fair value at each balance sheet date. The resulting gains or losses offset exchange gains or losses, on the related receivables and payables, all of which are recorded in Foreign exchange losses, net in the Consolidated Statements of Income.

Share-Based Compensation Plans

Stock-based compensation expense for all share-based payment awards granted is determined based on the grant-date fair value. We recognize these compensation costs net of estimated forfeitures over the requisite service period of the award, which is generally the vesting term of the share-based payment awards. We estimated the forfeiture rate based on our historical experience. These plans are described more fully in Note 9.

Earnings Per Share

Basic earnings per share is computed by dividing net income attributable to Bio-Rad by the weighted average number of common shares outstanding for that period. Diluted earnings per share takes into account the effect of dilutive instruments, such as stock options and restricted stock, and uses the average share price for the period in determining the number of potential common shares that are to be added to the weighted average number of shares outstanding. Potential common shares are excluded from the diluted earnings per share calculation if the effect would be anti-dilutive.

The weighted average number of common shares outstanding used to calculate basic and diluted earnings per share and the anti-dilutive shares are as follows (in thousands):

	Year Ended December 31,		
	2016	2015	2014
Basic weighted average shares outstanding	29,440	29,186	28,876
Effect of potentially dilutive stock options and restricted stock awards	206	223	257
Diluted weighted average common shares	29,646	29,409	29,133
Anti-dilutive stock options and restricted stock awards excluded from the computation of diluted EPS	113	109	122

Fair Value of Financial Instruments

For certain financial instruments, including cash and cash equivalents, short-term investments, accounts receivable, marketable securities, notes payable, accounts payable and foreign exchange contracts, the carrying amounts approximate fair value.

The estimated fair value of financial instruments is based on the exchange price that would be received for an asset or paid to transfer a liability (an exit price) using available market information or other appropriate valuation methodologies in the principal or most advantageous market for the asset or liability in an orderly transaction between market participants. Estimates are not necessarily indicative of the amounts that could be realized in a current market exchange as considerable judgment is required in interpreting market data used to develop estimates of fair value. The use of different market assumptions or estimation techniques could have a material effect on the estimated fair value (see Note 3).

Recent Accounting Standards Updates

In January 2017, the Financial Accounting Standards Board ("FASB") issued Accounting Standards Update No. ("ASU") 2017-04, "Simplifying the Test for Goodwill Impairment." ASU 2017-04 removes Step 2 of the goodwill impairment test, which requires a hypothetical purchase price allocation. A goodwill impairment will be the amount by which a reporting unit's carrying value exceeds its fair value, not to exceed the carrying amount of goodwill. ASU 2017-04 is effective prospectively for annual and interim periods beginning after December 15, 2019. Early adoption is permitted for any impairment tests performed after January 1, 2017. ASU 2017-04 will provide a more stream-lined approach to evaluating future goodwill impairment and we early adopted on January 1, 2017. We have not assessed the impact that ASU 2017-04 will have on our consolidated financial statements because a goodwill impairment has not occurred after January 1, 2017.

In January 2017, the FASB issued ASU 2017-01, "Clarifying the Definition of a Business." ASU 2017-01 changes the definition of a business to assist entities with evaluating when a set of transferred assets and activities is a business. If substantially all of the fair value is concentrated in a single asset or a group of similar assets, the acquired set is not a business. If this is not met, the entity then evaluates whether the set meets the requirement that a business include, at a minimum, an input and a substantive process that together significantly contribute to the ability to create outputs. Determining whether a set constitutes a business is critical because the accounting for a business combination differs significantly from that of an asset acquisition. ASU 2017-01 is effective for fiscal years beginning after December 15, 2017, and interim periods within those years. ASU 2017-01 will be applied prospectively to any transactions occurring within the period of adoption. Early adoption is permitted, including for interim or annual periods in which the financial statements have not been issued or made available for issuance. We early adopted ASU 2017-01 on January 1, 2017. For our acquisition of RainDance Technologies, Inc., ASU 2017-01 did not affect the conclusion of it being a business combination (see Note 17 to the consolidated financial statements).

In November 2016, the FASB issued ASU 2016-18, "Restricted Cash." ASU 2016-18 requires entities to show the changes in the total of cash, cash equivalents, restricted cash and restricted cash equivalents in the statement of cash flows. As a result, entities will no longer present transfers between cash and cash equivalents and restricted cash and restricted cash equivalents in the statement of cash flows. ASU 2016-18 will be applied retrospectively and is effective for fiscal years beginning after December 15, 2017, and interim periods within those years. Early adoption is permitted. We have had a limited amount of restricted cash of $2.0 million and $1.4 million as of December 31, 2016 and 2015, respectively, which was reclassified from cash to either Prepaid expenses, Other current assets or Other assets in the Consolidated Balance Sheets. At the time of adoption, we cannot assure whether these same restricted cash amounts will be held or what other restricted cash we may have, or that historically reported amounts will be similar.

In October 2016, the FASB issued ASU 2016-16, "Intra-Entity Transfers of Assets Other Than Inventory." ASU 2016-16 requires immediate recognition of income tax consequences of intercompany asset transfers, other than

inventory transfers. Existing GAAP prohibits recognition of income tax consequences of intercompany asset transfers whereby the seller defers any net tax effect and the buyer is prohibited from recognizing a deferred tax asset on the difference between the newly created tax basis of the asset in its tax jurisdiction and its financial statement carrying amount as reported in the consolidated financial statements. ASU 2016-16 specifically excludes from its scope intercompany inventory transfers whereby the recognition of tax consequences will take place when the inventory is sold to third parties. ASU 2016-16 is effective for fiscal years beginning after December 15, 2017, and interim periods within those fiscal years. Early adoption is permitted as of the beginning of an annual reporting period for which financial statements have not been issued or made available for issuance. We do not plan to early adopt ASU 2016-16. We are currently evaluating the effect ASU 2016-16 will have on our consolidated financial statements.

In August 2016, the FASB issued ASU 2016-15, "Classification of Certain Cash Receipts and Cash Payments." ASU 2016-15 is intended to reduce diversity in practice in how certain transactions are classified in the statement of cash flows. ASU 2016-15 is effective for fiscal years beginning after December 15, 2017, and interim periods within those fiscal years, with early adoption permitted. We are currently evaluating the effect ASU 2016-15 will have on our consolidated statements of cash flows, if any.

In June 2016, the FASB issued ASU 2016-13, "Measurement of Credit Losses on Financial Instruments." ASU 2016-13 will replace the current incurred loss approach with an expected loss model for trade and other receivables, and instruments measured at amortized cost and require entities to record allowances for available-for-sale debt securities rather than reduce the carrying amount under the current other-than-temporary impairment model. ASU 2016-13 is effective for fiscal years beginning after December 15, 2019, and interim periods within those fiscal years. Early adoption is permitted for all entities for annual periods beginning after December 15, 2018, and interim periods therein. We are currently evaluating the effect ASU 2016-13 will have on our consolidated financial statements.

In March 2016, the FASB issued ASU 2016-09, "Improvements to Employee Share-Based Payment Accounting." ASU 2016-09 will require all income tax effects of awards to be recognized in the income statement when the awards vest or are settled. It also will allow an employer to repurchase more of an employee’s shares than it can today for tax withholding purposes without triggering liability accounting and to make a policy election to account for forfeitures as they occur. ASU 2016-09 is effective for fiscal years beginning after December 15, 2016, and interim periods within those fiscal years. We adopted ASU 2016-09 on January 1, 2017 and made a policy election to account for forfeitures as they occur. We do not expect ASU 2016-09 to have a material impact on our consolidated financial statements.

In March 2016, the FASB issued ASU 2016-07, "Simplifying the Transition to the Equity Method of Accounting," which eliminates the requirement to retrospectively apply the equity method in previous periods when an investor initially obtains significant influence over an investee. Under current guidance, an investor that does not consolidate an investment and initially accounts for it under a method other than the equity method is required to retrospectively apply the equity method in prior periods in which it held the investment when it subsequently obtained significant influence. ASU 2016-07 will be applied on a prospective basis and is effective for all entities for fiscal years beginning after December 15, 2016, and interim periods within those years. We adopted ASU 2016-07 on January 1, 2017 and do not expect it to materially affect our consolidated financial statements, unless our situation changes regarding our ability to influence the investee in the future as a result of our cost method investment in Sartorius AG (see Note 3 to the consolidated financial statements).

In February 2016, the FASB issued ASU 2016-02, "Leases," which will require, among other items, lease accounting to recognize most leases as assets and liabilities on the balance sheet. Qualitative and quantitative disclosures will be enhanced to better understand the amount, timing and uncertainty of cash flows arising from leases. ASU 2016-02 is effective for fiscal years beginning after December 15, 2018, and interim periods within those fiscal years, with early adoption permitted. We do not plan to early adopt. ASU 2016-02 will be adopted on a modified retrospective basis, with elective reliefs, which requires application of ASU 2016-02 for all periods

presented. We are currently gathering, documenting and analyzing lease agreements related to this ASU and anticipate material additions to the balance sheet for right-of-use assets, offset by the associated liabilities.

In January 2016, the FASB issued ASU 2016-01, "Recognition and Measurement of Financial Assets and Financial Liabilities." Amendments under ASU 2016-01, among other items, require that all equity investments in unconsolidated entities (other than those accounted for using the equity method of accounting) will generally be measured at fair value through earnings. There will no longer be an available-for-sale classification, for which changes in fair value are reported in other comprehensive income, for equity securities with readily determinable fair values. For equity investments without readily determinable fair values, the cost method is also eliminated. However, entities will be able to elect to record equity investments without readily determinable fair values at cost, less impairment, and plus or minus subsequent adjustments for observable price changes. Changes in the basis of these equity investments will be reported in current earnings. ASU 2016-01 is effective for fiscal years beginning after December 15, 2017, and interim periods within those fiscal years. For equity securities that would be affected by ASU 2016-01, see the available-for-sale investments table in Note 3 to the consolidated financial statements. At the time of adoption, we cannot assure whether these same equity securities will be held or what other equity securities we may have, or that historically reported changes will be similar.

In September 2015, the FASB issued ASU 2015-16, "Simplifying the Accounting for Measurement-Period Adjustments," which eliminates the requirement for an acquirer in a business combination to account for measurement-period adjustments retrospectively. Under ASU 2015-16, acquirers must recognize measurement-period adjustments during the period in which they determine the amounts, including the effect on earnings of any amounts they would have recorded in previous periods if the accounting had been completed at the acquisition date. The measurement period cannot exceed one year from the date of the acquisition. ASU 2015-16 was effective on January 1, 2016, and we adopted it at the same time as a change in accounting policy, which had no impact on our consolidated financial statements.

In July 2015, the FASB issued ASU 2015-11, “Simplifying the Measurement of Inventory.” Under current guidance, an entity subsequently measures inventory at the lower of cost or market, with market defined as replacement cost, net realizable value (NRV), or NRV less a normal profit margin. An entity uses current replacement cost provided that it is not above NRV (i.e., the ceiling) or below NRV less an “approximately normal profit margin” (i.e., the floor). ASU 2015-11 eliminates this analysis and requires entities to measure most inventory “at the lower of cost and NRV.” ASU 2015-11 is effective prospectively for annual periods beginning after December 15, 2016, and interim periods therein. We adopted ASU 2015-11 on January 1, 2017 and do not expect it to have a material impact to our consolidated financial statements.

In April 2015, the FASB issued ASU 2015-03, "Simplifying the Presentation of Debt Issuance Costs." ASU 2015-03 was issued to simplify the presentation of debt issuance costs by requiring debt issuance costs to be presented as a deduction from the corresponding debt liability. This makes the presentation of debt issuance costs consistent with the presentation of debt discounts or premiums. Under prior U.S. GAAP, debt issuance costs were reported on the balance sheet as assets and amortized as interest expense. Under ASU 2015-03, debt issuance costs will continue to be amortized to interest expense using the effective interest method. In August 2015, the FASB issued ASU 2015-15, "Presentation and Subsequent Measurement of Debt Issuance Costs Associated with Line-of-Credit Arrangements" to clarify the SEC staff’s position that it would not object to an entity deferring and presenting debt issuance costs as an asset and subsequently amortizing the deferred debt issuance costs ratably over the term of the line-of-credit arrangement, which is our current practice. We adopted ASU 2015-03 on January 1, 2016 on a retrospective basis as a change in accounting policy. The Condensed Consolidated Balance Sheet as of December 31, 2015 was retrospectively adjusted by decreasing Other assets and Long-term debt, net of current maturities, by $1.8 million, respectively.

In May 2014, the FASB issued ASU 2014-09, “Revenue from Contracts with Customers,” which requires an entity to recognize the amount of revenue to which it expects to be entitled for the transfer of promised goods or services to customers. ASU 2014-09 will replace most existing revenue recognition guidance in GAAP when it becomes effective. In August 2015, the FASB issued ASU 2015-14 to defer the effective date for annual reporting periods

beginning after December 15, 2017, including interim periods within that reporting period. Early adoption is permitted as of the original effective date in ASU 2014-09, which is annual reporting periods beginning after December 15, 2016, however, we will not early adopt. In December 2016, the FASB issued ASU 2016-20, "Technical Corrections and Improvements to Topic 606, Revenue from Contracts with Customers" which affect narrow aspects of the guidance issued in ASU 2014-09. In May 2016, the FASB issued ASU 2016-12, "Narrow-Scope Improvements and Practical Expedients," which amends and clarifies certain aspects in ASU 2014-09 that include collectiblity, presentation of sales and other taxes collected from customers, noncash consideration, contract modifications and completed contracts at transition. In April 2016, the FASB issued ASU 2016-10, "Identifying Performance Obligations and Licensing," which amends the guidance in ASU 2014-09 on accounting for licenses of intellectual property and identifying performance obligations. In March 2016, the FASB issued ASU 2016-08, "Principal versus Agent Considerations (Reporting Revenue Gross versus Net)," which amends the principal versus agent guidance in ASU 2014-09. The standards are to be applied retrospectively and permit the use of either the retrospective or cumulative effect transition method. We will use the cumulative effect transition method once we adopt ASUs 2014-09, 2016-20, 2016-12, 2016-10 and 2016-08 on January 1, 2018. We have completed revenue recognition diagnostic surveys across all regions in our decentralized sales contracting process, which is based on local country commercial regulations and practices. We have begun assessing individual contracts to identify performance obligations under these ASU's, as compared with the deliverables and separate units of accounting previously identified under current U.S. GAAP, to determine the effect that these ASU's will have on our consolidated financial statements and related disclosures.

2. ACQUISITIONS

Propel Labs, Inc.

In January 2016, we acquired a high performance analytical flow cytometer platform from Propel Labs (Propel) that will enable advanced and novice users to perform basic and multi-parameter cytometry for a wide range of applications and chemistries. This asset acquisition was accounted for as a business combination, as the new analytical flow cytometer platform represented an integrated set of activities and assets that is capable of being conducted and managed for the purpose of providing a return and therefore constitutes a business in accordance with GAAP. The amount of the acquisition-related cost was minimal as Bio-Rad primarily represented itself during the acquisition process. This business acquisition is included in our Life Science segment's results of operations from the acquisition date.

The fair value of the consideration as of the acquisition date was $32.8 million, which included $9.5 million paid in cash at the closing date and $23.3 million in contingent consideration potentially payable to Propel, after the effects of a calculation revision that were reflected in the fourth quarter of 2016. This revision reduced goodwill/ intangibles and contingent consideration by the same amount and had no significant impact on our Consolidated Income Statement. The contingent consideration was based on a probability-weighted income approach related to the achievement of certain sales milestones, and was recognized at its estimated fair value of $25.4 million as of December 31, 2016 (see Note 3, "Fair Value Measurements").

The fair values of the net assets acquired from Propel as of the acquisition date were determined to be $32.7 million of definite-lived intangible assets and $0.1 million of goodwill. We expect the goodwill recorded to be deductible for income tax purposes. The acquired analytical flow cytometer platform fits well into Bio-Rad's existing Life Science segment product offerings and may offer researchers greater access to this technology.

In addition, Bio-Rad contracted with Propel to provide development services concurrent with and included in the purchase agreement. Bio-Rad is receiving future manufacturing, engineering and marketing support from Propel on which payments will be made upon the successful completion of all contracted services. As a result, these services are not included in the total purchase consideration and a majority will be expensed in future periods.

3. *FAIR VALUE MEASUREMENTS*

We determine the fair value of an asset or liability based on the assumptions that market participants would use in pricing the asset or liability in an orderly transaction between market participants at the measurement date. The identification of market participant assumptions provides a basis for determining what inputs are to be used for pricing each asset or liability. A fair value hierarchy has been established which gives precedence to fair value measurements calculated using observable inputs over those using unobservable inputs. This hierarchy prioritizes the inputs into three broad levels as follows:

- Level 1: Quoted prices in active markets for identical instruments
- Level 2: Other significant observable inputs (including quoted prices in active markets for similar instruments)
- Level 3: Significant unobservable inputs (including assumptions in determining the fair value of certain investments)

Financial assets and liabilities carried at fair value and measured on a recurring basis as of December 31, 2016 are classified in the hierarchy as follows (in millions):

	Level 1	Level 2	Level 3	Total
Financial Assets Carried at Fair Value:				
Cash equivalents (a):				
Commercial paper	$ —	$ 14.1	$ —	$ 14.1
Foreign time deposits	11.8	—	—	11.8
Domestic time deposits	—	20.0	—	20.0
U.S. government sponsored agencies	—	1.1	—	1.1
Money market funds	5.9	—	—	5.9
Total cash equivalents	17.7	35.2	—	52.9
Restricted investment:	4.6	—	—	4.6
Available-for-sale investments (b):				
Corporate debt securities	—	179.4	—	179.4
U.S. government sponsored agencies	—	82.5	—	82.5
Foreign government obligations	—	4.4	—	4.4
Brokered certificates of deposit	—	3.6	—	3.6
Municipal obligations	—	15.4	—	15.4
Marketable equity securities	767.8	—	—	767.8
Asset-backed securities	—	62.5	—	62.5
Total available-for-sale investments	767.8	347.8	—	1,115.6
Forward foreign exchange contracts (c)	—	0.6	—	0.6
Total financial assets carried at fair value	$ 790.1	$ 383.6	$ —	$ 1,173.7
Financial Liabilities Carried at Fair Value:				
Forward foreign exchange contracts (d)	$ —	$ 1.3	$ —	$ 1.3
Contingent consideration (e)	—	—	38.5	38.5
Total financial liabilities carried at fair value	$ —	$ 1.3	$ 38.5	$ 39.8

Financial assets and liabilities carried at fair value and measured on a recurring basis as of December 31, 2015 are classified in the hierarchy as follows (in millions):

	Level 1	Level 2	Level 3	Total
Financial Assets Carried at Fair Value:				
Cash equivalents (a):				
Commercial paper	$ —	$ 33.2	—	$ 33.2
Foreign government obligations	—	0.6	—	0.6
Foreign time deposits	11.9	—	—	11.9
U.S. government sponsored agencies	—	14.6	—	14.6
Money market funds	11.3	—	—	11.3
Total cash equivalents	23.2	48.4	—	71.6
Restricted investment:	4.2	—	—	4.2
Available-for-sale investments (b):				
Corporate debt securities	—	156.9	—	156.9
U.S. government sponsored agencies	—	74.8	—	74.8
Foreign government obligations	—	4.6	—	4.6
Municipal obligations	—	6.4	—	6.4
Marketable equity securities	660.1	—	—	660.1
Asset-backed securities	—	54.8	—	54.8
Total available-for-sale investments	660.1	297.5	—	957.6
Forward foreign exchange contracts (c)	—	0.9	—	0.9
Total financial assets carried at fair value	$ 687.5	$ 346.8	—	$ 1,034.3
Financial Liabilities Carried at Fair Value:				
Forward foreign exchange contracts (d)	$ —	$ 1.1	—	$ 1.1
Contingent consideration (e)	—	—	19.1	19.1
Total financial liabilities carried at fair value	$ —	$ 1.1	$ 19.1	$ 20.2

(a) Cash equivalents are included in Cash and cash equivalents in the Consolidated Balance Sheets.

(b) Available-for-sale investments are included in the following accounts in the Consolidated Balance Sheets (in millions):

	December 31, 2016	December 31, 2015
Short-term investments	$ 383.2	$ 328.7
Other investments	732.4	628.9
Total	$ 1,115.6	$ 957.6

(c) Forward foreign exchange contracts in an asset position are included in Other current assets in the Consolidated Balance Sheets.

(d) Forward foreign exchange contracts in a liability position are included in Other current liabilities in the Consolidated Balance Sheets.

(e) Contingent consideration liabilities are included in the following accounts in the Consolidated Balance Sheets (in millions):

	December 31, 2016	December 31, 2015
Other current liabilities	$ 14.5	$ 13.5
Other long-term liabilities	24.0	5.6
Total	$ 38.5	$ 19.1

In 2012, we recognized a contingent consideration liability for certain milestones of $44.6 million upon our acquisition of a new cell sorting system from Propel. Since 2012, we have paid $28.9 million upon reaching the milestones and have reduced the valuation of the milestones by $12.6 million to its estimated fair value of $3.1 million as of December 31, 2016. The remaining liability was paid in February 2017.

During the first quarter of 2016, we recognized a contingent consideration liability upon our acquisition of a new high performance analytical flow cytometer platform from Propel. At the acquisition date, the contingent consideration was based on a probability-weighted income approach related to the achievement of sales milestones, ranging from 39% to 20% for the calendar years 2017 through 2020. The sales milestones could potentially range from $0 to an unlimited amount through December 31, 2020. The fair value of the contingent consideration as of the acquisition date was $23.3 million, after the effects of a calculation revision that were reflected in the fourth quarter of 2016. The contingent consideration was recognized at its estimated fair value of $25.4 million as of December 31, 2016.

The following table provides a reconciliation of the Level 3 cell sorting system and analytical flow cytometer platform contingent consideration liabilities measured at estimated fair value based on original valuations and updated quarterly for the year ended December 31, 2016 (in millions):

	2016
January 1	$ 9.1
Cell sorting system:	
Payment of sales milestone	(3.5)
Net decrease in estimated fair value of contingent consideration included in Selling, general and administrative expense	(2.5)
Analytical flow cytometer platform:	
Acquisition of high performance analytical flow cytometer platform	23.3
Increase in estimated fair value of contingent consideration included in Selling, general and administrative expense	2.1
December 31	$ 28.5

The following table provides quantitative information about Level 3 inputs for fair value measurement of analytical flow cytometer platform contingent consideration liability as of December 31, 2016. Significant increases or decreases in these inputs in isolation could result in a significantly lower or higher fair value measurement.

	Valuation Technique	Unobservable Input	Range From	Range To
Analytical flow cytometer platform	Probability-weighted income approach	Sales milestones:		
		Discount rate	10%	
		Cost of debt	4.7%	

In 2014, we recognized a contingent consideration liability upon our acquisition of GnuBIO, Inc.. The contingent consideration for the milestones was valued at $10.7 million at the acquisition date based on assumptions regarding the probability of achieving the milestones, with such amounts discounted to present value. The Level 3 contingent consideration was revalued to a fair value of $10.0 million as of December 31, 2016 and 2015.

To estimate the fair value of Level 2 debt securities as of December 31, 2016 and 2015, our primary pricing provider uses S&P Capital IQ as the primary pricing source. Our pricing process allows us to select a hierarchy of pricing sources for securities held. The chosen pricing hierarchy for our Level 2 securities, other than certificates of deposit and commercial paper, is S&P Capital IQ as the primary pricing source and then our custodian as the secondary pricing source. If S&P Capital IQ does not price a Level 2 security that we hold, then the pricing provider will utilize our custodian supplied pricing.

For commercial paper as of December 31, 2016 and 2015, pricing is determined by a straight-line calculation, starting with the purchase price on the date of purchase and increasing to par at maturity. Interest bearing certificates of deposit and commercial paper are priced at par.

Our primary pricing provider performs daily reasonableness testing of S&P Capital IQ prices. Price changes of 5% or greater are investigated and resolved. In addition, we perform a quarterly testing of the S&P Capital IQ prices to custodian reported prices. Prices outside a tolerable variance of approximately 1% are investigated and resolved.

Available-for-sale investments consist of the following (in millions):

	December 31, 2016			
	Amortized Cost	Unrealized Gains	Unrealized Losses	Estimated Fair Value
Short-term investments:				
Corporate debt securities	$ 179.7	$ 0.2	$ (0.5)	$ 179.4
Brokered certificates of deposit	3.6	—	—	3.6
Municipal obligations	15.5	—	(0.1)	15.4
Asset-backed securities	62.2	0.1	(0.1)	62.2
U.S. government sponsored agencies	83.1	0.1	(0.7)	82.5
Foreign government obligations	4.4	—	—	4.4
Marketable equity securities	32.4	3.7	(0.4)	35.7
	380.9	4.1	(1.8)	383.2
Long-term investments:				
Marketable equity securities	54.5	677.6	—	732.1
Asset-backed securities	0.3	—	—	0.3
	54.8	677.6	—	732.4
Total	$ 435.7	$ 681.7	$ (1.8)	$ 1,115.6

	December 31, 2015			
	Amortized Cost	Unrealized Gains	Unrealized Losses	Estimated Fair Value
Short-term investments:				
Corporate debt securities	$ 157.2	$ 0.1	$ (0.4)	$ 156.9
Municipal obligations	6.4	—	—	6.4
Asset-backed securities	54.8	—	(0.2)	54.6
U.S. government sponsored agencies	74.9	0.1	(0.2)	74.8
Foreign government obligations	4.6	—	—	4.6
Marketable equity securities	29.4	2.7	(0.7)	31.4
	327.3	2.9	(1.5)	328.7
Long-term investments:				
Marketable equity securities	54.5	574.2	—	628.7
Asset-backed securities	0.3	—	(0.1)	0.2
	54.8	574.2	(0.1)	628.9
Total	$ 382.1	$ 577.1	$ (1.6)	$ 957.6

The unrealized gains of our long-term marketable equity securities are primarily due to our investment in Sartorius AG preferred shares.

The following is a summary of investments with gross unrealized losses and the associated fair value (in millions):

	December 31, 2016	December 31, 2015
Fair value of investments in a loss position 12 months or more	$ 11.8	$ 10.4
Fair value of investments in a loss position less than 12 months	$ 160.5	$ 204.0
Gross unrealized losses for investments in a loss position 12 months or more	$ 0.3	$ 0.4
Gross unrealized losses for investments in a loss position less than 12 months	$ 1.5	$ 1.2

The unrealized losses on these securities are due to a number of factors, including changes in interest rates, changes in economic conditions and changes in market outlook for various industries, among others. Because Bio-Rad has the ability and intent to hold these investments with unrealized losses until a recovery of fair value, or for a reasonable period of time sufficient for a forecasted recovery of fair value, which may be maturity, we do not consider these investments to be other-than-temporarily impaired at December 31, 2016 or at December 31, 2015.

As part of distributing our products, we regularly enter into intercompany transactions. We enter into forward foreign exchange contracts to manage foreign exchange risk of future movements in foreign exchange rates that affect foreign currency denominated intercompany receivables and payables. We do not use derivative financial instruments for speculative or trading purposes. We do not seek hedge accounting treatment for these contracts. As a result, these contracts, generally with maturity dates of 90 days or less and denominated primarily in currencies of industrial countries, are recorded at their fair value at each balance sheet date. The notional principal amounts provide one measure of the transaction volume outstanding as of December 31, 2016 and do not represent the amount of Bio-Rad's exposure to loss. The estimated fair value of these contracts was derived using the spot rates from Reuters on the last business day of the quarter and the points provided by counterparties. The resulting gains

or losses offset exchange gains or losses on the related receivables and payables, both of which are included in Foreign exchange losses, net in the Consolidated Statements of Income.

The following is a summary of our forward foreign currency exchange contracts (in millions):

	December 31, 2016
Contracts maturing in January through March 2017 to sell foreign currency:	
Notional value	$ 16.9
Unrealized loss	$ 0.1
Contracts maturing in January through March 2017 to purchase foreign currency:	
Notional value	$ 328.3
Unrealized loss	$ 0.6

The following is a summary of the amortized cost and estimated fair value of our debt securities at December 31, 2016 by contractual maturity date (in millions):

	Amortized Cost	Estimated Fair Value
Mature in less than one year	$ 156.1	$ 156.1
Mature in one to five years	141.0	140.7
Mature in more than five years	51.7	51.0
Total	$ 348.8	$ 347.8

The estimated fair value of financial instruments that are not recognized at fair value in the Consolidated Balance Sheets and are included in Other investments, are presented in the table below. Fair value has been determined using significant observable inputs, including quoted prices in active markets for similar instruments. Estimates are not necessarily indicative of the amounts that could be realized in a current market exchange as considerable judgment is required in interpreting market data used to develop estimates of fair value. The use of different market assumptions or estimation techniques could have a material effect on the estimated fair value. Other investments include financial instruments, the majority of which has fair value based on similar, actively traded stock adjusted for various discounts, including a discount for marketability. Long-term debt, excluding leases and current maturities, has an estimated fair value based on quoted market prices for the same or similar issues.

The estimated fair value of the financial instruments discussed above and the level of the fair value hierarchy within which the fair value measurement is categorized are as follows (in millions):

	December 31, 2016			December 31, 2015		
	Carrying Amount	Estimated Fair Value	Fair Value Hierarchy Level	Carrying Amount	Estimated Fair Value	Fair Value Hierarchy Level
Other investments	$ 92.8	$ 984.2	2	$ 86.5	$ 843.2	2
Total long-term debt, excluding leases and current maturities	$ 422.5	$ 454.2	2	$ 421.9	$ 454.3	2

We own shares of ordinary voting stock of Sartorius AG (Sartorius), of Goettingen, Germany, a process technology supplier to the biotechnology, pharmaceutical, chemical and food and beverage industries. We own over 35% of the outstanding voting shares (excluding treasury shares) of Sartorius as of December 31, 2016. The Sartorius family trust and Sartorius family members hold a controlling interest of the outstanding voting shares. We do not have any representative or designee on Sartorius' board of directors, nor do we have the ability to exercise significant influence over the operating and financial policies of Sartorius. We account for this investment using the cost method. The carrying value of this investment is included in Other investments in our Consolidated Balance Sheets. As the stock is thinly traded and in conjunction with the valuation method discussed above, we have classified the estimated fair value as Level 2. The Level 2 classification is appropriate given the valuation method employed, which incorporates an observable input of the fair value of the Sartorius' actively traded preferred stock.

4. GOODWILL AND OTHER PURCHASED INTANGIBLE ASSETS

Changes to goodwill by segment were as follows (in millions):

	2016			2015		
	Life Science	Clinical Diagnostics	Total	Life Science	Clinical Diagnostics	Total
Balances as of January 1:						
Goodwill	$ 207.2	$ 316.9	$ 524.1	$ 207.7	$ 320.9	$ 528.6
Accumulated impairment losses and write-offs	(27.2)	(1.0)	(28.2)	(27.2)	(1.0)	(28.2)
Goodwill, net	180.0	315.9	495.9	180.5	319.9	500.4
Acquisitions	0.1	—	0.1	—	—	—
Impairment	—	(13.5)	(13.5)	—	—	—
Currency fluctuations	(0.2)	(5.2)	(5.4)	(0.5)	(4.0)	(4.5)
Balances as of December 31:						
Goodwill	207.1	311.7	518.8	207.2	316.9	524.1
Accumulated impairment losses and write-offs	(27.2)	(14.5)	(41.7)	(27.2)	(1.0)	(28.2)
Goodwill, net	$ 179.9	$ 297.2	$ 477.1	$ 180.0	$ 315.9	$ 495.9

In conjunction with the purchase of certain assets from Propel in January 2016 (see Note 2, "Acquisitions"), we recorded $0.1 million of goodwill and $32.7 million of definite-lived intangible assets: $29.7 million of developed product technology and $3.0 million of covenants not to compete, after the effects of a calculation revision that were reflected in the fourth quarter of 2016.

Information regarding our identifiable purchased intangible assets with definite and indefinite lives is as follows (in millions):

	December 31, 2016			
	Average Remaining Life (years)	Purchase Price	Accumulated Amortization	Net Carrying Amount
Customer relationships/lists	1-8	$ 84.4	$ (52.8)	$ 31.6
Know how	1-9	182.6	(136.9)	45.7
Developed product technology	3-12	125.9	(56.3)	69.6
Licenses	1-9	39.0	(30.6)	8.4
Tradenames	4-8	3.5	(2.5)	1.0
Covenants not to compete	2-9	7.8	(2.5)	5.3
Total definite-lived intangible assets		443.2	(281.6)	161.6
In-process research and development		—	—	—
Total purchased intangible assets		$ 443.2	$ (281.6)	$ 161.6

	December 31, 2015			
	Average Remaining Life (years)	Purchase Price	Accumulated Amortization	Net Carrying Amount
Customer relationships/lists	2-10	$ 84.7	$ (46.8)	$ 37.9
Know how	1-10	184.0	(121.6)	62.4
Developed product technology	4-12	101.3	(48.9)	52.4
Licenses	3-10	39.2	(28.5)	10.7
Tradenames	5-9	3.5	(2.4)	1.1
Covenants not to compete	3-7	4.8	(1.7)	3.1
Total definite-lived intangible assets		417.5	(249.9)	167.6
In-process research and development		46.4	—	46.4
Total purchased intangible assets		$ 463.9	$ (249.9)	$ 214.0

In 2016, we fully impaired goodwill and in-process research and development in the amounts of $13.5 million and $46.4 million, respectively, associated with our 2014 acquisition of GnuBIO, Inc. The impairments were based upon a revision of our Level 3 valuation inputs, i.e., expected future cash flows. There were no impairment losses recorded in 2015.

Amortization expense related to purchased intangible assets for the years ended December 31, 2016, 2015 and 2014 was $35.2 million, $36.5 million and $47.8 million, respectively. Estimated future amortization expense (based on existing purchased intangible assets) for the years ending December 31, 2017, 2018, 2019, 2020, 2021 and thereafter is $27.2 million, $24.2 million, $21.4 million, $19.4 million, $18.4 million, and $51.0 million, respectively.

5. NOTES PAYABLE AND LONG-TERM DEBT

Under domestic and international lines of credit, standby letters of credit and guarantee arrangements, we had $205.7 million available for borrowing and usage as of December 31, 2016, which was reduced by $5.4 million that was utilized for standby letters of credit and guarantee arrangements issued by our banks to support our obligations.

The principal components of long-term debt are as follows (in millions):

	December 31, 2016	December 31, 2015
4.875% Senior Notes due 2020, net of discount	$ 425.0	$ 425.0
Less unamortized discount and debt issuance costs	(2.5)	(3.1)
Long-term debt less unamortized discount and debt issuance costs	422.5	421.9
Capital leases and other debt	12.0	12.3
	434.5	434.2
Less current maturities	(0.3)	(0.3)
Long-term debt	$ 434.2	$ 433.9

Senior Notes due 2020

In December 2010, Bio-Rad sold $425.0 million principal amount of Senior Notes due 2020 (4.875% Notes). The sale yielded net cash proceeds of $422.6 million at an effective rate of 4.946%. The 4.875% Notes pay a fixed rate of interest of 4.875% per year. We have the option to redeem any or all of the 4.875% Notes at any time at a redemption price of 100% of the principal amount (plus a specified make-whole premium as defined in the indenture governing the 4.875% Notes) and accrued and unpaid interest thereon to the redemption date. Our obligations under the 4.875% Notes are not secured and rank equal in right of payment with all of our existing and future unsubordinated indebtedness. Certain covenants apply at each year end to the 4.875% Notes including limitations on the following: liens, sale and leaseback transactions, mergers, consolidations or sales of assets and other covenants. We were in compliance with these covenants as of December 31, 2016. There are no restrictive covenants relating to total indebtedness, interest coverage, stock repurchases, recapitalizations, dividends and distributions to shareholders or current ratios.

Credit Agreement

In June 2014, Bio-Rad entered into a $200.0 million unsecured Credit Agreement. Borrowings under the Credit Agreement are on a revolving basis and can be used to make permitted acquisitions, for working capital and for other general corporate purposes. We had no outstanding borrowings under the Credit Agreement as of December 31, 2016 or 2015, however, $0.8 million was utilized for domestic standby letters of credit that reduced our borrowing availability. The Credit Agreement matures in June 2019. If we had borrowed against our Credit Agreement, the borrowing rate would have been 2.25% at December 31, 2016.

The Credit Agreement requires Bio-Rad to comply with certain financial ratios and covenants, among other things. These ratios and covenants include a leverage ratio test and an interest coverage test, as well as restrictions on our ability to declare or pay dividends, incur debt, guarantee debt, enter into transactions with affiliates, merge or consolidate, sell assets, make investments and create liens. We were in compliance with all of these ratios and covenants as of December 31, 2016.

Maturities of long-term debt at December 31, 2016 are as follows: 2017 - $0.3 million; 2018 - $0.3 million; 2019 - $0.2 million; 2020 - $425.3 million; 2021 - $0.3 million; thereafter - $10.6 million.

6. INCOME TAXES

The U.S. and international components of income before taxes are as follows (in millions):

	Year Ended December 31,		
	2016	2015	2014
U.S.	$ (38.5)	$ 48.4	$ 30.6
International	80.1	97.4	101.0
Income before taxes	$ 41.6	$ 145.8	$ 131.6

The provision for income taxes consists of the following (in millions):

	Year Ended December 31,		
	2016	2015	2014
Current tax expense:			
U.S. Federal	$ 16.1	$ 8.7	$ 9.6
State	3.1	1.7	3.8
International	30.3	34.1	35.6
Current tax expense	49.5	44.5	49.0
Deferred tax (benefit) expense:			
U.S. Federal	(42.4)	(0.2)	1.5
State	(2.8)	1.2	(0.2)
International	(6.0)	(7.1)	(7.3)
Deferred tax benefit	(51.2)	(6.1)	(6.0)
Non-current tax expense (benefit)	15.1	(5.6)	(0.3)
Provision for income taxes	$ 13.4	$ 32.8	$ 42.7

The reconciliation between our effective tax rate on income before taxes and the statutory tax rate is as follows:

	Year Ended December 31,		
	2016	2015	2014
U.S. statutory tax rate	35%	35%	35%
Impact of foreign operations	(15)	(4)	(4)
Foreign dividends, net	(40)	(4)	—
Research tax credits	(9)	(2)	(3)
Nontaxable subsidies	(4)	(1)	(2)
Tax settlements and changes to unrecognized tax benefits	42	(4)	(1)
Goodwill impairment	11	—	—
Domestic manufacturing deduction	(4)	(2)	—
Stock-based compensation	3	1	1
Nondeductible executive compensation	3	1	1
Fines and penalties	2	—	3
Prior period adjustments	4	1	2
U.S. taxation on foreign income	2	—	—
Other	2	1	—
Provision for income taxes	32%	22%	32%

Our effective income tax rate was 32%, 22% and 32% in 2016, 2015 and 2014, respectively. The effective tax rates for 2016 and 2015 included tax benefits from the repatriation of foreign earnings. The effective tax rate for 2016 included additional tax liabilities for unrecognized tax benefits related to the non-deductibility of interest expense in our foreign jurisdictions. The effective tax rate for 2014 included nondeductible penalties and losses that were nonrecurring.

Our foreign taxes result primarily from income earned in France and Switzerland. Many jurisdictions in which we operate, including Switzerland, Russia, the U.K. and Singapore, have statutory tax rates that are significantly lower than the U.S. statutory tax rate of 35%. Our effective tax rate may be impacted in the future, either favorably or unfavorably, by many factors including, but not limited to, changes to statutory tax rates, changes in tax laws or regulations, tax audits and settlements, and generation of tax credits.

Deferred tax assets and liabilities reflect the tax effects of losses, credits, and temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and the amounts used for income tax purposes. Significant components of deferred tax assets and liabilities are as follows (in millions):

	December 31,	
	2016	2015
Deferred tax assets:		
Bad debt, inventory and warranty accruals	$ 28.4	$ 26.3
Other post-employment benefits, vacation and other reserves	26.3	28.1
Tax credit and net operating loss carryforwards	96.4	80.2
Other	35.7	23.2
Total gross deferred tax assets	186.8	157.8
Valuation allowance	(66.4)	(58.3)
Total deferred tax assets	120.4	99.5
Deferred tax liabilities:		
Property and equipment	22.5	30.2
Investments and intangible assets	287.8	271.8
Total deferred tax liabilities	310.3	302.0
Net deferred tax liabilities	$ (189.9)	$ (202.5)

At December 31, 2016, Bio-Rad's international subsidiaries had combined net operating loss carryforwards of $141.3 million. Of these loss carryforwards, $140.8 million have no expiration date. We believe that it is more likely than not that the benefit from most of these net operating loss carryforwards will not be realized. We have provided a valuation allowance of $29.6 million relating to these net operating loss carryforwards.

At December 31, 2016, Bio-Rad had U.S. Federal net operating loss carryforwards of approximately $1.9 million as a result of acquisitions. These carryforwards are subject to limitation on their utilization and will expire between 2028 and 2033. At December 31, 2016, Bio-Rad had U.S. Federal foreign tax credit carryforwards of $27.6 million and U.S. Federal research tax credit carryforwards of $3.6 million, $0.4 million of which are subject to limitations on their utilization.

At December 31, 2016, Bio-Rad had approximately $53 million of California net operating loss carryforwards related to the acquisition of QuantaLife. We believe that it is more likely than not that the benefit from these net operating loss carryforwards will not be realized and have recorded a full valuation allowance against these losses. At December 31, 2016, Bio-Rad had a deferred tax asset of $25.9 million relating to California research tax credit carryforwards, including $2.0 million from the acquisition of QuantaLife, which may be carried forward indefinitely. Based on our judgment and consistent with prior years, we have recorded a full valuation allowance against the deferred tax asset.

We believe that it is more likely than not that certain of these deferred tax assets described above will not be realized in the foreseeable future. If or when recognized, the tax benefits relating to any reversal of the valuation allowance on deferred tax assets at December 31, 2016 will be recognized as a reduction of income tax expense.

Our income tax returns are audited by U.S. federal, state and foreign tax authorities. We are currently under examination by many of these tax authorities. The tax years open to examination include the years 2013 and forward for the U.S., and the years 2010 and forward for certain foreign jurisdictions, including France, Switzerland and Germany. There are differing interpretations of tax laws and regulations, and as a result, significant disputes may arise with these tax authorities involving issues of the timing and amount of deductions and allocations of income among various tax jurisdictions. We evaluate our exposures associated with our tax filing positions on a quarterly basis.

We record liabilities for unrecognized tax benefits related to uncertain tax positions. We do not believe any currently pending uncertain tax positions will have a material adverse effect on our consolidated financial statements, although an adverse resolution of one or more of these uncertain tax positions in any period may have a material impact on the results of operations for that period.

The following is a tabular reconciliation of the total amounts of unrecognized tax benefits (in millions):

	2016	2015	2014
Unrecognized tax benefits – January 1	$ 8.9	$ 14.2	$ 16.2
Additions to tax positions related to prior years	10.4	0.7	1.7
Reductions to tax positions related to prior years	—	(0.2)	(1.5)
Additions to tax positions related to the current year	1.4	1.5	1.6
Settlements	(2.4)	(0.5)	(0.4)
Lapse of statute of limitations	(2.3)	(6.3)	(2.6)
Currency translation	0.1	(0.5)	(0.8)
Unrecognized tax benefits – December 31	$ 16.1	$ 8.9	$ 14.2

Bio-Rad recognizes accrued interest and penalties related to unrecognized tax benefits as income tax expense. Related to the unrecognized tax benefits noted above, Bio-Rad has accrued interest and penalties of $11.5 million, $3.0 million and $3.8 million as of December 31, 2016, 2015 and 2014, respectively. The total unrecognized tax benefits and interest and penalties of $27.6 million in 2016 was partially offset by prepaid taxes of $12.7 million, for a net amount of $14.9 million.

As of December 31, 2016, based on the expected outcome of certain examinations or as a result of the expiration of statutes of limitation for certain jurisdictions, we believe that within the next twelve months it is reasonably possible that our previously unrecognized tax benefits could decrease by approximately $3.5 million. Substantially all such amounts will impact our effective income tax rate if recognized.

In general, it is our practice and intention to reinvest the earnings of our non-U.S. subsidiaries in their operations. As of December 31, 2016, Bio-Rad had not made a provision for U.S. or additional foreign withholding taxes on approximately $447 million of the excess of the amount for financial reporting over the tax basis of investments in foreign subsidiaries that are essentially permanent in duration. Generally, such amounts become subject to U.S. taxation upon remittance of dividends and under certain other circumstances. If these earnings were repatriated to the U.S., the deferred tax liability associated with these temporary differences would be approximately $47 million.

7. STOCKHOLDERS' EQUITY

Bio-Rad’s issued and outstanding stock consists of Class A Common Stock (Class A) and Class B Common Stock (Class B). Each share of Class A and Class B participates equally in the earnings of Bio-Rad, and is identical in all respects except as follows. Class A has limited voting rights. Each share of Class A is entitled to one tenth of a vote on most matters, and each share of Class B is entitled to one vote. Additionally, Class A stockholders are entitled to elect 25% of the Board of Directors and Class B stockholders are entitled to elect 75% of the directors. Cash dividends may be paid on Class A shares without paying a cash dividend on Class B shares but no cash dividend may be paid on Class B shares unless at least an equal cash dividend is paid on Class A shares. Class B shares are convertible at any time into Class A shares on a one-for-one basis at the option of the stockholder. The founders of Bio-Rad, the Schwartz family, collectively hold a majority of Bio-Rad’s voting stock. As a result, the Schwartz family is able to exercise significant influence over Bio-Rad.

Changes to Bio-Rad's issued common stock shares are as follows (in thousands):

	Class A Shares	Class B Shares
Balance at January 1, 2014	23,681	5,097
B to A conversions	5	(5)
Issuance of common stock	286	7
Balance at December 31, 2014	23,972	5,099
B to A conversions	18	(18)
Issuance of common stock	240	50
Balance at December 31, 2015	24,230	5,131
B to A conversions	13	(13)
Issuance of common stock	211	6
Balance at December 31, 2016	24,454	5,124

Treasury Shares

The Board of Directors has authorized the repurchase of up to $18.0 million of Bio-Rad's common stock, of which $3.3 million has yet to be repurchased in the open market as of December 31, 2016. The Amended and Restated Credit Agreement (Credit Agreement) limits our ability to repurchase our stock. In accordance with the terms of awards under the 2007 Incentive Award Plan, in June 2012, we withheld 122 shares of our Class A common stock and 917 shares of our Class B common stock to satisfy the minimum statutory tax obligations due upon the vesting of restricted stock of certain of our employees, which is considered a repurchase of our stock. All of the restricted stock vested as of December 31, 2013, and therefore we do not anticipate any repurchasing of shares for this purpose. We had no other repurchases of our stock during 2016 or 2015.

8. *ACCUMULATED OTHER COMPREHENSIVE INCOME*

Accumulated other comprehensive income included in our Consolidated Balance Sheets and Consolidated Statements of Changes in Stockholders' Equity consists of the following components (in millions):

	Foreign currency translation adjustments	Foreign other post-employment benefits adjustments	Net unrealized holding gains on available-for-sale investments	Total Accumulated other comprehensive income
Balances as of January 1, 2015	$ 71.2	$ (16.3)	$ 164.0	$ 218.9
Other comprehensive (loss) income, before reclassifications	(37.5)	(6.8)	325.4	281.1
Amounts reclassified from Accumulated other comprehensive income	—	1.1	(0.9)	0.2
Income tax effects	—	1.3	(119.4)	(118.1)
Other comprehensive (loss) income, net of income taxes	(37.5)	(4.4)	205.1	163.2
Balances as of December 31, 2015	$ 33.7	$ (20.7)	$ 369.1	$ 382.1
Other comprehensive (loss) income, before reclassifications	(32.4)	0.5	105.1	73.2
Amounts reclassified from Accumulated other comprehensive income	—	2.5	(0.8)	1.7
Income tax effects	—	(0.9)	(38.4)	(39.3)
Other comprehensive (loss) income, net of income taxes	(32.4)	2.1	65.9	35.6
Balances as of December 31, 2016	$ 1.3	$ (18.6)	$ 435.0	$ 417.7

The increases in 2016 and 2015 for net unrealized holding gains on available-for-sale investments were primarily from our ownership in the preferred shares of Sartorius.

The amounts reclassified out of Accumulated other comprehensive income into the Consolidated Statements of Income, with presentation location, were as follows:

	Income before taxes impact (in millions): December 31,		
Components of Comprehensive income	2016	2015	Location
Amortization of foreign other post-employment benefit items	$ (2.5)	$ (1.1)	Selling, general and administrative expense
Net holding gains on available for sale investments	$ 0.8	$ 0.9	Other (income) expense, net

Reclassification adjustments are calculated using the specific identification method.

9. SHARE-BASED COMPENSATION/STOCK OPTION AND PURCHASE PLANS

Description of Share-Based Compensation Plans

We believe our share-based compensation plans align the interests of our employees with those of our shareholders.

Stock Option and Award Plans
We have two stock option plans for officers and certain other employees: the 2003 Stock Option Plan (2003 Plan) and the 2007 Incentive Award Plan (2007 Plan). The 2003 Plan authorized the grant of incentive stock options and non-qualified stock options to employees. The 2007 Plan authorizes the grant of stock options, restricted stock, restricted stock units, stock appreciation rights and other types of equity awards to employees. We no longer grant stock option grants under the 2003 Plan. Since 2007, all share-based compensation grants have been from the 2007 Plan. A total of 2,250,360 shares have been reserved for issuance of equity awards under the 2007 Plan and may be of either Class A or Class B common stock as specified within the plan. At December 31, 2016, there were 587,509 shares available to be granted in the future.

Under the above plans, Class A and Class B options are granted at prices not less than fair market value of the underlying common stock on the date of grant. Generally, options granted have a term of 10 years and vest in increments of 20% per year over a five-year period on the yearly anniversary date of the grant. Stock awards issued under the 2007 Plan generally vest in increments of 20% per year over a five-year period on the yearly anniversary date of the grant.

Employee Stock Purchase Plans
Our 2011 Employee Stock Purchase Plan (2011 ESPP) provides that eligible employees may contribute up to 10% of their compensation up to $25,000 annually toward the quarterly purchase of our Class A common stock. The employees' purchase price is 85% of the lesser of the fair market value of the stock on the first business day or the last business day of each calendar quarter.

The 2011 ESPP includes two components: a Code Section 423 Component that we intend to qualify as an "employee stock purchase plan" under Section 423 of the U.S. Internal Revenue Code of 1986, as amended (the "Code") and a Non-423 Component, which authorizes the grant of purchase rights that does not qualify as an "employee stock purchase plan" under Section 423 of the Code. We have authorized the sale of 600,000 shares of Class A common stock under the 2011 ESPP.

Share-Based Compensation Expense

Included in our share-based compensation expense is the cost related to stock option grants, ESPP stock purchases and restricted stock unit awards. Share-based compensation expense is allocated to Cost of goods sold, Research and development expense, and Selling, general and administrative expense in the Consolidated Statements of Income.

For 2016, 2015 and 2014, we recognized share-based compensation expense of $19.7 million, $17.0 million and $14.9 million, respectively. We did not capitalize any share-based compensation expense in inventory.

For options and awards, we amortize the fair value on a straight-line basis. All stock compensation awards are amortized over the requisite service periods of the awards, which are generally the vesting periods.

Stock Options

The following table summarizes stock option activity:

	Shares	Weighted-Average Exercise Price	Weighted-Average Remaining Contractual Term (in years)	Aggregate Intrinsic Value (in millions)
Outstanding, January 1, 2014	629,643	$ 78.72		
Granted	54,000	$ 119.71		
Exercised	(91,387)	$ 63.66		
Forfeited/expired	(10,450)	$ 100.29		
Outstanding, December 31, 2014	581,806	$ 84.50		
Granted	40,500	$ 139.56		
Exercised	(195,221)	$ 61.29		
Forfeited/expired	(380)	$ 62.47		
Outstanding, December 31, 2015	426,705	$ 100.36		
Granted	45,000	$ 159.37		
Exercised	(15,285)	$ 80.70		
Forfeited/expired	(6,850)	$ 127.65		
Outstanding, December 31, 2016	449,570	$ 106.52	5.15	$ 34.1
Vested and expected to vest, December 31, 2016	437,350	$ 105.39	5.04	$ 33.6
Exercisable, December 31, 2016	314,330	$ 93.78	3.80	$ 27.8

Intrinsic value for stock options is defined as the difference between the current market value and the exercise price. The total intrinsic value on the date of exercise of stock options exercised during 2016, 2015 and 2014 was approximately $1 million, $13 million and $5 million, respectively. The total grant date fair value of options vested during 2016, 2015 and 2014 was $2.1 million, $2.2 million and $2.1 million, respectively.

Cash received from stock options exercised during 2016, 2015 and 2014 was $1.2 million, $2.9 million and $5.8 million, respectively. The actual tax benefit realized for the tax deductions from stock options exercised totaled $6.0 million, $9.3 million and $5.3 million in 2016, 2015 and 2014, respectively.

As of December 31, 2016, there was $4.9 million of total unrecognized compensation cost from stock options. This amount is expected to be recognized in the future over a weighted-average period of approximately 3 years.

The weighted-average fair value of stock options granted was estimated using a Black-Scholes option-pricing model with the following weighted-average assumptions:

	Year Ended December 31,		
	2016	2015	2014
Expected volatility	21%	23%	25%
Risk-free interest rate	1.35%	1.90%	2.35%
Expected life (in years)	7.4	7.7	8.7
Expected dividend	—	—	—
Weighted-average fair value of options granted	$ 42.40	$ 42.74	$ 43.96

Volatility is based on the historical volatilities of our common stock for a period equal to the stock option's expected life. The risk-free interest rate is based on the U.S. Treasury yield curve in effect at the time of the grant. The expected life represents the number of years that we estimate, based primarily on historical experience, that the options will be outstanding prior to exercise. We do not anticipate paying any cash dividends in the future and therefore use an expected dividend yield of zero.

Restricted Stock Units

Restricted stock units, which are rights to receive shares of company stock, were granted from 2009 through 2016 under the 2007 Plan. The fair value of a restricted stock unit is the market value as determined by the closing price of the stock on the day of grant.

The following table summarizes restricted stock unit activity:

	Restricted Stock Units	Weighted-Average Grant-Date Fair Value	Weighted-Average Remaining Contractual Term (in years)	Aggregate Intrinsic Value (in millions)
Outstanding, January 1, 2014	375,430	$ 105.44		
Granted	145,695	$ 119.56		
Vested	(107,557)	$ 98.52		
Forfeited	(36,203)	$ 108.17		
Outstanding, December 31, 2014	377,365	$ 112.60		
Granted	177,110	$ 139.56		
Vested	(113,347)	$ 107.62		
Forfeited	(28,706)	$ 116.19		
Outstanding, December 31, 2015	412,422	$ 125.30		
Granted	193,025	$ 159.32		
Vested	(117,203)	$ 119.33		
Forfeited	(39,422)	$ 129.80		
Outstanding, December 31, 2016	448,822	$ 141.09	2.16	$ 81.8

The total grant date fair value of restricted stock units vested in 2016, 2015 and 2014 was $14.0 million, $12.2 million and $10.6 million, respectively. As of December 31, 2016, there was approximately $46.8 million of total unrecognized compensation cost related to restricted stock units. This amount is expected to be recognized over a remaining weighted-average period of approximately 4 years.

Employee Stock Purchase Plans

The fair value of the employees' purchase rights under the 2011 ESPP was estimated using a Black-Scholes model with the following weighted-average assumptions:

	Year Ended December 31,		
	2016	2015	2014
Expected volatility	20%	18%	15%
Risk-free interest rate	0.26%	0.02%	0.04%
Expected life (in years)	0.25	0.25	0.25
Expected dividend	—	—	—
Weighted-average fair value of purchase rights	$27.36	$25.08	$21.88

The major assumptions are primarily based on historical data. Volatility is based on the historical volatilities of our common stock for a period equal to the expected life of the purchase rights. The risk-free interest rate is based on

the U.S. Treasury yield curve in effect at the time of the grant. We do not anticipate paying any cash dividends in the future and therefore use an expected dividend yield of zero.

We sold 93,605 shares for $11.5 million, 96,634 shares for $10.8 million and 102,222 shares for $10.2 million under the 2011 ESPP to employees in 2016, 2015 and 2014, respectively. At December 31, 2016, 96,121 shares remain authorized and available for issuance under the 2011 ESPP.

We currently issue new shares to satisfy stock option exercises, restricted stock issuances and ESPP stock purchases.

10. OTHER INCOME AND EXPENSE, NET

Other (income) expense, net includes the following components (in millions):

	Year Ended December 31,		
	2016	2015	2014
Interest and investment income	$ (14.7)	$ (10.1)	$ (13.5)
Net realized gains on investments	(0.8)	(1.6)	—
Other-than-temporary impairment losses on investments	0.6	0.6	0.4
Miscellaneous other (income) expense items, net	—	—	0.1
Other (income) expense, net	$ (14.9)	$ (11.1)	$ (13.0)

Other-than-temporary impairment losses on investments were recorded in 2016, 2015 and 2014 on certain of our available-for-sale investments and a certain equity investment in light of the continuing declines in their market prices at that time.

11. SUPPLEMENTAL CASH FLOW INFORMATION

The reconciliation of net income to net cash provided by operating activities is as follows (in millions):

	Year Ended December 31,		
	2016	2015	2014
Net income	$ 28.1	$ 113.1	$ 88.8
Adjustments to reconcile net income to net cash provided by operating activities			
Depreciation and amortization	142.9	131.8	149.9
Share-based compensation	19.7	17.0	14.9
(Gains) losses on dispositions of securities	(0.2)	(1.0)	0.3
Losses on dispositions of fixed assets	0.6	0.3	0.4
Excess tax benefits from share-based compensation	(1.5)	(3.6)	(1.3)
Changes in fair value of contingent consideration	(0.4)	(5.6)	(1.4)
Decrease (increase) in accounts receivable, net	12.5	(39.0)	11.1
(Increase) decrease in inventories, net	(57.1)	(54.2)	5.8
(Increase) decrease in other current assets	(6.6)	0.1	(5.7)
Increase (decrease) in accounts payable and other current liabilities	30.1	28.6	(9.9)
Increase in income taxes payable	10.7	12.7	20.4
Decrease in deferred income taxes	(51.4)	(6.4)	(6.3)
Decrease in other long term assets	12.7	0.3	3.6
Increase (decrease) in other long term liabilities	8.3	(12.2)	(1.3)
Impairment losses on goodwill and long-lived assets	62.3	—	—
Other	5.7	4.3	4.0
Net cash provided by operating activities	$ 216.4	$ 186.2	$ 273.3
Non-cash investing activities:			
Purchased intangible assets	$ —	$ —	$ 0.2
Purchased marketable securities and investments	$ 0.6	$ 2.2	$ —

12. COMMITMENTS AND CONTINGENT LIABILITIES

Rents and Leases

Rental expense under operating leases was $44.4 million, $45.0 million and $46.9 million in 2016, 2015 and 2014, respectively. Leases are principally for facilities and automobiles. We had no sublease income.

Annual future minimum lease payments at December 31, 2016 under operating leases are as follows: 2017 - $42.1 million; 2018 - $32.1 million; 2019 - $24.7 million; 2020 - $20.4 million; and 2021 and beyond - $38.8 million.

Deferred Profit Sharing Retirement Plan

We have a profit sharing plan covering substantially all U.S. employees. Contributions are made at the discretion of the Board of Directors. Bio-Rad has no liability other than for the current year's contribution. Contribution expense was $15.1 million, $14.7 million and $13.7 million in 2016, 2015 and 2014, respectively.

Other Post-Employment Benefits

In several foreign locations we are statutorily required to provide a lump sum severance or termination indemnity to our employees. Under these plans, the vested benefit obligation at December 31, 2016 and 2015 was $68.0 million and $68.6 million, respectively, and has been included in Accrued payroll and employee benefits and Other long-term liabilities in the Consolidated Balance Sheets. Most plans are not required to be funded, and as such, there is no trust or other device used to accumulate assets to settle these obligations. However, some of these plans require funding based on local laws in which there is a trust or other device used to accumulate assets to assist in settling these obligations.

Purchase Obligations

As of December 31, 2016, we had obligations that have been recognized on our balance sheet of $142.9 million, which include purchases of goods and services that are enforceable and legally binding to Bio-Rad and that specify all significant terms and exclude agreements that are cancelable without penalty. These obligations also include other post-employment benefits in some of our foreign locations as indicated above.

The annual future fixed and determinable portion of our purchase obligations that have been recognized on our balance sheet as of December 31, 2016 are as follows: 2017 - $34.3 million, 2018 - $7.3 million, 2019 - $3.1 million, 2020 - $2.5 million, 2021 - $1.6 million and after 2021 - $94.1 million.

As of December 31, 2016, we had purchase obligations that have not been recognized on our balance sheet of $35.0 million, which include agreements to purchase goods or services that are enforceable and legally binding to Bio-Rad and that specify all significant terms and exclude agreements that are cancelable without penalty.

The annual future fixed and determinable portion of our purchase obligations that have not been recognized on our balance sheet as of December 31, 2016 are as follows: 2017 - $17.5 million, 2018 - $5.0 million, 2019 - $3.5 million, 2020 - $3.5 million, 2021 - $5.5 million and after 2021 - $0 million.

Letters of Credit/Guarantees

In the ordinary course of business, we are at times required to post letters of credit/guarantees. The letters of credit/guarantees are issued by financial institutions to guarantee our obligations to various parties. We were contingently liable for $5.4 million of standby letters of credit/guarantees with financial institutions as of December 31, 2016.

Contingent Consideration

During the first quarter of 2016, we recognized a contingent consideration liability upon our acquisition of a new high performance analytical flow cytometer platform from Propel. At the acquisition date, the contingent consideration was based on a probability-weighted income approach related to the achievement of sales milestones, ranging from 39% to 20% for the calendar years 2017 through 2020. The sales milestones could potentially range from $0 to an unlimited amount through December 31, 2020. The fair value of the contingent consideration as of the acquisition date was $23.3 million, after the effects of a calculation revision that were reflected in the fourth quarter of 2016. The contingent consideration was recognized at its estimated fair value of $25.4 million as of December 31, 2016.

In 2014, we recognized a contingent consideration liability upon our acquisition of GnuBIO, Inc. The contingent consideration for the milestones was valued at $10.7 million at the acquisition date based on assumptions regarding the probability of achieving the milestones, with such amounts discounted to present value. The Level 3 contingent consideration was revalued to a fair value of $10.0 million as of December 31, 2016 and 2015.

In 2012, we recognized a contingent consideration liability for certain milestones of $44.6 million upon our acquisition of a new cell sorting system from Propel. Since 2012, we have paid $28.9 million upon reaching the milestones and have reduced the valuation of the milestones by $12.6 million to its estimated fair value of $3.1 million as of December 31, 2016. The remaining liability was paid in February 2017.

Concentrations of Labor Subject to Collective Bargaining Agreements

At December 31, 2016, approximately seven percent of Bio-Rad's approximately 3,300 U.S. employees were covered by a collective bargaining agreement, which will expire on November 7, 2019. Many of Bio-Rad's non-U.S. full-time employees, especially in France, are covered by collective bargaining agreements.

13. LEGAL PROCEEDINGS

On January 23, 2015, the City of Riviera Beach General Employees' Retirement System filed a shareholder derivative lawsuit in the Superior Court of California, Contra Costa County, against three of our current directors and one former director. We are also named as a nominal defendant. In the complaint, the plaintiff alleges that our directors breached their fiduciary duty of loyalty by failing to ensure that we had sufficient internal controls and systems for compliance with the Foreign Corrupt Practices Act ("FCPA"); that we failed to provide adequate training on the FCPA; and that based on these actions, the directors have been unjustly enriched. Purportedly seeking relief on our behalf, the plaintiff seeks an award of restitution and unspecified damages, costs and expenses (including attorneys' fees). On April 23, 2015, we and the individual defendants filed a demurrer requesting dismissal of the complaint in this case. The demurrer was heard on August 6, 2015, and the Court granted the demurrer for failure to make a demand on our Board of Directors on August 17, 2015, but provided leave to amend. On September 4, 2015, the plaintiff filed an amended complaint and simultaneously served a litigation demand letter on our Board of Directors ("Board") via its counsel in this action. The letter demanded that we investigate and bring appropriate legal action against certain individuals, including the defendants in the City of Riviera Beach case and six current and former employees. The plaintiff also moved for a temporary stay in the proceedings, purportedly to enable the Board to respond to the demand. The Board formed a Demand Review Committee to respond to the demand. On February 24, 2016, the Demand Review Committee reported to the Board that it had concluded its investigation and unanimously determined that it is not in the best interests of the Company and its stockholders to pursue litigation against any individuals named in the City of Riviera Beach's litigation demand letter. On October 6, 2015, we and the individual defendants filed a second demurrer, seeking to dismiss the case for failure to make a timely pre-suit demand. The case was stayed pending mediation. The caption is City of Riviera Beach General Employees' Retirement System v. Schwartz et al., Case No. C-15-00140. The lawsuit and demand letter are referred to collectively as the "California Action".

On August 13, 2015 and August 18, 2015, respectively, each of International Brotherhood of Electrical Workers Local 38 Pension Fund and Wayne County Employees' Retirement System filed a stockholder derivative complaint in the Delaware Court of Chancery against four of our current directors and one former director. We are named as a nominal defendant in the complaints. The complaints allege that the defendants failed to cause us to develop internal controls sufficient to ensure our compliance with the FCPA. The plaintiffs assert claims for breach of fiduciary duty and unjust enrichment and request an award of the damages we sustained as a result of the alleged violations, among other relief. The two lawsuits were consolidated on August 27, 2015. The case was stayed pending mediation. The caption of the consolidated case is In re Bio-Rad Laboratories, Inc. Stockholder Litigation, Consol. C.A. No. 11387-VCN (Del. Ch.). The cases filed in the Delaware Court of Chancery, together with the California Action, are referred to collectively as the "Derivative Actions".

The parties filed a Stipulation dated November 4, 2016 with the Superior Court of California for Contra Costa County that sets forth the terms of a proposed settlement of the Derivative Actions. The proposed settlement includes the dismissal with prejudice of all claims asserted in the Derivative Actions, an agreed-upon set of revised corporate procedures, and no monetary payment other than an award of attorneys' fees and costs to the plaintiffs' counsel. We and the other defendants do not admit any liability or fault in connection with the proposed settlement. On December 22, 2016 the Superior Court of California for Contra Costa County issued an order granting preliminary approval of this proposed settlement. Pursuant to the order, the Court will hold a hearing for final approval of the settlement on March 2, 2017, and any objections to the settlement were required to be filed in writing with the Court on or before February 15, 2017.

On May 27, 2015, our former general counsel, Sanford S. Wadler, filed a lawsuit in the U.S. District Court, Northern District of California, against us and four of our current directors and one former director. The plaintiff's suit alleged whistleblower retaliation in violation of the Sarbanes-Oxley Act and the Dodd-Frank Act for raising FCPA-related concerns. Mr. Wadler also alleged wrongful termination in violation of public policy, non-payment of wages and waiting time penalties in violation of the California Labor Code. The plaintiff sought back pay, compensatory damages for lost wages, earnings, retirement benefits and other employee benefits, compensation for mental pain and anguish and emotional distress, waiting time penalties, punitive damages, litigation costs (including attorneys' fees) and reinstatement of employment. On July 28, 2015 we filed a motion to dismiss the plaintiff's complaint and specifically requested dismissal of the claims alleged against us under the Dodd-Frank Act and California Labor Code 1102.5 and the claims against the directors under the Sarbanes-Oxley Act and the Dodd-Frank Act. On October 23, 2015, the District Court granted our motion with respect to the alleged violations of the Sarbanes-Oxley Act against all the director defendants except Norman Schwartz with prejudice. The Court denied our motion to dismiss the claims under the Dodd-Frank Act as against both us and the director defendants. The parties engaged in mediation of the case on April 19, 2016 and on September 14, 2016. The mediations did not result in a settlement. The trial commenced on January 17, 2017 and concluded on February 6, 2017. Mr. Wadler was awarded $10.92 million, plus prejudgment interest of $141,608, post-judgment interest, and Mr. Wadler's litigation costs, expert witness fees, and reasonable attorneys' fees as approved by the Court. We have provided for the judgment, interest and Mr. Wadler's litigation costs. We are considering an appeal of the judgment.

Bio-Rad received three notices of violations from the Bay Area Air Quality Management District ("District"). The District alleges that we operated three (3) power generation units without appropriate monitoring and recordkeeping and exceeded permissible levels of emissions during those operations. We are cooperating with the District and are investigating the allegations. No formal proceeding has been initiated by the District.

We are also party to various other claims, legal actions and complaints arising in the ordinary course of business. We cannot at this time reasonably estimate a range of exposure, if any, of the potential liability with respect to these matters. While we do not believe, at this time, that any ultimate liability resulting from any of these other matters will have a material adverse effect on our results of operations, financial position or liquidity, we cannot give any assurance regarding the ultimate outcome of these other matters and their resolution could be material to our operating results for any particular period, depending on the level of income for the period.

14. SEGMENT INFORMATION

Bio-Rad is a multinational manufacturer and worldwide distributor of its own life science research products and clinical diagnostics products. We have two reportable segments: Life Science and Clinical Diagnostics. These reportable segments are strategic business lines that offer more than 8,000 different products and services and require different marketing strategies. We do not disclose quantitative information about our different products and services as it is impractical to do so based primarily on the numerous products and services that we sell and the global markets that we serve.

The Life Science segment develops, manufactures, sells and services reagents, apparatus and instruments used for biological research. These products are sold to university and medical school laboratories, pharmaceutical and biotechnology companies, food testing laboratories and government and industrial research facilities.

The Clinical Diagnostics segment develops, manufactures, sells and services automated test systems, informatics systems, test kits and specialized quality controls for the healthcare market. These products are sold to reference laboratories, hospital laboratories, state newborn screening facilities, physicians' office laboratories, transfusion laboratories and insurance and forensic testing laboratories.

Other Operations include the remainder of our Analytical Instruments segment.

Segment results are presented in the same manner as we present our operations internally to make operating decisions and assess performance. The accounting policies of the segments are the same as those described in Significant Accounting Policies (see Note 1). Segment profit or loss includes an allocation of corporate expense based upon sales and an allocation of interest expense based upon accounts receivable and inventories. The difference between total segment allocated interest expense, depreciation and amortization, and capital expenditures and the corresponding consolidated amounts is attributable to our corporate headquarters. Segments are expected to manage only assets completely under their control. Accordingly, segment assets include primarily accounts receivable, inventories and gross machinery and equipment. Goodwill balances have been included in corporate for segment reporting purposes.

Information regarding industry segments at December 31, 2016, 2015, and 2014 and for the years then ended is as follows (in millions):

		Life Science	Clinical Diagnostics	Other Operations
Segment net sales	2016	$ 730.7	$ 1,323.3	$ 14.2
	2015	695.0	1,310.4	14.0
	2014	728.3	1,432.3	14.4
Allocated interest expense	2016	$ 6.4	$ 15.5	$ —
	2015	6.1	15.4	0.1
	2014	5.5	15.9	0.1
Depreciation and amortization	2016	$ 31.7	$ 80.5	$ —
	2015	30.7	77.8	0.1
	2014	33.2	95.8	—
Segment (loss) profit	2016	$ (19.2)	$ 57.0	$ 0.9
	2015	(0.7)	152.4	0.7
	2014	(14.7)	167.1	1.2
Segment assets	2016	$ 381.4	$ 918.0	$ 4.9
	2015	390.5	878.3	4.4
Capital expenditures	2016	$ 14.3	$ 67.1	$ —
	2015	8.2	51.3	0.1

Net corporate operating expense consists of receipts and expenditures that are not the primary responsibility of segment operating management and therefore are not allocated to the segments for performance assessment by our chief operating decision maker. In 2014, this included the accrual of $20.1 million associated with the U.S. Securities and Exchange Commission and Department of Justice investigations relating to the U.S. Foreign Corrupt Practices Act, for which a final settlement was reached in the fourth quarter of 2014. The following reconciles total segment profit to consolidated income before taxes (in millions):

	Year Ended December 31,		
	2016	2015	2014
Total segment profit	$ 38.7	$ 152.4	$ 153.6
Foreign exchange losses	(4.5)	(10.2)	(9.3)
Net corporate operating, interest and other expense, net not allocated to segments	(7.5)	(7.5)	(25.7)
Other income (expense), net	14.9	11.1	13.0
Consolidated income before taxes	$ 41.6	$ 145.8	$ 131.6

The following reconciles total segment assets to consolidated total assets (in millions):

	December 31,	
	2016	2015
Total segment assets	$ 1,304.3	$ 1,273.2
Cash and other current assets	980.3	926.9
Property, plant and equipment, net, excluding segment specific gross machinery and equipment	81.6	46.1
Goodwill, net	477.1	495.9
Other long-term assets	1,007.2	967.6
Total assets	$ 3,850.5	$ 3,709.7

The following presents net sales to external customers by geographic region based primarily on the location of the use of the product or service (in millions):

	Year Ended December 31,		
	2016	2015	2014
Europe	$ 742.2	$ 763.7	$ 901.7
Pacific Rim	427.1	392.2	417.5
United States	770.6	735.0	704.9
Other (primarily Canada and Latin America)	128.3	128.5	150.9
Total net sales	$ 2,068.2	$ 2,019.4	$ 2,175.0

The following presents Property, plant and equipment, net, Other investments and other assets, excluding deferred income taxes, by geographic region based upon the location of the asset (in millions):

	December 31,	
	2016	2015
Europe	$ 221.1	$ 204.4
Pacific Rim	16.1	15.1
United States	1,084.7	962.6
Other (primarily Canada and Latin America)	12.3	9.1
Total Property, plant and equipment, net, Other investments and other assets, excluding deferred income taxes	$ 1,334.2	$ 1,191.2

15. RESTRUCTURING COSTS

For the year ended December 31, 2016, we recorded $12.5 million related to restructuring actions that include the elimination or relocation of various positions. These actions are generally intended to streamline and focus our efforts and more properly align our cost structure with projected future revenue streams.

The following table summarizes the activity of our restructuring reserves for severance (in millions):

	Life Science	Clinical Diagnostics	Total
Balance at December 31, 2015	$ —	$ —	$ —
Charged to expense	4.1	7.6	11.7
Adjustment to expense	0.3	0.5	0.8
Cash payments	(1.0)	(2.0)	(3.0)
Foreign currency translation gains	(0.2)	(0.3)	(0.5)
Balance at December 31, 2016	$ 3.2	$ 5.8	$ 9.0

In May 2016, management announced that it will take certain actions in our Europe geographic region designed to better align expenses to our revenue and gross margin profile and position us for improved operating performance. These actions, aligned with creation and evolution of our organization structure and coordinated with the implementation of our global single instance ERP platform, are expected to be incurred through 2019. As a result, we recorded approximately $12.5 million in restructuring charges related to severance and other employee benefits for the year ended December 31, 2016, of which $9.0 million is anticipated to be paid through 2019. The liability of $9.0 million as of December 31, 2016 encompassed a short-term liability of $6.4 million and a long-term liability of $2.6 million. The amounts recorded were reflected in Cost of goods sold of $2.1 million, and in Selling, general and administrative expense of $10.4 million in the Consolidated Statements of Income for the year ended December 31, 2016. The amounts adjusted were primarily for additional positions identified for elimination, partially offset by employees finding other positions within Bio-Rad or leaving prematurely.

16. QUARTERLY FINANCIAL DATA (UNAUDITED)

Summarized quarterly financial data for 2016 and 2015 are as follows (in millions, except per share data):

	First Quarter	Second Quarter	Third Quarter	Fourth Quarter
2016				
Net sales	$ 471.2	$ 516.8	$ 508.7	$ 571.5
Gross profit	264.0	280.2	279.5	314.4
Net income (loss)	12.3	18.0	18.4	(20.6)
Basic earnings (loss) per share	$ 0.42	$ 0.61	$ 0.63	$ (0.70)
Diluted earnings (loss) per share	$ 0.42	$ 0.61	$ 0.62	$ (0.70)
2015				
Net sales	$ 472.8	$ 506.1	$ 470.0	$ 570.6
Gross profit	270.1	279.6	263.5	308.5
Net income	17.8	28.4	17.4	49.5
Basic earnings per share	$ 0.61	$ 0.98	$ 0.59	$ 1.69
Diluted earnings per share	$ 0.61	$ 0.97	$ 0.59	$ 1.68

Note: As a result of the net loss for the three months ended December 31, 2016, all potentially issuable common shares have been excluded from the diluted shares used in the computation of earnings per share as their effect was anti-dilutive.

17. SUBSEQUENT EVENT

On February 15, 2017, we acquired all the issued and outstanding stock of RainDance Technologies, Inc. (RainDance) for approximately $87 million including certain assumed net liabilities. Cash payments at closing were $82.9 million. The acquisition will be included in our Life Science segment's results of operations from the acquisition date and will be accounted for as a business combination. The amount of acquisition-related costs was minimal as Bio-Rad primarily represented itself during the acquisition process. The goodwill to be recorded will not be deductible for income tax purposes.

We are presently unable to report the purchase price allocation or the evaluation of the transaction, as more time is needed to complete the information transfer from the seller and include all information into a valuation of individual assets and liabilities.

RainDance's foundational intellectual property portfolio and product lines encompass a wide range of biological reactions in droplets, with potential applications in life science research and clinical research. These genomic tools provide ultra-sensitive detection of genetic variations in cancer as well as inherited and infectious diseases, enabling research in areas such as non-invasive liquid biopsy. We believe that RainDance's droplet-based solutions will extend our reach into next-generation sequencing applications and strengthen our position in the area of Droplet Digital™ PCR, offering customers with solutions for a wide range of nucleic acid detection applications.

ITEM 9. CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE

Not applicable.

ITEM 9A. CONTROLS AND PROCEDURES

(a) Evaluation of Disclosure Controls and Procedures

We maintain "disclosure controls and procedures," as such term is defined in Rules 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934, as amended ("Exchange Act"), that are designed to ensure that information required to be disclosed by us in reports that we file or submit under the Exchange Act is recorded, processed, summarized, and reported within the time periods specified in Securities and Exchange Commission rules and forms, and that such information is accumulated and communicated to our management, including our Chief Executive Officer ("CEO") and Chief Financial Officer ("CFO"), as appropriate, to allow for timely decisions regarding required disclosure. In designing and evaluating our disclosure controls and procedures, management recognized that disclosure controls and procedures, no matter how well conceived and operated, can provide only reasonable, not absolute, assurance that the objectives of the disclosure controls and procedures are met. Additionally, in designing disclosure controls and procedures, our management necessarily was required to apply its judgment in evaluating the cost-benefit relationship of possible disclosure controls and procedures. The design of any disclosure controls and procedures also is based in part upon certain assumptions about the likelihood of future events, and there can be no assurance that any design will succeed in achieving its stated goals under all potential future conditions.

Subject to the limitations noted above, our management, with the participation of our CEO and CFO, has evaluated the effectiveness of the design and operation of our disclosure controls and procedures as of the end of the year covered by this Annual Report on Form 10-K. Based on that evaluation, the CEO and CFO have concluded that, as of such date, our disclosure controls and procedures were effective to meet the objective for which they were designed and operate at the reasonable assurance level.

(b) Management's Report on Internal Control Over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting for the Company as defined in Rule 13a-15(f) or 15d-15(f) of the Exchange Act. Internal control over financial reporting is a process designed 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, and includes those policies and procedures that: (i) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of our assets; (ii) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that our receipts and expenditures are being made only in accordance with authorizations of our management and directors; and (iii) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of our assets that could have a material effect on our financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

Our management assessed the effectiveness of the Company's internal control over financial reporting as of December 31, 2016 using the criteria established in Internal Control - Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission ("COSO"). Based on this assessment and those criteria, management concluded that our internal control over financial reporting was effective as of December 31, 2016. Our internal control over financial reporting has been audited by KPMG LLP, an independent registered public accounting firm, as stated in their report, which appears in Part II, Item 8 of this Form 10-K.

ITEM 9B. OTHER INFORMATION

None.

PART III.

ITEM 10. DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE

Part of the information required to be furnished pursuant to this item is incorporated by reference from portions of Bio-Rad's definitive proxy statement to be mailed to stockholders in connection with our 2017 annual meeting of stockholders (the "2017 Proxy Statement") under "Election of Directors," "Committees of the Board of Directors" and "Section 16(a) Beneficial Ownership Reporting Compliance."

Bio-Rad's Board of Directors has determined that Mr. Louis Drapeau is an "audit committee financial expert," as defined in Item 407(d)(5) of Regulation S-K. Mr. Drapeau is also an "independent" director, as determined in accordance with the independence standards set forth in Rule 10A-3 under the Securities Exchange Act of 1934, as amended, and Section 303A.02 of the New York Stock Exchange (NYSE) Listed Company Manual.

We have adopted a code of business ethics and conduct that applies to our principal executive officer, principal financial officer, controller and all other employees and is available through the Corporate Governance section of our website (www.bio-rad.com). We will also provide a copy of the code of ethics to any person, without charge, upon request, by writing to us at "Bio-Rad Laboratories, Inc., Investor Relations, 1000 Alfred Nobel Drive, Hercules, CA 94547." We intend to satisfy any disclosure requirement under Item 5.05 of Form 8-K regarding an amendment to, or waiver from, a provision of the code of ethics by posting such information on the Corporate Governance section of our website (www.bio-rad.com).

ITEM 11. EXECUTIVE COMPENSATION

The information required to be furnished pursuant to this item is incorporated by reference from portions of the 2017 Proxy Statement under "Compensation Discussion and Analysis," "Summary Compensation Table," "Grants of Plan-Based Awards," "Outstanding Equity Awards at Fiscal Year-End," "Option Exercises and Stock Vested Table," "Pension Benefits," "Nonqualified Defined Contribution and Other Nonqualified Deferred Compensation Plans," "Potential Payments on Termination or Change in Control," "Director Compensation" and "Compensation Committee Interlocks and Insider Participation." In addition, the information from a portion of the 2017 Proxy Statement under "Compensation Committee Report" is incorporated herein by reference and furnished on this Form 10-K and shall not be deemed "filed" for purposes of Section 18 of the Securities and Exchange Act of 1934, nor shall it be deemed incorporated by reference in any filing under the Securities Act of 1933.

ITEM 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDER MATTERS

Part of the information required to be furnished pursuant to this item is incorporated by reference from a portion of the 2017 Proxy Statement under "Principal and Management Stockholders."

Equity Compensation Plan Information as of December 31, 2016

Plan category	Number of securities to be issued upon exercise of outstanding options, warrants and rights	Weighted-average exercise price of outstanding options, warrants and rights	Number of securities remaining available for future issuance under equity compensation plans (excluding securities reflected in column (a))	
	(a)	(b)(3)	(c)	
Equity compensation plans approved by security holders (1)	898,392	$ 106.52	683,630	(2)
Equity compensation plans not approved by security holders	—	—	—	
Total	898,392	$ 106.52	683,630	

(1) Consists of the 2003 Stock Option Plan of Bio-Rad Laboratories, Inc., the Bio-Rad Laboratories, Inc. 2007 Incentive Award Plan, and the Bio-Rad Laboratories, Inc. 2011 Employee Stock Purchase Plan.

(2) Consists of 587,509 shares available under the Bio-Rad Laboratories, Inc. 2007 Incentive Award Plan and 96,121 shares available under the Bio-Rad Laboratories, Inc. 2011 Employee Stock Purchase Plan.

(3) Excludes Restricted Stock Units.

ITEM 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS, AND DIRECTOR INDEPENDENCE

The information required to be furnished pursuant to this item is incorporated by reference from portions of the 2017 Proxy Statement under "Transactions with Related Persons" and "Committees of the Board of Directors."

ITEM 14. PRINCIPAL ACCOUNTANT FEES AND SERVICES

The information required to be furnished by this item is incorporated by reference from a portion of the 2017 Proxy Statement under "Report of the Audit Committee of the Board of Directors."

PART IV.

ITEM 15. EXHIBITS AND FINANCIAL STATEMENT SCHEDULES

(a)1 Index to Financial Statements – See Item 8 of Part II of this report “Financial Statements and Supplementary Data" on page 40 for a list of financial statements.

2 Schedule II Valuation and Qualifying Accounts

All other financial statement schedules are omitted because they are not required or the required information is included in the consolidated financial statements or the notes thereto.

3 Index to Exhibits

The exhibits listed in the accompanying Index to Exhibits on pages 90 through 92 of this report are filed or incorporated by reference as part of this report.

BIO-RAD LABORATORIES, INC.
SCHEDULE II - VALUATION AND QUALIFYING ACCOUNTS
Years Ended December 31, 2016, 2015, and 2014
(in thousands)

Allowance for doubtful accounts receivable

	Balance at Beginning of Year	Additions Charged to Costs and Expenses	Deductions	Balance at End of Year
2016	$ 24,418	$ 3,785	$ (4,836)	$ 23,367
2015	$ 27,973	$ 8,783	$ (12,338)	$ 24,418
2014	$ 32,471	$ 7,164	$ (11,662)	$ 27,973

Valuation allowance for current and long-term deferred tax assets*

	Balance at Beginning of Year	Additions Charged (Credited) to Income Tax Expense	Deductions	Balance at End of Year
2016	$ 58,277	$ 8,126	$ —	$ 66,403
2015	$ 58,615	$ (338)	$ —	$ 58,277
2014	$ 64,011	$ (5,396)	$ —	$ 58,615

*2014 is the only year presented that has current and long-term valuation allowances for deferred tax assets due to the adoption of ASU 2015-17 in 2015 on a prospective basis. Therefore, for the years 2016 and 2015, the valuation allowance is long-term for deferred tax assets.

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) 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.

BIO-RAD LABORATORIES, INC.

By: /s/ Christine A. Tsingos
Christine A. Tsingos
Executive Vice President, Chief Financial Officer

Date: February 28, 2017

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of the registrant and in the capacities and on the dates indicated.

Principal Executive Officer:		
/s/ Norman Schwartz	Chairman of the Board, President and Chief Executive Officer	February 28, 2017
(Norman Schwartz)		
Principal Financial Officer:		
/s/ Christine A. Tsingos	Executive Vice President,	
(Christine A. Tsingos)	Chief Financial Officer	February 28, 2017
Principal Accounting Officer:		
/s/ James R. Stark	Vice President, Corporate Controller	February 28, 2017
(James R. Stark)		
Other Directors:		
/s/ Louis Drapeau	Director	February 28, 2017
(Louis Drapeau)		
/s/ Robert M. Malchione	Director	February 28, 2017
(Robert M. Malchione)		
/s/ Joel McComb	Director	February 28, 2017
(Joel McComb)		
/s/ Deborah J. Neff	Director	February 28, 2017
(Deborah J. Neff)		
/s/ Alice N. Schwartz	Director	February 28, 2017
(Alice N. Schwartz)		

BIO-RAD LABORATORIES, INC.
INDEX TO EXHIBITS ITEM 15(a)3

Exhibits 32.1 and 32.2 are furnished herewith and should not be deemed to be "filed under the Securities Exchange Act of 1934."

Exhibit No.	
3.1	Restated Certificate of Incorporation of Bio-Rad Laboratories, Inc. (1)
3.1.1	Certificate of Amendment to Restated Certificate of Incorporation of Bio-Rad Laboratories, Inc. (1)
3.2	Amended and Restated Bylaws of Bio-Rad Laboratories, Inc. (2)
4.1	Indenture dated as of December 9, 2010 for 4.875% Senior Notes due 2020 among Bio-Rad Laboratories, Inc., as Issuer, and Wilmington Trust FSB, as Trustee. (3)
10.1	Credit Agreement, dated as of June 20, 2014, by and among Bio-Rad Laboratories, Inc., the lenders referred to therein, JPMorgan Chase Bank, N.A., as administrative agent, Union Bank of California, N.A. and Wells Fargo Bank, N.A. as co-syndication agents, and Bank of America, N.A. and HSBC Bank USA, National Association, as co-documentation agents. (4)
10.2	Bio-Rad Laboratories, Inc. 2011 Employee Stock Purchase Plan. (5)
10.3	Employees' Deferred Profit Sharing Retirement Plan (Amended and Restated effective January 1, 1997). (6)
10.4	2003 Stock Option Plan. (7)
10.4.1	Amendment to the 2003 Stock Option Plan of Bio-Rad Laboratories, Inc. (8)
10.4.2	Second Amendment to the 2003 Stock Option Plan of Bio-Rad Laboratories, Inc., dated March 1, 2012. (9)
10.5	2007 Incentive Award Plan. (10)
10.5.1	Restricted Stock Unit Award Grant Notice and Restricted Stock Unit Award Agreement under the 2007 Incentive Award Plan. (11)
10.5.2	Amendment to the Bio-Rad Laboratories, Inc. 2007 Incentive Award Plan. (12)
10.6	Form of Indemnification Agreement. (13)
10.7	Settlement Agreement and General Release. (14)
10.8	Non-Prosecution Agreement effective November 3, 2014 between the U.S. Department of Justice and Bio-Rad Laboratories, Inc. (15)
10.9	Securities and Exchange Commission Order effective November 3, 2014. (15)

Exhibit No.	
21.1	Listing of Subsidiaries.
23.1	Consent of Independent Registered Public Accounting Firm.
31.1	Certification of Chief Executive Officer Required by Rule 13a-14(a) (17CFR 240.13a-14(a)).
31.2	Certification of Chief Financial Officer Required by Rule 13a-14(a) (17CFR 240.13a-14(a)).
32.1	Certification of Chief Executive Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
32.2	Certification of Chief Financial Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
101.INS	The instance document does not appear in the interactive data file because its XBRL tags are embedded within the inline XBRL document.
101.SCH	XBRL Taxonomy Extension Schema Document
101.CAL	XBRL Taxonomy Extension Calculation Linkbase Document
101.DEF	XBRL Taxonomy Extension Definition Linkbase Document
101.LAB	XBRL Taxonomy Extension Labels Linkbase Document
101.PRE	XBRL Taxonomy Extension Presentation Linkbase Document

(1) Incorporated by reference to the Exhibits to Bio-Rad's Form 10-K filing for the fiscal year ended December 31, 2010.

(2) Incorporated by reference to the Exhibit to Bio-Rad's Form 8-K filing, dated March 31, 2014.

(3) Incorporated by reference to Exhibit 4.1 to Bio-Rad's Form 8-K filing, dated December 9, 2010.

(4) Incorporated by reference to the Exhibits to Bio-Rad's 8-K filing, dated June 26, 2014.

(5) Incorporated by reference to Exhibit 10.9 to Bio-Rad's June 30, 2011 Form 10-Q filing, dated August 4, 2011.

(6) Incorporated by reference to Exhibit 10.6 to Bio-Rad's September 30, 1997 Form 10-Q filing, dated November 13, 1997.

(7) Incorporated by reference to Exhibit 10.7 to Bio-Rad's March 31, 2003 Form 10-Q filing, dated May 13, 2003.

(8) Incorporated by reference to Exhibit 10.7.1 to Bio-Rad's March 31, 2007 Form 10-Q filing, dated May 4, 2007.

(9) Incorporated by reference to Exhibit 10.1 to Bio-Rad's June 30, 2012 Form 10-Q filing, dated August 9, 2012.

(10) Incorporated by reference to Exhibit 4.1 to Bio-Rad's Form S-8 filing, dated July 30, 2007.

(11) Incorporated by reference to Exhibit 10.8.1 to Bio-Rad's September 30, 2009 Form 10-Q filing, dated November 4, 2009.

(12) Incorporated by reference to Exhibit 10.1 to Bio-Rad's March 31, 2014 Form 10-Q filing, dated May 8, 2014.

(13) Incorporated by reference to Exhibit 10.1 to Bio-Rad's Form 8-K filing, dated June 28, 2011.

(14) Incorporated by reference to Exhibit 10.1 to Bio-Rad's Form 10-Q filing, dated November 7, 2014.

(15) Incorporated by reference to the Exhibits to Bio-Rad's Form 10-K filing for the fiscal year ended December 31, 2014.

OFFICERS

Norman Schwartz
President and
Chief Executive Officer

John Goetz
Executive Vice President,
Chief Operating Officer

Giovanni Magni
Executive Vice President,
Chief Strategy Officer

Christine Tsingos
Executive Vice President,
Chief Financial Officer

Michael Crowley
Executive Vice President,
Global Commercial Operations

Timothy S. Ernst
Executive Vice President,
General Counsel & Secretary

Shannon Hall
Executive Vice President,
President, Life Science Group

John Hertia
Executive Vice President,
President,
Clinical Diagnostics Group

Ronald Hutton
Vice President, Treasurer

James Stark
Vice President,
Corporate Controller

OTHER SENIOR EXECUTIVES

Lee Boyd
Senior Vice President,
Commercial Manager,
Asia Pacific

John Bussell
Senior Vice President,
Global Operations,
Clinical Diagnostics

Colleen Corey
Senior Vice President,
Global Human Resources

Diane Dahowski
Senior Vice President,
Global Technology & Systems

Scott Jenest
Executive Vice President,
Global Supply Chain

Leo Kaabi
Senior Vice President,
Commercial Manager,
Europe, Middle East,
Africa (EMEA)

Simon May
Senior Vice President,
Commercial Manager,
Americas

Annette Tumolo
Executive Vice President,
General Manager,
Digital Biology Group

ANNUAL MEETING

The Annual Meeting of Stockholders will be held on Tuesday, April 25, 2017 at 4 PM, Pacific Time, at the Corporate Offices of the Company in Hercules, California.

Bio-Rad will provide without charge to each stockholder, upon written request to the Secretary, a copy of its 2016 Annual Report filed with the Securities and Exchange Commission on Form 10-K.

TRANSFER AGENT

Computershare
211 Quality Circle, Suite 210
College Station, Texas 77845
800-962-4284
www.computershare.com

AUDITORS

KPMG LLP

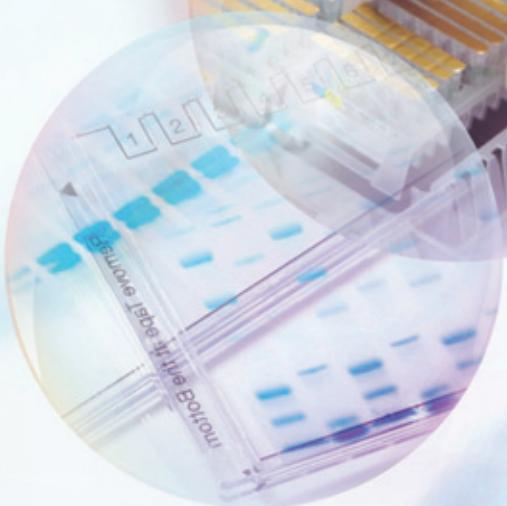
COMMON STOCK

Traded on the
New York Stock Exchange

Class A Common Stock
Symbol **BIO**

Class B Common Stock
Symbol **BIOb**

BIO
LISTED
NYSE



Bio-Rad Laboratories
1000 Alfred Nobel Drive
Hercules, California 94547
510-724-7000
www.bio-rad.com