

VERMILLION, INC.  
Form PRE 14A  
April 27, 2018  
UNITED STATES  
SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

SCHEDULE 14A

Proxy Statement Pursuant to Section 14(a) of the  
Securities Exchange Act of 1934 (Amendment No. )

Filed by the  
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Vermillion, Inc.

(Name of Registrant as Specified in its Charter)

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PRELIMINARY PROXY STATEMENT – SUBJECT TO COMPLETION

VERMILLION, INC.

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NOTICE OF ANNUAL MEETING OF STOCKHOLDERS  
TO BE HELD ON JUNE 21, 2018

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Dear Stockholder:

NOTICE IS HEREBY GIVEN that the 2018 Annual Meeting of Stockholders of Vermillion, Inc., a Delaware corporation (the “Company”), will be held on Thursday, June 21, 2018 at 8:00 a.m. (Eastern Daylight Time), at the Company’s office located at 35 Nutmeg Drive, Suite 260, Trumbull, Connecticut 06611, for the following purposes:

1. To elect as directors the five nominees named in the proxy statement and recommended by the Board of Directors to serve for a one-year term expiring at the 2019 annual meeting of stockholders and until their successors are elected and qualified (Proposal 1);
2. To ratify the terms and issuance of the Company’s Series B Convertible Preferred Stock, and to approve the issuance of such number of shares of the Company’s common stock issuable upon full conversion of the Series B Convertible Preferred Stock, including shares issuable pursuant to customary anti-dilution provisions (the “Issuance Proposal”) (Proposal 2);
3. To hold an advisory vote to approve the compensation of the Company’s named executive officers as disclosed in the proxy statement (Proposal 3);
4. To approve an amendment to the Vermillion, Inc. Second Amended and Restated 2010 Stock Incentive Plan (the “2010 Plan”) (Proposal 4);
5. To ratify the selection of BDO USA, LLP as the Company’s independent registered public accounting firm for the year ending December 31, 2018 (Proposal 5); and
6. To transact such other business as properly may be brought before the Annual Meeting or any adjournment or postponement thereof.

The foregoing items of business are more fully described in the proxy statement accompanying this Notice.

The Board of Directors of the Company has fixed the close of business on April 25, 2018 as the record date for determining the stockholders entitled to receive notice of, and to vote at, the Annual Meeting or any adjournment or postponement thereof.

**YOUR VOTE IS IMPORTANT. IN ORDER TO ENSURE YOUR REPRESENTATION AT THE ANNUAL MEETING, YOU ARE URGED TO SIGN AND DATE THE ENCLOSED PROXY CARD AND RETURN IT IN THE ENCLOSED PRE-ADDRESSED POSTAGE-PAID ENVELOPE AS SOON AS POSSIBLE.**

All stockholders are cordially invited to attend the Annual Meeting in person. Even if you plan to attend the Annual Meeting in person, you are urged to sign, date and return the enclosed proxy card in order to ensure your representation at the Annual Meeting. Any stockholder attending the Annual Meeting may vote in person even if that stockholder has returned a proxy.

Austin, Texas                      By Order of the Board of Directors  
\_\_\_\_\_, 2018

Valerie B. Palmieri  
President, Chief Executive Officer and Director

Important Notice Regarding the Availability of Proxy Materials for the Stockholder Meeting to be held on June 21, 2018

The proxy statement and the Company's Annual Report on Form 10-K for the year ended December 31, 2017 are also available at <http://www.vermillion.com>.

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VERMILLION, INC.

12117 Bee Caves Road, Building Three, Suite 100  
Austin, Texas 78738

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PROXY STATEMENT

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Annual Meeting of Stockholders to be Held on June 21, 2018

INFORMATION ABOUT THE ANNUAL MEETING AND VOTING

General

The enclosed proxy is solicited on behalf of the Board of Directors (the “Board”) of Vermillion, Inc., a Delaware corporation (“Vermillion, the “Company,” “we,” “us” or “our”), for use at our 2018 annual Mmeeting of Stockholders (the “Annual Meeting”) to be held on Thursday, June 21, 2018 at 8:00 a.m. (Eastern Daylight Time). The Annual Meeting will be held at the Company’s office located at 35 Nutmeg Drive, Suite 260, Trumbull, Connecticut 06611. The Notice of the Annual Meeting, this proxy statement, the accompanying proxy card and our Annual Report on Form 10-K for the year ended December 31, 2017 will first be mailed to stockholders on or about \_\_\_\_\_, 2018, and are also available online at <http://www.vermillion.com>. Our principal executive offices are located at 12117 Bee Caves Road, Building Three, Suite 100, Austin, Texas 78738, and our telephone number is (512) 519-0400.

Record Date; Outstanding Shares

Only stockholders of record at the close of business on April 25, 2018 (the “Record Date”) are entitled to notice of and to vote at the Annual Meeting. At the close of business on the Record Date, there were 70,039,338 shares of our common stock issued and outstanding and entitled to vote. A complete list of the stockholders entitled to vote at the Annual Meeting will be available for examination by any stockholder for any purpose germane to the Annual Meeting at the Annual Meeting and during ordinary business hours at our principal executive offices for a period of 10 days before the Annual Meeting.

Revocability of Proxies

Any proxy given pursuant to this solicitation may be revoked by the person giving it at any time before its use by delivering to us at our principal executive offices (12117 Bee Caves Road, Building Three, Suite 100, Austin, Texas 78738, Attention: Investor Relations) either a written notice of revocation or a duly executed proxy card bearing a later date, or by attending the Annual Meeting and voting in person. Attendance at the Annual Meeting will not, by itself, revoke a proxy. For shares held in street name by beneficial owners, holders may change their votes by submitting a later dated voting instruction form to their brokers, banks or other nominees or, if they have obtained legal proxies from their brokers, banks or other nominees giving them the right to vote their shares at the Annual Meeting, by attending the Annual Meeting and voting in person.

Solicitation of Proxies

This solicitation of proxies is made by us and all related costs will be borne by us. In addition, we will reimburse brokerage firms and other persons representing beneficial owners of shares for their expenses in forwarding solicitation material to such beneficial owners. Proxies may also be solicited by certain of our directors, officers and employees, without additional compensation, personally or by electronic or regular mail, telephone or facsimile.

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## Voting

Each share of common stock outstanding on the Record Date is entitled to one vote for each director to be elected and one vote on each other matter to be voted on. Stockholders do not have cumulative voting rights.

When a proxy card is properly dated, executed and returned, the shares represented by such proxy card will be voted at the Annual Meeting in accordance with the instructions of the stockholder as set forth on the proxy card. If no specific instructions are given, the shares will be voted in accordance with the Board's recommendation, as follows:

- "FOR" the election of directors (Proposal 1);
- "FOR" the approval of the Issuance Proposal (Proposal 2);
- "FOR" the approval of the compensation of our Named Executive Officers (as such term is defined under "Compensation Discussion and Analysis" below) (Proposal 3);
- "FOR" the approval of an amendment to the 2010 Plan (Proposal 4); and
- "FOR" the ratification of the selection of BDO USA, LLP as our independent registered public accounting firm for the year ending December 31, 2018 (Proposal 5).

In addition, shares will be voted at the discretion of the individuals designated as proxies on the proxy card on such other business as may properly come before the Annual Meeting or any adjournment or postponement thereof.

Quorum; Required Votes; Abstentions; Broker Non-Votes

## Quorum

Holders of a majority of the outstanding shares entitled to vote must be present, in person or by proxy, at the Annual Meeting in order to have the required quorum for the transaction of business. If the shares present, in person or by proxy, at the Annual Meeting do not constitute the required quorum, the meeting may be adjourned to a subsequent date for the purpose of obtaining a quorum. When a proxy card is properly dated, executed and returned, the shares represented by such proxy card are counted in determining whether a quorum exists, even if the shares are voted "ABSTAIN" or "WITHHOLD." Broker non-votes (as defined below) are also counted for purposes of determining a quorum.

## Required Votes

The proposal to elect directors (Proposal 1) requires the affirmative vote of a plurality of the shares present at the Annual Meeting in person or by proxy and entitled to vote. This means that the five nominees receiving the highest number of "FOR" votes will be elected as directors.

The proposals to approve the Issuance Proposal (Proposal 2), the compensation of our Named Executive Officers (Proposal 3) and an amendment to the 2010 Plan (Proposal 4) and to ratify the selection of BDO USA, LLP as our independent registered public accounting firm (Proposal 5) each require the affirmative vote of the holders of a majority of the shares present at the Annual Meeting either in person or by proxy and entitled to vote.

## Abstentions

Shares voted "WITHHOLD" from the proposal to elect directors (Proposal 1) will have no effect on the outcome of the vote with respect to the election of directors.

Shares voted "ABSTAIN" will have the same effect as votes "AGAINST" the proposals to approve the Issuance Proposal (Proposal 2), the compensation of our Named Executive Officers (Proposal 3) and an amendment to the 2010 Plan (Proposal 4) and to ratify the selection of BDO USA, LLP as our independent registered public accounting firm (Proposal 5).





## Broker Non-Votes

If a stockholder holds shares in the name of a broker, bank or nominee (this is called “street name”), the broker, bank or nominee will send to the stockholder a voting instruction form with this proxy statement. The broker, bank or nominee is not permitted to vote on the stockholder’s behalf on certain matters that are not “routine,” such as the proposals regarding the election of the director nominees and the approval of executive compensation, unless the stockholder provides specific instructions by completing and returning the voting instruction form (these uninstructed votes are termed “broker non-votes”). Broker non-votes are not treated as entitled to vote on these proposals and, therefore, are not counted for purposes of determining the number of votes cast with respect to these particular proposals.

Broker non-votes will have no effect on the outcome of the votes with respect to the proposals to elect the director nominees (Proposal 1), to approve the Issuance Proposal (Proposal 2), to approve the compensation of our Named Executive Officers (Proposal 3) or to approve an amendment to the 2010 Plan (Proposal 4).

The proposal to ratify the selection of BDO USA, LLP as our independent registered public accounting firm (Proposal 5) is considered a routine matter, and the broker, bank or nominee is allowed to vote the shares in street name, without receiving specific instructions from stockholders on how to vote the shares on that proposal.

## Attendance at the Annual Meeting

Attendance at the Annual Meeting will be limited to stockholders as of the Record Date. Each stockholder may be asked to present valid picture identification, such as a driver’s license or passport. Stockholders holding stock in brokerage accounts or by a bank or other nominee may be required to show a brokerage statement or account statement reflecting stock ownership as of the Record Date.

## Householding of Proxy Materials

Some banks, brokers and other nominee record holders may be “householding” our proxy statements and annual reports. This means that only one copy of our proxy statement and annual report to stockholders may have been sent to multiple stockholders in your household. We will promptly deliver a separate copy of either document to you if you call or write to us at our principal executive offices, 12117 Bee Caves Road, Building Three, Suite 100, Austin, Texas 78738, Attn: Investor Relations, telephone: (512) 519-0400. If you want to receive separate copies of the proxy statement or annual report to stockholders in the future, or if you are receiving multiple copies and would like to receive only one copy per household, you should contact your bank, broker or other nominee, or you may contact us at the above address or telephone number.

## Submission of Stockholder Proposals for the 2019 Annual Meeting

In order to be eligible for inclusion in the Company’s proxy statement and form of proxy for the 2019 Annual Meeting, stockholder proposals must comply with Rule 14a-8 promulgated by the Securities and Exchange Commission (the “SEC”) under the Securities Exchange Act of 1934, as amended (the “Exchange Act”), and any other applicable rules. Rule 14a-8 requires that stockholder proposals be delivered to our principal executive offices no later than 120 days before the one-year anniversary of the release date of the previous year’s annual meeting proxy statement. Accordingly, if you wish to submit a proposal to be considered for inclusion in the proxy statement for our 2019 Annual Meeting, you must submit the proposal in writing to Vermillion, Inc., 12117 Bee Caves Road, Building Three, Suite 100, Austin, Texas 78738, Attention: Corporate Secretary. We must receive the proposal by \_\_\_\_\_, 2019 in order to consider it for inclusion in the proxy statement for our 2019 Annual Meeting.

Stockholder proposals and director nominations not included in our proxy statement for the 2019 Annual Meeting will not be eligible for presentation at the meeting unless they comply with the advance notice requirements set forth in our

Bylaws, including that the stockholder gives timely notice of the proposal or nomination in writing to our principal executive offices. To be timely, stockholder proposals and director nominations must be received by us not earlier than the 120th day nor later than the 90th day prior to the one-year anniversary of the previous year's annual meeting. Accordingly, proposals and nominations that are not received between February 21, 2019 and March 23, 2019 will not be voted on at the 2019 Annual Meeting. Our Bylaws contain provisions regarding

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information that must be set forth in a stockholder's notice or otherwise provided in connection with stockholder proposals and director nominations.

**YOUR VOTE IS EXTREMELY IMPORTANT, NO MATTER HOW MANY OR HOW FEW SHARES YOU OWN. PLEASE SIGN AND DATE THE ENCLOSED PROXY CARD AND RETURN IT TODAY IN THE ENCLOSED PRE-ADDRESSED POSTAGE-PAID ENVELOPE.**

If your shares are held in the name of a brokerage firm, bank, nominee or other institution, only it can sign a proxy card with respect to your shares and only upon specific instructions from you. Please return the enclosed proxy card to your broker or bank and contact the person responsible for your account to ensure that a proxy is voted on your behalf.

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## PROPOSAL 1: ELECTION OF DIRECTORS

Our Board of Directors currently consists of seven members and one vacant Board seat, with directors serving for a one-year term expiring at the 2018 annual meeting of our stockholders and until their successors are elected and qualified. As previously announced, Eric Varma, a current director of the Company, has notified the Company that he does not intend to stand for re-election at the Annual Meeting. In addition, Carl Severinghaus, also a current director of the Company, is not being nominated by the Board for re-election at the Annual Meeting.

The five persons named below, all of whom currently serve on our Board, have been nominated to serve on the Board until our 2019 annual meeting of stockholders and until their respective successors are elected and qualified. Directors will be elected by a plurality of the votes cast in the election of directors. The five nominees receiving the highest number of affirmative votes will be elected as directors. Stockholders may not vote for more than five nominees.

In evaluating the suitability of individual Board members, our Nominating and Corporate Governance Committee takes into account many factors such as general understanding of various business disciplines (e.g., marketing or finance), understanding of the Company's business environment, educational and professional background, judgment, integrity, ability to make independent analytical inquiries and willingness to devote adequate time to Board duties. The Board evaluates each individual in the context of the Board as a whole with the objective of retaining a group with diverse and relevant experience that can best perpetuate the Company's success and represent stockholder interests through sound judgment.

## Nominees for Director

Information regarding the nominees for the Board of Directors is set forth below. The Company has no reason to believe that the nominees would be unable or unwilling to serve as a director if elected. However, in the event that any of the nominees is unable to or declines to serve as a director at the time of the Annual Meeting, the proxies will be voted for any nominee who is designated by the Board to fill the vacancy.

Name	Age	Position with Vermillion
James S. Burns, D.L.S.	71	Chairman – Nominating and Governance Committee; Member – Compensation Committee
Veronica G.H. Jordan, Ph.D.	67	Chairman - Compensation Committee; Member - Audit Committee
Mr. James T. LaFrance	59	Chairman of the Board
Ms. Valerie B. Palmieri	56	President, Chief Executive Officer and Director
Mr. David R. Schreiber	58	Chairman - Audit Committee; Member – Nominating and Governance Committee

James S. Burns, D.L.S., age 71, has been our director since June 2005 and served as Chairman of the Board from September 2011 to March 2013. He is the Chair of our Nominating and Governance Committee and a member of our Compensation Committee. Dr. Burns served as Chairman of the Board and Executive Chairman, from 2014 to 2016, and as President and Chief Executive Officer, from 2009 to 2014, of Assurex Health, Inc., an informatics-based precision medicine company focused on treatment decision support products for patients with neuropsychiatric disorders. Prior to joining Assurex Health, Dr. Burns was the President and Chief Executive Officer of EntreMed, Inc. from June 2004 to December 2008, and a director from September 2004 to December 2008. Dr. Burns was a co-founder and, from 2001 to 2003, served as President and as Executive Vice President of MedPointe

Pharmaceuticals, a specialty pharmaceutical company that develops, markets and sells branded prescription pharmaceuticals. From 2000 to 2001, Dr. Burns served as a founder and Managing Director of MedPointe Capital Partners, a private equity firm that led a leveraged buyout to form MedPointe

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Pharmaceuticals. Previously, Dr. Burns was a founder, Chairman, President and Chief Executive Officer of Osiris Therapeutics, Inc., a biotech company developing therapeutic stem cell products for the regeneration of damaged or diseased tissue. Dr. Burns has also been Vice Chairman of HealthCare Investment Corporation and a founding General Partner of Healthcare Ventures L.P., a venture capital partnership specializing in forming companies building around new pharmaceutical and biotechnology products; Group President at Becton, Dickinson and Company, a multidivisional biomedical products company; and Vice President and Partner at Booz & Company, Inc., a multinational consulting firm. Dr. Burns is a director of AFT Pharmaceuticals Ltd. (NZX/ASX:AFT), a specialty pharmaceutical company and Precera Bioscience (formerly Sano Informed Prescribing Inc.), specializing in patient-specific medication analyses. Dr. Burns previously served as a director of Symmetry Medical Inc. (formerly NYSE:SMA), a supplier of medical devices and orthopedic implants, and Symmetry Surgical Inc. (formerly Nasdaq:SSRG), a supplier of general and specialty surgical instruments. Dr. Burns received his B.S. and M.S. in Biological Sciences from the University of Illinois, M.B.A. from DePaul University, and D.L.S. from Georgetown University. He has also earned a Board Leadership Fellow certification from the National Association of Corporate Directors.

Our Board has determined that based upon Dr. Burns' extensive experience in the diagnostics industry, and current and prior board and management experience, he has the qualifications and skills to serve as a member of our Board and as a member of our Compensation Committee and Chair of our Nominating and Governance Committee.

Veronica G.H. Jordan, Ph.D., age 67, Dr. Jordan became a director of Vermillion in December 2014 and serves as the Chair of our Compensation Committee and a member of our Audit Committee. Since 2007 she has served as an advisor to companies developing novel healthcare products and services. Previously, from 2001 to 2006, she was President and Chief Executive Officer of Medelle Corporation, a medical device company in women's health. Prior to that, Dr. Jordan served for fourteen years in various executive positions at PAREXEL International Corporation.

Earlier, she held business leadership roles at Biogen and managed an R&D department for Baxter International. Dr. Jordan served as a director of Albany Molecular Research Inc. (formerly Nasdaq:AMRI) from 2006 to 2016 and is currently the Vice Chair for Royal Neighbors of America, a private life insurance company. She also currently serves on the boards of a number of not-for-profit organizations working to advance healthcare initiatives. She earned a B.Sc. in Biochemistry from Cambridge University and a Ph.D. in Biochemistry/Cell Biology from Oxford University. Dr. Jordan holds an Executive Masters Professional Director Certification from the American College of Corporate Directors.

Our Board of Directors has determined that based upon Dr. Jordan's extensive experience in the life sciences industry, including relevant experience as a current and prior director and as an executive officer, she has the qualifications and skills to serve as a member of our Board and as a member of our Audit Committee and Chair of our Compensation Committee.

James T. LaFrance, age 59, was appointed to our Board of Directors in December 2013 and was also appointed Chairman of our Board. Mr. LaFrance was initially designated as a director nominee pursuant to the Stockholders Agreement described under "Certain Relationships and Related Transactions" below. He also served as our President and Chief Executive Officer from April 2014 to December 2014. Mr. LaFrance has almost thirty years of diagnostic industry experience. From May 2012 to September 2013, Mr. LaFrance was head of digital pathology and acting Chief Executive Officer of Omnyx, LLC for GE Healthcare, a medical technology provider. From 2009 to 2011, Mr. LaFrance was the President and Chief Executive Officer of LaFrance Consulting, an independent consulting firm. Prior to that, Mr. LaFrance held a series of commercial, strategic marketing and business development leadership roles at Ventana Medical Systems, Inc. (now Roche Tissue Diagnostics), a provider of tissue-based diagnostic solutions, including general manager of their North American and International commercial organizations from 2001 to 2009. Prior to Ventana, Mr. LaFrance served in leadership roles in strategic marketing and business development at Bayer Diagnostics. He currently serves as a member of the boards of HTG Molecular, Inc., BioArray Genetics, Inc., Personal Genome Diagnostics, Inc. and Light Integra, Inc. He earned a Bachelor of Arts degree in Economics from the University of Connecticut and an M.B.A. from the University of Notre Dame.

Our Board of Directors has determined that based upon Mr. LaFrance's demonstrated executive-level management and commercial operations skills, as well as his prior role as our President and Chief Executive Officer

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and his prior board position, he has the qualifications and skills to serve as a member and the Chairman of our Board of Directors.

Valerie B. Palmieri, age 56, was appointed as our President and Chief Executive Officer on January 1, 2015 and was elected to our Board in June 2015. She first joined Vermillion as Chief Operating Officer in October 2014. Ms. Palmieri brings to Vermillion more than 30 years of experience in the diagnostic laboratory industry, serving in numerous sales, operations, and executive leadership positions for both laboratory service and consulting organizations.

From April 2009 to October 2014, Ms. Palmieri was the President and Chief Executive Officer of Momentum Consulting, LLC, a national consulting firm serving the life science and diagnostic laboratory industries. During her time at Momentum, Ms. Palmieri also served as CEO/President of two healthcare start-ups that resulted in a successful exit for one and won her recognition as one of the “Top 10 Entrepreneurs of Springboard Enterprises” for the other. Prior to that she spent six years as the National Vice President of Anatomic Pathology Operations with LabCorp, one of the largest public diagnostic laboratories in the world. LabCorp was the successor company to Dianon Systems, also a publicly traded company, where she served as Senior Vice President of Operations. She was a key leader in the sale of Dianon to LabCorp in 2003. Ms. Palmieri holds a Bachelor of Science degree in Medical Technology from Western Connecticut State University.

Our Board of Directors has determined that based upon Ms. Palmieri’s extensive experience in the life science and diagnostic laboratory industries, including relevant experience as our President and Chief Executive Officer and as an executive officer, she has the qualifications and skills to serve as a member of our Board of Directors.

David R. Schreiber, age 58, became a director of Vermillion in December 2014. He serves as the Chair of our Audit Committee since June 2016 and previously served as a member of our Audit Committee from December 2014 to January 2016. He is also a member of our Nominating and Governance Committee. Mr. Schreiber has held a variety of executive positions in the diagnostic laboratory industry for the past 27 years. For the last 15 years, Mr. Schreiber has consulted for private equity firms to assist with their due diligence efforts and served in various interim operating roles for targeted or existing portfolio companies. From 1986 to 1996, Mr. Schreiber was at Quest Diagnostics, initially in a variety of financial roles, his last position being Vice President and General Manager of Quest's Midwest Region, based in Chicago, Illinois. Following Quest, from 1996 to 2003, Mr. Schreiber was Senior Vice President and Chief Financial Officer of Dianon Systems, a publicly traded specialized pathology company, until Dianon was acquired by LabCorp. Mr. Schreiber was also a member of Dianon's Board of Directors. Following Dianon, Mr. Schreiber joined the Board of Directors of Specialty Labs, a publicly traded lab company focused on serving the esoteric needs of hospitals. Mr. Schreiber helped lead the turnaround of Specialty Labs which led to its successful sale to Ameripath/Welsh Carson. At the same time, Mr. Schreiber joined and previously served on the board of Nanogen, a publicly traded nanotechnology company and also began his consulting career. Mr. Schreiber received a B.S. in Finance and an M.B.A. from Northern Illinois University.

Our Board of Directors has determined that based upon Mr. Schreiber’s extensive experience in the life sciences industry, including relevant experience as a current and prior director and an executive officer and chief financial officer, he has the qualifications and skills to serve as a member of our Board of Directors, Chair of our Audit Committee and member of the Nominating and Governance Committee.

**THE BOARD OF DIRECTORS RECOMMENDS THAT YOU VOTE “FOR” THE ELECTION OF EACH DIRECTOR NOMINEE NAMED ABOVE.**



## CORPORATE GOVERNANCE

### Independence of the Board of Directors

The Board has affirmatively determined, after considering all relevant facts and circumstances, that each of James S. Burns, Veronica G.H. Jordan, James T. LaFrance, David R. Schreiber, Carl Severinghaus and Eric Varma is an independent director, as the term is currently defined under Nasdaq Listing Rule 5605(a)(2). Valerie Palmieri is not an independent director because she currently serves as our President and Chief Executive Officer.

### Board Leadership Structure

The Board believes that the leadership structure of the Board is a matter that should be evaluated and determined by the Board from time to time, based on the then-relevant facts and circumstances. The Board has chosen to separate the roles of Chief Executive Officer and Chairman of the Board. This enables our President and Chief Executive Officer, Ms. Valerie Palmieri, to focus on the day-to-day operation of our business while allowing Mr. James LaFrance, our Chairman of the Board, to focus on leadership of the Board. The Board believes that its current leadership structure best serves the objectives of the Board's oversight and management, the ability of the Board to carry out its roles and responsibilities on behalf of the stockholders, and the Company's overall corporate governance.

### Role of the Board in Risk Oversight

The Board is involved in oversight of risks that could affect the Company. This oversight is conducted primarily through committees of the Board, and particularly the Audit Committee and Nominating and Governance Committee, but the full Board has retained responsibility for general oversight of risks. The Board satisfies this responsibility through full reports by each committee chair regarding the committee's considerations and actions, as well as through regular reports directly from officers responsible for oversight of particular risks within the Company.

### Meetings of the Board of Directors

Our Board establishes overall policies and standards and reviews the performance of management. The Board held 20 meetings in 2017. Each director attended 75% or more of the aggregate number of meetings of the Board and the committees on which he or she served that were held during the period for which he or she was a director. Applicable Nasdaq listing standards require that the independent directors meet from time to time in executive session. In 2017, our independent directors met in regularly scheduled executive sessions at which only independent directors were present. It is our policy to request that all Board members attend the annual meeting of stockholders. We held our most recent annual meeting of stockholders on June 21, 2017 and all members of the Board standing for re-election attended the meeting.

### Audit Committee

The Audit Committee of the Board was established by the Board to oversee our corporate accounting and financial reporting processes, systems of internal control over financial reporting and the quality and integrity of our financial statements and reports. In addition, the Audit Committee oversees the qualification, independence and performance of our independent registered public accounting firm. The Audit Committee also recommends to the Board the appointment of our independent registered public accounting firm.

The Audit Committee is currently composed of three directors: Mr. Schreiber (Chairperson), Ms. Jordan and Mr. Severinghaus. Effective as of the Annual Meeting, Mr. Severinghaus will cease to serve on the Compensation Committee. The Audit Committee is governed by a written charter adopted by the Board. The Audit Committee charter can be found in the Investor Overview section of our website at <http://www.vermillion.com>. The Audit Committee met five times in 2017. The Board has determined that all members of our Audit Committee are

independent pursuant to applicable Nasdaq and SEC requirements. The Board has determined that Mr. Schreiber qualifies as an “audit committee financial expert,” as defined in applicable SEC rules. In making the determination that Mr. Schreiber qualifies as an “audit committee financial expert,” the Board made a qualitative assessment of

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Mr. Schreiber's level of knowledge and experience based on a number of factors, including his experience as the chief financial officer of other companies.

#### Compensation Committee

The Compensation Committee of the Board acts on behalf of the Board to review, adopt and oversee our compensation strategy, policies, plans and programs. The Compensation Committee reviews and recommends to the Board for approval the compensation (i.e., salary, bonus and stock-based compensation grants) and other terms of employment or service of our Chief Executive Officer and other executive officers, reviews with management our Compensation Discussion and Analysis for inclusion in our proxy statements and other SEC filings, and administers the 2010 Plan. The Compensation Committee has the authority to retain compensation consultants to assist in its evaluation of executive and director compensation, including the authority to approve the consultant's reasonable fees and other retention terms.

Our executive officers recommend to the Compensation Committee of the Board business performance targets and objectives and provide background information about the Company's underlying strategic objectives. Our Chief Executive Officer generally makes recommendations to the Compensation Committee regarding salary increases for other executive officers during the regular merit increase process. Our executive officers are not present or involved in deliberations concerning their own compensation.

The Compensation Committee is currently composed of three directors: Dr. Jordan (Chairman), Dr. Burns and Dr. Varma. Effective as of the Annual Meeting, Dr. Varma will cease to serve on the Compensation Committee. The Board has determined that the members of our Compensation Committee are independent pursuant to applicable Nasdaq and SEC requirements. The Compensation Committee has adopted a written charter that can be found in the Investor Overview section of our website at <http://www.vermillion.com>. The Compensation Committee met four times in 2017. The performance and compensation process and specific determinations of the Compensation Committee with respect to executive compensation for 2017 are described in greater detail in the "Compensation Discussion and Analysis" section of this proxy statement.

#### Compensation Committee Interlocks and Insider Participation

There were no compensation committee interlocks during 2017.

#### Nominating and Governance Committee

The Nominating and Governance Committee is responsible for identifying individuals qualified to serve as members of the Board, recommending to the Board nominees for election as our directors, and providing oversight with respect to corporate governance and ethical conduct.

Our Nominating and Governance Committee currently consists of Dr. Burns (Chairman) and Mr. Schreiber. The Board has determined that the members of our Nominating and Governance Committee are independent pursuant to applicable Nasdaq listing standards. The Nominating and Governance Committee has adopted a written charter that can be found in the Investor Overview section of our website at <http://www.vermillion.com>. The Nominating and Governance Committee met one time in 2017.

The information below describes the criteria and process that the Nominating and Governance Committee uses to evaluate candidates for selection to the Board.

#### Board Membership Criteria

The Nominating and Governance Committee is responsible for assessing the appropriate balance of experience, skills and characteristics required of directors. Nominees for director are selected on the basis of depth and breadth of experience, knowledge, integrity, ability to make independent analytical inquiries, understanding of our business environment, the willingness to devote adequate time to Board duties, the interplay of the candidate's experience and skills with those of other Board members, and the extent to which the candidate would be a desirable

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addition to the Board and any committees of the Board. Although there is no specific policy regarding diversity in identifying director nominees, both the Nominating and Governance Committee and the Board seek the talents and backgrounds that would be most helpful to us in selecting director nominees. In particular, the Nominating and Governance Committee, when recommending director candidates to the full Board for nomination, may consider whether a director candidate, if elected, assists in achieving a mix of Board members that represents a diversity of background and experience.

#### Process for Identifying and Evaluating Nominees

The Nominating and Governance Committee initiates the process for identifying and evaluating nominees to the Board by identifying a slate of candidates who meet the criteria for selection as nominees and have the specific qualities or skills being sought based on input from members of the Board, management and, if the Nominating and Governance Committee deems appropriate, a third-party search firm. Candidates are evaluated by the Nominating and Governance Committee on the basis of the factors described above under “Board Membership Criteria.” With respect to candidates for initial election to the Board, the Nominating and Governance Committee also reviews biographical information and qualifications and checks the candidates’ references. Qualified candidates are interviewed by at least one member of the Nominating and Governance Committee. Serious candidates meet, either in person or by telephone, with all members of the Nominating and Governance Committee and as many other members of the Board as practicable.

Using the input from interviews and other information obtained, the Nominating and Governance Committee evaluates which of the prospective candidates is qualified to serve as a director and whether the committee should recommend that the Board nominate, or elect to fill a vacancy with, a prospective candidate. Candidates recommended by the Nominating and Governance Committee are presented to the Board for selection as nominees to be presented for the approval of the stockholders or for election to fill a vacancy.

The Nominating and Governance Committee and/or the Board will consider nominees for director who are recommended by our stockholders, provided that written notice of any such recommendation is received by our Corporate Secretary within the timeframe established by our Bylaws with respect to director nominations by stockholders (see “Information About the Annual Meeting and Voting--Submission of Stockholder Proposals for the 2019 Annual Meeting”). All candidates for directors, including those who have been properly recommended or nominated by a stockholder, are evaluated using the criteria and process described above.

#### Strategy Committee

The Strategy Committee assists with the Company’s long-term mission, vision and strategic direction. The Strategy Committee is responsible for reviewing periodic reports from management with respect to Company strategy and/or related potential strategic transactions and providing recommendations to the Board regarding the same. The Strategy Committee also meets as needed to discuss the priorities of our Company, taking into consideration economic, consumer and other significant trends, as well as changes in our business. The Strategy Committee is currently composed of four directors: Mr. LaFrance (Chairman), Dr. Jordan, Mr. Schreiber and Dr. Varma. Effective as of the Annual Meeting, Dr. Varma will cease to serve on the Strategy Committee.

#### Code of Ethics

We have adopted the Vermillion, Inc. Code of Business Conduct and Ethics (the “Code of Ethics”) that applies to all of our officers, directors and employees. The Code of Ethics is available in the Investor Overview section of our website at <http://www.vermillion.com>. We will disclose on our website any waiver of, or amendment to, the Code of Ethics as required by applicable SEC and Nasdaq requirements.





## Stockholder Communications

Our stockholders may communicate directly with the Board of Directors or individual directors in writing, addressed to:

Board of Directors  
c/o Corporate Secretary  
Vermillion, Inc.  
12117 Bee Caves Road, Building Three, Suite 100  
Austin, Texas 78738

The Corporate Secretary will review each stockholder communication. The Corporate Secretary will forward to the entire Board (or to members of a committee thereof, if the communication relates to a subject matter clearly within that committee's area of responsibility) or to any individual director, as applicable, each communication that (a) relates to our business or governance, (b) is not offensive and is legible in form and reasonably understandable in content, and (c) does not merely relate to a personal grievance against us, a director, a member of our management, or our other employees, or to further a personal interest not shared by the other stockholders generally.

## MANAGEMENT

Set forth below is certain information about our current executive officers:

Name	Age	Positions
Valerie B. Palmieri	56	President and Chief Executive Officer
Fred Ferrara	50	Chief Operating Officer
Robert Beechey	55	Chief Financial Officer

Valerie B. Palmieri - Biographical information about Ms. Palmieri can be found under Proposal 1, Election of Directors.

Fred Ferrara joined Vermillion in April 2015 as our Chief Information Officer. In November 2016, Mr. Ferrara was named our Chief Operating Officer. Mr. Ferrara has spent 26 years designing industry-specific systems including application and database development in Information Technology, with the previous 20 years solely dedicated to diagnostics companies responsible for the creation of several state of the art products used across the industry. He has served in numerous leadership roles in Information Technology, Operations, and senior leadership capacities for diagnostic service organizations such as LabCorp and Dianon Systems from 1998 to 2006. Prior to that, Mr. Ferrara served as an independent information systems consultant in the healthcare and mobile application markets. In his most recent senior leadership role prior to joining the Company, Mr. Ferrara served as Chief Information Officer and SVP of Aurora Diagnostics' Anatomic Pathology Services Company, an anatomic pathology services provider, from 2006 to 2014.

Robert Beechey joined Vermillion in December 2017 as our Chief Financial Officer. Prior to joining the Company, Mr. Beechey spent three years with Q2 Solutions, a Quintiles Quest joint venture that provides clinical trial laboratory services. From 2016 to 2017, he served as Vice President and General Manager and, from 2015 to 2016, he served as Chief Financial Officer. From 2011 to 2015, Mr. Beechey served as Vice President of Quintiles Transnational Corporation, a research, clinical trial and pharmaceutical consulting services company that was acquired by Quintiles

IMS Inc. in 2016. He also spent four years with Thermo Fisher Scientific and over ten years with Eastman Kodak Company. Mr. Beechey received his Bachelors of Science in Economics from the Wharton School of the University of Pennsylvania, and his M.B.A. from Insead.

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## BOARD COMPENSATION

Outside directors (i.e., non-employee directors) are compensated for their service as (1) a member of the Board, (2) a member of any committee of the Board, and (3) a chair of any committee of the Board. As was the case in 2016, for 2017, we adopted a compensation program granting restricted stock units (“RSUs”) to outside directors other than the Chairman of the Board with a targeted value on the grant date equal to approximately \$60,000. RSUs granted to directors vest 50% on June 1, 25% on September 1 and 25% on December 1, subject to the director’s continued service through the vesting date. For the Chairman of the Board, if such person is an outside director, the targeted value on the grant date is approximately \$100,000. For 2017, outside directors, at their option, received 30% of compensation in cash in connection with their services as directors. Periodically, the Compensation Committee reviews and determines the adequacy of the compensation program for outside directors and, based upon the results of its review, the Compensation Committee will make recommendations regarding the compensation program for outside directors to the Board. For 2017, the Compensation Committee did not increase the value of director compensation as compared to 2016. During 2017, the outside directors were compensated as follows, with the RSU or RSU/cash awards being made as of March 23, 2017:

- the Chairman of the Board was awarded 32,407 RSUs and \$30,000;
- each other outside director received 19,444 RSUs and \$18,000;
- the chairperson of the Audit Committee received an additional 4,213 RSUs and \$3,900 and the other members of the Audit Committee each received an additional 1,944 RSUs and \$1,800;
- the chairperson of the Compensation Committee received an additional 2,917 RSUs and \$2,700 and the other members of the Compensation Committee each received an additional 1,296 RSUs and \$1,200;
- the chairperson of the Nominating and Governance Committee received an additional 1,944 RSUs and \$1,800 and the other members of the Nominating and Governance Committee each received an additional 1,296 RSUs and \$1,200; and
- the chairperson of the Strategy Committee received an additional 2,917 RSUs and \$2,700 and the other members of the Strategy Committee each received an additional 1,296 RSUs and \$1,200.

## 2017 Director Compensation Table

The table below presents the compensation earned by our outside directors for the year ended December 31, 2017.

Name	Fees Earned or Paid in		Stock Awards(1)	Total
	Cash			
James S. Burns	\$ 21,000	\$ 49,000		\$ 70,000
Veronica G.H. Jordan	23,700	55,300		79,000
James T. LaFrance	32,700	76,300		109,000
David R. Schreiber	24,300	56,700		81,000
Carl Severinghaus	19,800	46,200		66,000
Eric Varma(2)	—	—		—

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(1) Reflects the grant date fair value, calculated in accordance with Financial Accounting Standards Board Accounting Standards Codification Topic 718, Compensation-Stock Compensation, of RSUs granted in fiscal year 2017 by the Company under its Amended and Restated 2010 Stock Incentive Plan. The number of RSUs granted is determined by dividing the targeted grant value by a five day trailing average price of our common stock for the week prior to the date of grant of the RSUs. In 2017, the price and target value was fixed in March 2017 when the trailing average price per share of the Company's stock was \$2.16 per share.

(2) Dr. Varma waived his compensation for 2017.

## PROPOSAL 2: APPROVAL OF THE ISSUANCE PROPOSAL

Proposal to ratify the terms and issuance of our Series B Convertible Preferred Stock (the “Convertible Preferred Stock”), and to approve the issuance of such number of shares of our common stock issuable upon full conversion of the Convertible Preferred Stock, including shares issuable pursuant to customary anti-dilution provisions.

### Background

**The Offerings.** As previously announced, on April 17, 2018, we completed an underwritten public offering of 50,000 shares of our Convertible Preferred Stock a price to the public of \$100.00 per share (the “Preferred Stock Offering”). Pursuant to the Certificate of Designations, Preferences and Rights of Series B Convertible Preferred Stock of Vermillion, Inc. that we filed with the Secretary of State of the State of Delaware on April 16, 2018 (the “Certificate of Designations”), each share of Convertible Preferred Stock is initially convertible into 100 shares of our common stock automatically upon obtaining the approval of our stockholders sought by this proposal, reflecting an initial conversion price of \$1.00 per share, subject to customary anti-dilution adjustments.

Concurrently with the Preferred Stock Offering, we completed a separate underwritten public offering of 10,000,000 shares of our common stock at a price to the public of \$1.00 per share (the “Common Stock Offering” and, together with the Preferred Stock Offering, the “Offerings”). As part of the Common Stock Offering, we granted the underwriter a 30-day option to purchase up to an additional 1,500,000 shares of our common stock at the public offering price, less underwriting discounts and commissions, to cover over-allotments, if any.

Each of the Offerings was made pursuant to the Company’s Registration Statement on Form S-3 filed with the SEC on October 24, 2017, including the prospectus dated November 7, 2017 contained therein, as the same has been supplemented.

**Reasons for the Offerings.** Our Board of Directors determined that the Offerings were advisable and in the Company’s best interest. We estimate that the net proceeds to us from the Offerings, after deducting underwriting discounts and commissions and estimated offering expenses payable by us, were approximately \$13.6 million (or approximately \$15.0 million if the underwriter exercises its over-allotment option in full). We intend to use the net proceeds of the Offerings for working capital and general corporate purposes, including sales and marketing, portfolio expansion and general administrative expenses.

**Stockholder Approval Required.** Pursuant to the Certificate of Designations, we are required to hold a meeting of the holders of our common stock as promptly as practicable after the closing of the Preferred Stock Offering for the purpose of voting upon the approval of the full conversion of outstanding shares of Convertible Preferred Stock into shares of Company common stock. The conversion of the Convertible Preferred Stock will occur automatically upon obtaining the approval of our stockholders sought by this proposal. For more information regarding the reasons stockholder approval is required, please see below under “Reasons for Stockholder Approval.”

**The Holders of the Convertible Preferred Stock; Certain Interests.** According to Schedules 13D filed by the reporting persons with the SEC on April 17, 2018, the holders of the Convertible Preferred Stock are the Jack W. Schuler Living Trust, the Tanya Eva Schuler Trust, the Therese Heidi Schuler Trust, the Schuler GC 2010 Continuation Trust, Schuler Grandchildren LLC and the Tino Hans Schuler Trust. Jack W. Schuler is the sole trustee of the Jack W. Schuler Living Trust and, effective as of the closing of the Common Stock Offering, beneficially owned 19.99% of the issued and outstanding shares of our common stock, in addition to 39,619 shares of Convertible Preferred Stock. H. George Schuler is the sole trustee of the Tanya Eva Schuler Trust, the Therese Heidi Schuler Trust and the Schuler GC 2010 Continuation Trust and the manager of Schuler Grandchildren LLC and, effective as of the closing of the Common Stock Offering, beneficially owned 14.6% of the issued and outstanding shares of our common stock, in addition to 7,922 shares of Convertible Preferred Stock. Tino Hans Schuler is the sole trustee of the Tino Hans Schuler Trust and, effective as of the closing of the Common Stock Offering, beneficially owned 5.6% of the issued

and outstanding shares of our common stock, in addition to 2,459 shares of Convertible Preferred Stock.

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## Description of the Convertible Preferred Stock

The following is a summary of the Convertible Preferred Stock and the Certificate of Designations. The Certificate of Designations is attached hereto as Appendix A and is incorporated herein by reference. Stockholders are urged to carefully read the Certificate of Designations.

**Number.** A total of 50,000 shares of Convertible Preferred Stock are issued and outstanding.

**Conversion.** Each share of Convertible Preferred Stock will be automatically converted into shares of our common stock upon obtaining the approval of our stockholders sought by this proposal. The number of shares of our common stock into which each share of Convertible Preferred Stock is convertible is equal to the number obtained by dividing (i) the stated value of \$100.00 plus the amount of any accrued but unpaid dividends thereon by (ii) \$1.00, being the initial conversion price, subject to customary anti-dilution adjustments. This reflects an initial conversion rate of 100 shares of our common stock for each share of Convertible Preferred Stock.

**Liquidation.** The Convertible Preferred Stock will rank senior to our common stock with respect to distributions upon the Company's dissolution, liquidation or winding-up. In the event of the Company's dissolution, liquidation or winding-up, holders of each share of Convertible Preferred Stock will be entitled to, after provision for payment of all debts and liabilities of the Company in accordance with applicable law, before any distribution or payment is made with respect to any shares of our common stock, an amount equal to the greater of (i) the stated value per share of \$100.00, subject to customary anti-dilution adjustments, plus all accrued but unpaid dividends thereon and (ii) such amount as would be payable if such shares were converted into our common stock immediately prior to such dissolution, liquidation or winding-up.

**Voting.** Shares of Convertible Preferred Stock will generally have no voting rights, except as required by law and except that the consent of holders of the outstanding Convertible Preferred Stock will be required to (i) adversely alter or change the powers, preferences or rights given to the Convertible Preferred Stock, (ii) adversely alter or amend the Certificate of Designations or (iii) amend or repeal any provision of, or add any provision to, the Company's certificate of incorporation or bylaws, or file any certificate of designation of any series of preferred stock, if such action would adversely alter or change the preferences, rights, privileges or powers of, or restrictions provided for the benefit of, the Convertible Preferred Stock.

**Dividends.** The Convertible Preferred Stock will not be entitled to receive any dividends, unless and until specifically declared by our Board.

**Redemption.** We are not obligated to redeem or repurchase any shares of Convertible Preferred Stock. Shares of Convertible Preferred Stock are not otherwise entitled to any redemption rights or mandatory sinking fund or analogous fund provisions.

## Reasons for Stockholder Approval

Our common stock is listed on The Nasdaq Stock Market, and, as such, we are subject to the Nasdaq Listing Rules. Nasdaq Listing Rule 5635(b) requires stockholder approval for issuances of securities that will result in a "change of control" of the issuer. Nasdaq may deem a change of control to occur when, as a result of an issuance, an investor or a group would own, or have the right to acquire, 20% or more of the outstanding shares of common stock or voting power and such ownership or voting power of an issuer would be the largest ownership position of the issuer. We are seeking stockholder approval of this proposal in order to satisfy the requirements of Nasdaq Listing Rule 5635(b) with respect to the issuance of shares of our common stock upon conversion of the Convertible Preferred Stock, and to satisfy our obligations under the Certificate of Designations.

Assuming the full conversion of the Convertible Preferred Stock (assuming a conversion ratio of 100:1), such securities, in the hands of the holders of the Convertible Preferred Stock, would represent approximately 6.5% of the outstanding shares of our common stock (based on 70,039,338 shares of our common stock outstanding as of April 25, 2018 plus the 5,000,000 additional shares of our common stock that would be outstanding as a result of such conversion). In addition, as a result of the conversion of the Convertible Preferred Stock, Jack W. Schuler and

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the Jack W. Schuler Living Trust would collectively own in excess of 20% of the outstanding shares of our common stock. See “Background—The Holders of the Convertible Preferred Stock; Certain Interests” above.

The Certificate of Designations requires us to submit this proposal to our stockholders at the Annual Meeting. Approval of this proposal will constitute approval pursuant to Nasdaq Listing Rule 5635(b).

#### Consequences of Failing to Approve the Issuance Proposal

Our Board is not seeking the approval of our stockholders to authorize the Preferred Stock Offering. The issuance and sale of the shares of Convertible Preferred Stock has already occurred, and the Certificate of Designations is a binding obligation of the Company. The Convertible Preferred Stock will continue to be an authorized class of our capital stock, and the terms of the Convertible Preferred Stock will remain outstanding obligations of ours in favor of the holders of such securities. The failure of our stockholders to approve this proposal will only mean that the Convertible Preferred Stock cannot be converted into common stock.

#### Dilution

If this proposal is approved, existing stockholders will suffer dilution in ownership interests and voting rights as a result of the issuance of shares of our common stock upon the conversion of the shares of Convertible Preferred Stock. Upon conversion in full of the shares of Convertible Preferred Stock (assuming a conversion ratio of 100:1), 5,000,000 additional shares of our common stock will be outstanding, and the ownership interest of our existing stockholders (other than the holders of the Convertible Preferred Stock) would be correspondingly reduced. The number of shares of our common stock described above does not give effect to (i) the issuance of additional shares of our common stock due to potential future anti-dilution adjustments on the Convertible Preferred Stock, (ii) the issuance of 1,500,000 additional shares of our common stock if the underwriter of the Common Stock Offering exercises its over-allotment option in full, (iii) the issuance of shares of our common stock pursuant to other outstanding options and warrants, or (iv) any other future issuances of our common stock. The sale into the public market of these shares also could materially and adversely affect the market price of our common stock.

#### Required Vote of Stockholders

Approval of this proposal requires the affirmative vote of the holders of a majority of the shares of our common stock present in person or represented by proxy at the Annual Meeting and entitled to vote on this proposal. Accordingly, abstentions will have the same effect as a vote against this proposal. This proposal is a non-routine matter, and if you hold your shares in street name via a broker, bank or other nominee, your shares may not be voted by your broker, bank or other nominee if you do not submit voting instructions.

**THE BOARD OF DIRECTORS RECOMMENDS THAT YOU VOTE “FOR” THE ISSUANCE PROPOSAL.**

## COMPENSATION COMMITTEE REPORT1

Our executive compensation program for our Named Executive Officers is administered by the Compensation Committee of the Board of Directors. The Compensation Committee has reviewed the Compensation Discussion and Analysis and discussed that analysis with management. Based on its review and discussions with management, the Compensation Committee recommended to the Board of Directors that the Compensation Discussion and Analysis be included in this proxy statement and the Company’s annual report on Form 10-K for the year-ended December 31, 2017.

This report is provided by the following independent members of the Compensation Committee:

Veronica G.H. Jordan, Chairman

James S. Burns

Eric Varma

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1. The information provided under the heading “Compensation Committee Report” shall not be deemed to be “soliciting material” or “filed” or incorporated by reference in future filings with the SEC, or subject to the liabilities of Section 18 of the Exchange Act, except to the extent that it is specifically incorporated by reference into a document filed under the Securities Act of 1933, as amended (the “Securities Act”) or the Exchange Act.

## COMPENSATION DISCUSSION AND ANALYSIS

This section describes the compensation program for our Named Executive Officers. In particular, this section focuses on our 2017 compensation program and related decisions. As a smaller reporting company, we are not required to include a “Compensation Discussion and Analysis” and are permitted to exclude certain executive compensation tables from our disclosure. We have elected to include a Compensation Discussion and Analysis as well as additional tables under Item 402 on a voluntary basis. As permitted under Item 402 of Regulation S-K, we are not including pay ratio disclosure in light of our status as a smaller reporting company.

### Named Executive Officers During 2017

The following individuals who served as executive officers of the Company during 2017 were our “Named Executive Officers” for 2017:

Name	Positions
Valerie B. Palmieri	President, Chief Executive Officer
Fred Ferrara	Chief Operating Officer
Robert Beechey	Chief Financial Officer (effective December 18, 2017)
Eric J. Schoen	Former Senior Vice President, Finance and Chief Accounting Officer (through December 18, 2017)

### Compensation Philosophy and Objectives

The Compensation Committee annually reviews our executive compensation program to evaluate whether it appropriately rewards performance that is tied to sound decision-making and creating stockholder value, and is designed to achieve our goals of promoting financial and operational success by attracting, motivating and facilitating the retention of key employees with outstanding talent and ability.

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The goal of our compensation program for our Named Executive Officers is the same as for the overall Company, which is to foster compensation policies and practices that attract, engage and motivate high caliber talent by offering compensation in a competitive range. We are committed to a total compensation philosophy and structure that provides flexibility in responding to market factors; rewards and recognizes superior performance; attracts highly skilled, experienced and capable employees; and is fair and fiscally responsible.

The Compensation Committee has designed and implemented compensation programs for Named Executive Officers to reward them for improving our financial and operating performance and leadership excellence, to align their interests with those of our stockholders and to encourage them to remain with us for long and productive careers. Because bonus and equity compensation play a key role in aligning our executives' interests with our stockholders' interests, annual incentives and equity incentives constitute an essential portion of Named Executive Officer compensation. We believe that our compensation elements simultaneously fulfill one or more performance, alignment and/or retention objectives.

Base salary and annual incentives are designed to reward annual achievements and be commensurate with the executive's scope of responsibilities, demonstrated leadership abilities, and management experience and effectiveness. Our other elements of compensation focus on motivating and challenging the executive to achieve superior, longer-term, sustained results.

In establishing compensation for the Named Executive Officers, the following are the Compensation Committee's objectives:

- Attract, retain, reward and motivate high performing executive talent;
- Align senior officer compensation with our corporate strategies, business objectives and the long-term interests of our stockholders;
- Increase the incentive to achieve key strategic, financial and operational performance measures by linking incentive award opportunities to the achievement of performance goals in these areas;
- Provide elements of compensation that, individually and in the aggregate, do not encourage excessive risk-taking; and
- Enhance the officers' incentive to increase the Company's long-term value, as well as promote retention of key people, by providing a portion of total compensation opportunities for senior management in the form of direct ownership in the Company through stock ownership.

The Compensation Committee reviews all components of the Named Executive Officers' compensation, including annual base salary, bonuses based on corporate and individual performance, equity compensation, perquisites and severance benefits. For equity incentive compensation, which includes grants of RSUs and stock options, the Compensation Committee reviews accumulated realized and unrealized stock options and RSU gains. The Compensation Committee also reviews the dollar value to the executive and cost to the Company of all perquisites, as well as the actual and projected payout obligations under several potential severance and change in control scenarios. In addition, from time to time, the Compensation Committee may hire compensation and benefits consultants to assist in developing and reviewing overall executive compensation strategies, which the Compensation Committee did utilize in 2017. The Compensation Committee determined that the Compensation Committee's independent compensation consultant, Arnosti Consulting, Inc., had no conflicts of interest related to services rendered for the Compensation Committee. The Compensation Committee also receives input from the Chief Executive Officer regarding the compensation of all executives other than the Chief Executive Officer.

On June 21, 2017, we held a stockholder advisory vote on the compensation of our named executive officers for 2017, commonly referred to as a say-on-pay vote. Our stockholders overwhelmingly voted to approve the 2017 compensation of our named executive officers, as disclosed in the 2017 proxy statement, with approximately 99% of the shares present in person or by proxy voting "FOR" the proposal. Considering the results of this advisory vote, the Compensation Committee decided to retain our overall executive compensation philosophy



and did not make any changes to our executive compensation program in response to the 2017 say-on-pay vote. The Compensation Committee believes that the elements of the Company's executive compensation program are structured in a way that is supportive of the Company's strategic objectives and is aligned with interests of the Company's stockholders.

#### Peer Group

In evaluating executive compensation decisions, the Compensation Committee also considers peer group comparator data derived from the following companies: CareDX, Inc., Genmark Diagnostics, Inc., iCAD, Inc., Nanosphere, Inc., NanoString Technologies, Inc., Orasure Technologies Inc., Oxford Immunotec Global PLC, Pacific Biosciences of California, Inc., Response Genetics, Inc., Roka Bioscience, Inc., Sequenom, Inc., T2 Biosystems, Inc., Trovogene, Inc., Venaxis, Inc., and Veracyte, Inc. For peer group companies with ownership or other status changes, peer group data was evaluated through the date of change or relevant period.

#### Compensation Components

Our executive compensation program is designed to attract executives with the requisite skills deemed necessary to support our strategic objectives, to reward executives for the achievement of near-term and long-term objectives, and to retain executives by aligning compensation with the longer-term creation of stockholder value, by developing a sustainable business with consistent performance.

Our compensation program is comprised of the following components for the Named Executive Officers:

- Base Salaries;
- Annual Incentive Bonus;
- Equity Incentives;
- Employment agreements providing for severance and change in control benefits; and
- Certain perquisites as well as 401(k) plan and health and welfare benefits.

The Compensation Committee believes that these elements of compensation, when combined, are effective, and will continue to be effective, in achieving the overall objectives of our compensation program.

**Base Salaries.** Executive salaries are determined based on the data from our comparator group, an evaluation of each officer's individual performance throughout the year, level of responsibility, overall salary structure, budget guidelines and assessment of our financial condition. We believe that this approach ensures that our cost structure will allow us to remain competitive in the markets. Salaries paid to the Named Executive Officers in fiscal 2017 were within the targeted range of the peer group aggregate. The Compensation Committee normally reviews and adjusts as appropriate the base salaries for the Named Executive Officers in the first half of each calendar year. For fiscal year 2017, no adjustments to base salary were made with respect to our then-serving Named Executive Officers. Mr. Beechey's initial base salary was determined in December 2017 based on data from our comparator group, as well as the compensation received by Mr. Beechey from his former employer.

**Annual Bonuses.** Consistent with our objectives to tie a significant portion of the Named Executive Officers' total compensation to our performance, all Named Executive Officers have a target bonus of a fixed percentage of their salary. At the beginning of each fiscal year, the Compensation Committee establishes performance measures and goals, which typically include milestones and targets. The milestones and targets are formulated into specific metrics on which to measure performance and attainment of goals during the year. The Compensation Committee typically assigns weightings to the various performance goals to provide a balanced approach to the various factors applied to determining bonus amounts. For fiscal year 2017, these goals, milestones and targets, which were designed to be challenging yet achievable with strong management performance, focused primarily on the following:



- Total reported revenue (ASPiRA LABS and ASPiRA IVD);
- Payer positive medical policy covered lives;
- Cash utilization; and
- Customer retention and re-order metrics.

At the beginning of each fiscal year (or, if later, at the time of commencement of employment with the Company), the Compensation Committee establishes bonus payout targets for each Named Executive Officer. The Compensation Committee generally establishes the individual payout targets for each Named Executive Officer based on the executive's position, level of responsibility and a review of the peer group. For 2017, the payout targets for each Named Executive Officer were as follows:

	Target Opportunity (as a % of annual base salary)
Valerie B. Palmieri	50%
Fred Ferrara	40%
Robert Beechey	40%(1)
Eric J. Schoen	40%

(1) For 2017, Mr. Beechey's target bonus was prorated to reflect his period of service with the Company during 2017.

After the close of each fiscal year, or other such timeframe as determined by the Compensation Committee, the Compensation Committee assesses the performance of each Named Executive Officer against the pre-established metrics. Each Named Executive Officer receives a bonus based on his or her individual payout target and our performance measured relative to the specific performance goals.

As a result of this evaluation of 2017 goals, milestones and targets, the Compensation Committee determined that the targets for the fiscal year 2017 had been partially met and paid actual bonus payouts of approximately 65% of the aggregate bonus target amount for each of the Named Executive Officers, with Mr. Beechey's payout prorated for the period during 2017 in which he was employed by the Company. Under the terms of Mr. Schoen's separation agreement he remained eligible to receive a 2017 annual bonus as a result of his continued service as a consultant to the Company. The following table sets forth the 2017 annual bonus payouts for each of our Named Executive Officers:

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	Annual Bonus Award
Valerie Palmieri	\$121,875
Fred Ferrara	\$80,600
Robert Beechey	\$2,593
Eric Schoen	\$62,507

Equity Incentive Compensation. The equity component of our executive compensation program is designed to fulfill our performance alignment and retention objectives. We currently maintain the 2010 Plan. The 2010 Plan is



administered by the Compensation Committee.

The 2010 Plan generally authorizes us to make awards reserving the following recourse against a participant who does not comply with certain employment-related covenants, either during employment or for certain periods after ceasing to be employed: we may terminate any outstanding, unexercised, unexpired, unpaid, or deferred awards; rescind any exercise, payment or delivery pursuant to the award; or recapture any shares (whether

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restricted or unrestricted) or proceeds from the participant's sale of shares issued pursuant to the award. These remedies are also generally available to us for awards that would have had a lower grant level, vesting, or payment if a participant's fraud or misconduct had not caused or partially caused the need for a material financial restatement by us or any affiliate. In addition, all awards or proceeds from the sale of awards made or earned pursuant to the 2010 Plan will be subject to the right of us to full recovery (with reasonable interest thereon) in the event that the Board determines reasonably and in good faith that any participant's fraud or misconduct has caused or partially caused the need for a material restatement of our financial statements for any fiscal year to which the award relates.

In general, Named Executive Officers receive incentive stock option grants at the time of hire. Annually thereafter, they receive additional equity-based compensation as recommended by the Compensation Committee. Equity-based compensation is based on individual performance and contributions toward the achievement of our business objectives, as well as overall Company performance. The number of underlying shares that may be purchased pursuant to the stock options granted to each Named Executive Officer varies based on the executive's position and responsibilities. In addition, amounts are determined by comparing the level of equity-based compensation that is awarded to executives at the peer group companies.

The Compensation Committee granted equity-based compensation to the Named Executive Officers during the year ended December 31, 2017 in the form of stock options, as follows:

Name	All Other Option Awards: Number of Securities Underlying Options
Valerie B. Palmieri (1)	650,000
Fred Ferrara(2)	150,000
Robert Beechey(3)	150,000
Eric J. Schoen(4)	75,000

- (1) 450,000 stock options are subject to annual vesting over a period of four years. 200,000 stock options were performance-based grants with vesting based upon attainment of 2017 goals related to (1) coverage by commercial payers, (2) positive endorsement in national guidelines and (3) closing a commercial partnership with specified minimum financial terms. These performance goals were not deemed to have been met as of December 31, 2017 and, accordingly, the 2017 performance-based stock option awards were forfeited.
- (2) 100,000 stock options are subject to annual vesting over a period of four years. 50,000 stock options were performance-based grants with vesting based upon attainment of 2017 goals related to (1) coverage by commercial payers, (2) positive endorsement in national guidelines and (3) closing a commercial partnership with specified minimum financial terms. These performance goals were not deemed to have been met as of December 31, 2017 and, accordingly, the 2017 performance-based stock option awards were forfeited.
- (3) 150,000 stock options are subject to annual vesting over a period of four years.
- (4) 75,000 stock options were subject to annual vesting over a period of four years. Upon his termination, 50% of Mr. Schoen's then-unvested shares automatically vested and his remaining options will continue to vest over the remainder of the original vesting period, subject to his continued service as a consultant through the applicable vesting date.

During 2016, Ms. Palmieri and Messrs. Ferrara and Schoen each received stock option awards with vesting based on the attainment of 2017 goals related to (1) coverage by commercial payers, (2) positive endorsement in national guidelines and (3) closing a commercial partnership with specified minimum financial terms. The vesting criteria for Ms. Palmieri's and Mr. Ferrara's awards were partially achieved in 2017 and a portion of the stock option awards were ultimately earned. According to the terms of the award, these earned options vested 50% on December 31, 2017 and the remaining 50% of the options are scheduled to vest on December 31, 2018. Pursuant to the terms of Mr. Schoen's separation, Mr. Schoen's award vested 50% upon his termination.

Employee Benefits Programs. Our employee benefits program primarily consists of two components: (1) severance and change in control arrangements and (2) perquisites and other benefits.

Severance and Change in Control Arrangements. Under the terms of the Named Executive Officer's employment agreements, each is eligible to receive severance benefits upon a termination by the Company without cause or by the executive officer due to good reason. The Compensation Committee believes that these arrangements are important in order to attract and retain executive officer talent as many of the peer group companies provide similar benefits.

In addition, the Compensation Committee believes that executive officers have a greater risk of job loss or modification as a result of a change in control transaction than other employees. Accordingly, we have entered into change in control agreements with each of our Named Executive Officers, under which they will receive certain payments and benefits upon qualifying terminations that follow a change in control. The principal purpose of the change in control agreements is to provide executive officers with appropriate incentives to remain with us before, during and after any change in control transaction by providing the executive officers with security in the event their employment is terminated or materially changed following a change in control. By providing this type of security, the change in control agreements help ensure that the executive officers support any potential change in control transaction that may be considered in the best interests of our stockholders, even while the transaction may create uncertainty in the executive officer's personal employment situation. The Compensation Committee believes that salary and benefits for one year for Ms. Palmieri as our current President and Chief Executive Officer and nine months for our Chief Operating Officer and Chief Financial Officer are reasonable and appropriate to achieve the desired objectives of the agreements.

Perquisites and Other Benefits. Our Named Executive Officers participate in our standard employee benefits programs, including medical, dental, vision, life, short-term and long-term disability insurance, 401(k) Plan and flexible spending accounts.

#### Method for Determining Compensation Amounts

In deciding on the type and amount of compensation for each executive, the Compensation Committee seeks to align the interests of the Named Executive Officers with those of our stockholders. In making compensation decisions, the Compensation Committee reviews the performance of the Company and carefully evaluates an executive's performance during the year against established goals, leadership qualities, operational performance, business responsibilities, career with the Company, current compensation arrangements and long-term potential to enhance shareowner value. The types and relative importance of specific financial and other business objectives vary among our Named Executive Officers depending on their positions and the particular operations or functions for which they are responsible. The Compensation Committee does not adhere to rigid formulas when determining the amount and mix of compensation elements. The Compensation Committee seeks to structure compensation elements in a manner that optimizes the executive's contributions to the Company, and reflects an evaluation of the compensation paid by our competitors.

The Compensation Committee reviews both current pay and the opportunity for future compensation to achieve an appropriate mix between equity incentive awards and cash payments in order to meet our objectives. However, prior stock compensation gains are not considered in setting future compensation levels. The mix of compensation elements is designed to reward recent results and motivate long-term performance through a combination of cash and equity incentive awards.

The Compensation Committee has primary responsibility for assisting the Board in developing and evaluating potential candidates for executive positions, including the Chief Executive Officer, or CEO. As part of this responsibility, the Committee oversees the design, development and implementation of the compensation program for the CEO and the other Named Executive Officers. The Compensation Committee evaluates the performance of the CEO and determines CEO compensation in light of the goals and objectives of the compensation program. The CEO

and the Compensation Committee assess the performance of the other Named Executive Officers and the Compensation Committee determines their compensation after considering initial recommendations from the CEO.

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The Compensation Committee approves stock option grants for Named Executive Officers at the time of hire, and thereafter, the Compensation Committee annually reviews and approves equity-based compensation. Equity-based compensation is based on individual performance and contributions toward the achievement of our business objectives, as well as overall Company performance. Amounts are determined by comparing the level of equity-based compensation awarded to executives of competing companies, along with consideration for attracting, retaining and motivating the executive officers. The equity grants made under the 2010 Plan have provisions allowing us to recoup awards if we are required to restate corporate financial statements.

#### Compensation Policies and Practices Regarding Risk Management

In fulfilling its role in assisting the Board in its risk oversight responsibilities, the Compensation Committee believes that our compensation policies and practices do not motivate imprudent risk taking. Specifically, the Compensation Committee reviewed the following features of our compensation programs that guard against excessive risk-taking:

- our annual incentive compensation is based on balanced performance metrics that we believe promote disciplined progress towards longer-term Company goals;
- we do not offer significant short-term incentives that might drive high-risk investments at the expense of long-term Company value; and
- our compensation awards are capped at reasonable and sustainable levels, as determined by a review of the Company's economic position and prospects, as well as the compensation offered by comparable companies in the peer group.

#### Executive Officer Compensation

President and Chief Executive Officer. In connection with Ms. Palmieri's appointment to the position of President and Chief Executive Officer, the Company and Ms. Palmieri entered into an amended and restated employment agreement (the "Employment Agreement"), effective as of January 1, 2015. Pursuant to the Employment Agreement, the Company will pay Ms. Palmieri an annual base salary of \$375,000. In addition, Ms. Palmieri will be eligible for a bonus of up to fifty percent (50%) of her base salary for achievement of Company and individual performance-related goals to be defined by the Board (the "Performance Goals"). If Ms. Palmieri is terminated without cause or resigns for good reason (as these terms are defined in the Employment Agreement) and provided that she complies with certain requirements (including signing a standard separation agreement), under the Employment Agreement: (i) she will be entitled to continued payment of her base salary as then in effect for a period of 12 months following the date of termination; (ii) she will be entitled to continued health and dental benefits through COBRA premiums paid by the Company until the earlier of 12 months after termination or the time that she obtains employment with reasonably comparable or greater health and dental benefits and (iii) she will have a 12-month period after her termination of service (as employee, director or consultant) to exercise any and all of her options that had vested upon termination of employment to purchase Company common stock (subject to earlier expiration at the end of the option's original term or Ms. Palmieri's breach of her Employment Agreement or other agreement with the Company). In addition, if Ms. Palmieri is terminated without cause before she has completed the Performance Goals, she will be paid, on a pro rata basis, a bonus commensurate with the portion of the Performance Goals that have been achieved by the time of such termination. Finally, the Employment Agreement provides that if Ms. Palmieri's employment is terminated without cause or for good reason within the 12-month period following a change of control (as such term is defined in the Employment Agreement), then, in addition to the severance obligations due to Ms. Palmieri as described above, 100% of any then-unvested options to purchase Company common stock previously granted by the Company will vest upon the date of such termination (subject to earlier expiration at the end of the option's original term).

Chief Operating Officer. On April 1, 2015, we entered into an employment agreement with Fred Ferrara. The employment agreement between the Company and Mr. Ferrara provided that the Company would initially pay Mr. Ferrara an annual base salary of \$288,000. Mr. Ferrara's base salary was increased to \$310,000 in conjunction with his promotion to Chief Operating Officer in November 2016. Under the employment agreement, Mr. Ferrara is eligible for a bonus of up to 40% of his base salary for achievement of performance-related goals and milestones. In



the event Mr. Ferrara is terminated without cause or resigns for good reason (as these terms are defined in the employment agreement), he is entitled to receive: (i) continued payment of his base salary as then in effect for a period of nine months following the date of termination; (ii) continued health and dental benefits paid by the Company until the earlier of nine months after termination or the time that Mr. Ferrara obtains employment with reasonably comparable or better health and dental benefits and (iii) a 12-month period after termination to exercise any and all of his vested options to purchase the Company's common stock (subject to earlier expiration at the end of the option's original term). Additionally, if Mr. Ferrara's employment is terminated without cause or if he resigns for good reason within the 12-month period following a change in control (as the term is defined in the employment agreement), then, in addition to the severance obligations due to Mr. Ferrara as described above, 100% of any then-unvested options previously granted by the Company will vest upon the date of such termination.

Chief Financial Officer. On December 18, 2017, we entered into an employment agreement with Robert Beechey. The employment agreement between the Company and Mr. Beechey provides that the Company would initially pay Mr. Beechey an annual base salary of \$280,000. Under the employment agreement, Mr. Beechey is eligible for a bonus of up to 40% of his base salary for achievement of performance-related goals and milestones. The employment agreement provides that, in the event that Mr. Beechey is terminated without cause or resigns for good reason (as these terms are defined in the employment agreement), he is entitled to receive: (i) continued payment of his base salary as then in effect for a period of nine months following the date of termination; (ii) continued health and dental benefits paid by the Company until the earlier of nine months after termination or the time that Mr. Beechey obtains employment with reasonably comparable or better health and dental benefits and (iii) a 12-month period after termination to exercise any and all of his vested options to purchase the Company's common stock (subject to earlier expiration at the end of the option's original term). Additionally, if Mr. Beechey's employment is terminated without cause or if he resigns for good reason within the 12-month period following a change in control (as the term is defined in the employment agreement), then, in addition to the severance obligations due to Mr. Beechey as described above, 100% of any then-unvested options previously granted by the Company will vest upon the date of such termination.

Former Senior Vice President, Finance and Chief Accounting Officer. In December 2017, Mr. Schoen stepped down as the Company's Senior Vice President, Finance and Chief Accounting Officer and transitioned to a consulting role at the Company. In connection with the transition, the Company and Mr. Schoen entered into a consulting agreement dated as of December 18, 2017 (the "Consulting Agreement"). Pursuant to the terms of the Consulting Agreement, Mr. Schoen agreed to assist the Company, as needed, in providing accounting and finance services as directed by the Chief Financial Officer or Chief Executive Officer of the Company including, but not limited to, assistance in transition of financial leadership. The Company agreed to pay Mr. Schoen \$150 per hour for such consulting services, plus reimbursement for reasonable expenses. Mr. Schoen also remained eligible for payout under the Company's 2017 Corporate Incentive Plan as determined by the Compensation Committee, provided that Mr. Schoen continued to render satisfactory services to the Company through the earlier of (1) (a) the date of the filing of the Company's 2017 Annual Report on Form 10-K with the Securities and Exchange Commission and (b) the date of the Company's implementation of ASC Topic 606 (new revenue recognition rules) and (2) the date Mr. Schoen is otherwise released from service at the Company's option prior to the completion of the items described in the preceding clause (1). The Consulting Agreement has an initial term of up to (5) months, after which it may be renewed by mutual agreement of the Company and Mr. Schoen. In addition, in connection with Mr. Schoen's separation and pursuant to the terms of Mr. Schoen's employment agreement, 50% of his unvested options accelerated in full upon his separation and Mr. Schoen will receive severance payments totaling \$187,500 and Company-paid continuation of health and dental benefits for 9 months pursuant to the terms of his employment agreement. The remaining portion of Mr. Schoen's unvested option awards will continue to vest, subject to Mr. Schoen's continued service as a consultant.

2017 Summary Compensation Table



The compensation earned by the Named Executive Officers for the year ended December 31, 2017 and, to the extent required by the SEC executive compensation disclosure rules, the year ended December 31, 2016 was as follows:

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Name and Principal Position	Year	Salary	Bonus	Stock Awards	Option Awards(1)	Non-Equity Incentive Plan(2)	Nonqualified Deferred Compensation Earnings	All Other Compensation(4)
Valerie B. Palmieri President and Chief Executive Officer	2017	\$ 375,000	\$ —	\$ —	\$ 611,456	\$ 121,875	\$ —	\$ 682
Fred Ferrara Chief Operating Officer	2016	\$ 375,000	\$ —	\$ —	\$ 581,909	\$ 75,000	\$ —	\$ 682
Robert Beechey Chief Financial Officer (effective December 18, 2017)	2017	\$ 310,000	\$ —	\$ —	\$ 138,814	\$ 80,600	\$ —	\$ 682
Eric J. Schoen Former Senior Vice President, Finance and Chief Accounting Officer (through December 18, 2017)	2016	\$ 294,187	\$ —	\$ —	\$ 131,760	\$ 60,000	\$ —	\$ 682
	2017	\$ 11,667	\$ —	\$ —	\$ 159,600	\$ 2,593	\$ —	\$ —
	2016	\$ —	\$ —	\$ —	\$ —	\$ —	\$ —	\$ —
	2017	\$ 240,625	\$ —	\$ —	\$ 84,300	\$ 62,507	\$ —	\$ 221,835
	2016	\$ 250,000	\$ —	\$ —	\$ 55,035	\$ 30,000	\$ —	\$ 682

(1) Represents option awards granted to the named executive officers. The amounts reported in this column are valued based on the aggregate grant date fair value computed in accordance with ASC Topic 718, with the 2017 and 2016 performance-based options valued based on the probable achievement of the performance goals at the time of grant. Assuming maximum achievement of the performance goals, the grant date fair value of Ms. Palmieri's 2017 performance-based options would be \$206,816 and Mr. Ferrara's performance-based option would be \$51,704. For additional information regarding the assumptions made in calculating these amounts, see Note 9, Employee Benefit Plans, to the consolidated financial statements included in the Company's Annual Report on Form 10-K for the year ended December 31, 2017.

(2) Amount represents performance bonus for fiscal years 2017 and 2016.

(3) Includes Mr. Schoen's severance payments due subsequent to the cessation of his service as Senior Vice President, Finance and Chief Accounting Officer on December 18, 2017 of \$187,500 and paid time off payout of \$33,653.

(4) All Other Compensation also includes Company paid insurance premiums of less than \$1,000.



## 2017 Grants of Plan-Based Awards

The grants of plan-based awards to the Named Executive Officers during 2017 were as follows:

Name	Grant Date	Estimated future payouts under non-equity incentive plan awards(1)			Estimated future payouts under equity incentive plan awards(2)			All other option awards: Number of securities underlying options (#)(3)	Exercise or base price of option awards (\$/sh) (4)	Grant fair value of option awards
		Threshold	Target	Maximum	Threshold	Target	Maximum			
		(\$)	(\$)	(\$)	(#)	(#)	(#)			
Valerie B. Palmieri	3/23/2017	—	—	—	—	200,000	200,000	—	2.14	105,6
	3/23/2017	—	—	—	—	—	—	450,000	2.14	505,8
		1	187,500	281,250	—	—	—	—	—	—
Fred Ferrara	3/23/2017	—	—	—	—	50,000	50,000	—	2.14	26,41
	3/23/2017	—	—	—	—	—	—	100,000	2.14	112,4
		1	124,000	186,000	—	—	—	—	—	—
Robert Beechey	12/18/2017	—	—	—	—	—	—	150,000	2.05	159,6
		1	3,989	5,984	—	—	—	—	—	—
Eric J. Schoen	3/23/2017	—	—	—	—	—	—	75,000	(6) 2.14	84,30
		1	100,000	150,000	—	—	—	—	—	—

- (1) These columns show the potential value of the payout for each named executive officer in 2017 if the threshold, target or maximum goals were satisfied for all performance measures under the Company's annual incentive plan. The performance goals and salary and bonus multiples for determining the payout are described in the "Compensation Discussion and Analysis" section. Mr. Beechey's 2017 annual incentive plan award was prorated to reflect his service during 2017. The 2017 payouts are included in the "2017 Summary Compensation Table."
- (2) These columns show the potential number of stock options which would vest if performance criteria were met during 2017 for the option granted to Ms. Palmieri and Mr. Ferrara on March 23, 2017. The performance goals for determining vesting are described in the "Compensation Discussion and Analysis" section. The estimates used and maximum grant date fair value are described in the "2017 Summary Compensation Table." The performance criteria

associated with the 2017 performance-based options were not achieved and, accordingly, these awards were forfeited as of December 31, 2017.

- (3) Stock options granted vest 25% annually over a four year period.
- (4) This column shows the exercise price for the stock options granted, which was the closing price of our common stock on the date of grant.
- (5) This column shows the grant date fair value under ASC Topic 718 of stock options awards granted to Named Executive Officers in 2017, with the 2017 performance-based options valued based on the probable achievement of the performance goals at the time of grant. The option fair value was calculated using the Black-Scholes value on the grant date and is the amount the Company will expense in its financial statements over the award's vesting schedule assuming no change in probability of achievement, unless the named executive officer leaves the Company. More information regarding these awards is included the Compensation Discussion and Analysis as well as in Note 9 to our Annual Report on Form 10-K for the year ended December 31, 2017.
- (6) Pursuant to the terms of his employment agreement, upon his termination, 50% of Mr. Schoen's then-unvested options vested. Mr. Schoen's remaining unvested option awards will continue to vest in accordance with the original vesting schedule, subject to Mr. Schoen's continued service as a consultant.

2017 Outstanding Equity Awards at Fiscal Year-End

The outstanding equity awards held by the Named Executive Officers as of December 31, 2017 were as follows:

Name	Option Awards			Stock Awards						
	Number of Securities Underlying Unexercised Options - Exercisable	Number of Securities Underlying Unexercised Options – Unexercisable	Equity Incentive Plan Awards: Number of Securities Underlying Unearned Options	Option Exercise Price	Option Expiration Date	Number of Shares or Units of Stock that have not Vested	Market Value of Shares or Units of Stock that have not Vested	Equity Incentive Plan Awards: Number of Shares or Units of Stock that have not Vested	Equity Incentive Plan Awards: Market or Payout Value of Unearned Shares, Units or Rights that have not Vested	
Valerie Palmieri	138,541	36,459	—	\$ 1.55	10/22/2024(1)	—	—	—	—	
	291,666	108,334	—	\$ 1.95	1/2/2025(1)	—	—	—	—	
	112,500	337,500	—	\$ 1.57	3/16/2026(2)	—	—	—	—	
	50,000	50,000	—	\$ 0.89	11/7/2026(3)	—	—	—	—	
	—	450,000	—	\$ 2.14	3/22/2027(2)	—	—	—	—	
Fred Ferrara	100,000	50,000	—	\$ 1.74	4/1/2025(4)	—	—	—	—	
	25,000	75,000	—	\$ 1.57	3/16/2026(2)	—	—	—	—	
	12,500	37,500	—	\$ 0.91	11/1/2026(2)	—	—	—	—	
	7,500	7,500	—	\$ 0.89	11/7/2026(3)	—	—	—	—	
	—	100,000	—	\$ 2.14	3/22/2027(2)	—	—	—	—	
Robert Beechey	—	150,000	—	\$ 2.05	12/17/2027(2)	—	—	—	—	
Eric Schoen(5)	2,500	—	—	\$ 9.92	7/28/2020	—	—	—	—	
	3,400	—	—	\$ 4.13	3/17/2021	—	—	—	—	
	20,000	—	—	\$ 1.96	11/8/2021	—	—	—	—	
	25,000	—	—	\$ 1.62	3/21/2022	—	—	—	—	
	50,000	—	—	\$ 1.62	3/21/2022	—	—	—	—	
	90,000	—	—	\$ 3.37	5/27/2023	—	—	—	—	
	53,281	1,719	—	\$ 3.09	3/26/2024(1)	—	—	—	—	
	37,500	—	—	\$ 2.03	7/5/2025	—	—	—	—	
46,875	28,125	—	\$ 1.24	6/15/2026(2)	—	—	—	—		

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19,687	2,188	—	\$	0.89	11/7/2026(3)	—	—	—	—
37,500	37,500	—	\$	2.14	3/22/2027(2)	—	—	—	—

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- (1) Stock options vest ratably on a monthly basis over a 48 month period from the vesting commencement date.
  - (2) Stock options vest in four equal annual installments beginning one year following the vesting commencement date.
  - (3) Represents stock options which vested 50% upon attainment of performance goals in 2017 and will vest an additional 50% on December 31, 2018.
  - (4) Stock options vest over four years as follows: 25% of the shares vest one year following the vesting commencement date, with the remaining 75% vesting in equal monthly installments over the next three years.
  - (5) Mr. Schoen's remaining unvested option awards will continue to vest in accordance with the original vesting schedule, subject to Mr. Schoen's continued service as a consultant.



## Potential Payments Upon Termination

The following table set forth amounts payable to the Named Executive Officers if such officer had been terminated as of December 31, 2017:

Name	Termination Scenario	Continued Payment of Base Salary	Immediate Vesting of Stock Options(3)	Health and Dental Insurance Benefits(4)
Valerie Palmieri	Termination(1)	\$ 375,000	\$ —	\$ 31,380
	Within 12 Months After Change-in Control(2)	375,000	187,354	31,380
	For cause	—	—	—
Fred Ferrara	Termination(1)	232,500	—	23,535
	Within 12 Months After Change-in Control(2)	232,500	82,550	23,535
	For cause	—	—	—
Robert Beechey	Termination(1)	210,000	—	16,098
	Within 12 Months After Change-in Control(2)	210,000	—	16,098
	For cause	—	—	—

(1) Termination includes the following separation scenarios: involuntary termination not for cause or resignation for good reason (in all cases, assuming the executive is not entering into competitive or other activity detrimental to us).

(2) Termination of employment by us for reasons other than for cause or by Named Executive Officers for good reason within the 12-month period following a change in control (as defined in the respective employment agreements).

(3) Reflects the difference between the exercise price of all options that would have vested upon such a termination and \$1.93 (the December 29, 2017 closing price of our common stock). These amounts are in addition to the existing value of options vested at December 31, 2017.

(4) Assumes each Named Executive Officer does not obtain employment with reasonably comparable or better health and dental benefits within the time period specified in the respective employment agreements.

## Separation Agreement with Mr. Schoen

In December 2017, Mr. Schoen stepped down as the Company's Senior Vice President, Finance and Chief Accounting Officer and transitioned to a consulting role at the Company. In connection with the transition, the Company and Mr. Schoen entered into a consulting agreement dated as of December 18, 2017 (the "Consulting Agreement"). Pursuant to the terms of the Consulting Agreement, Mr. Schoen agreed to assist the Company, as needed, in providing accounting and finance services as directed by the Chief Financial Officer or Chief Executive Officer of the Company including, but not limited to, assistance in transition of financial leadership. The Company agreed to pay Mr. Schoen

\$150 per hour for such consulting services, plus reimbursement for reasonable expenses. Mr. Schoen also remained eligible for payout under the Company's 2017 Corporate Incentive Plan as determined by

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the Compensation Committee, provided that Mr. Schoen continued to render satisfactory services to the Company through the earlier of (1) (a) the date of the filing of the Company's 2017 Annual Report on Form 10-K with the Securities and Exchange Commission and (b) the date of the Company's implementation of ASC Topic 606 (new revenue recognition rules) and (2) the date Mr. Schoen is otherwise released from service at the Company's option prior to the completion of the items described in the preceding clause (1). The Consulting Agreement has an initial term of up to (5) months, after which it may be renewed by mutual agreement of the Company and Mr. Schoen. Under the terms of Mr. Schoen's employment agreement, Mr. Schoen will also receive 9 months of base salary, payable in installments, immediate vesting of 50% of any then-unvested options and Company-paid continuation of health and dental benefits for 9 months.

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**PROPOSAL 3: ADVISORY VOTE TO APPROVE THE COMPENSATION OF OUR NAMED EXECUTIVE OFFICERS**

The Company is providing stockholders with an opportunity to vote to approve, on an advisory basis, the Company's executive compensation, in accordance with Section 14A of the Exchange Act. The advisory vote to approve executive compensation is a non-binding vote on the compensation of the Company's Named Executive Officers, as described in the "Compensation Discussion and Analysis" section, the tabular disclosure regarding such compensation, and the accompanying narrative disclosure, set forth in this proxy statement. The advisory vote to approve executive compensation is not a vote on the Company's general compensation policies or the compensation of the Company's Board. The Company is required to hold the advisory vote to approve executive compensation at least once every three years. At the 2017 Annual Meeting, the Company asked stockholders to indicate if it should hold an advisory vote to approve the compensation of named executive officers every one, two or three years. In accordance with the vote results at the 2017 Annual Meeting, the Board determined to implement an advisory vote on executive compensation every year until the next required vote on the frequency of stockholder votes on executive compensation.

We believe that our compensation policies and procedures seek to reward our Named Executive Officers for improving our financial and operating performance and leadership excellence, align their interests with those of our stockholders and encourage them to remain with us for long and productive careers. Because bonus and equity compensation play a key role in aligning our executives' interests with our stockholders' interests, annual incentives and equity incentives constitute an essential portion of Named Executive Officer compensation. We believe that our compensation elements simultaneously fulfill one or more performance, alignment and/or retention objectives. We believe that our philosophy and practices have resulted in executive compensation decisions that are appropriate and that have benefited the Company over time.

Specifically, the Compensation Committee believes that the structure of the executive compensation program support the following compensation objectives:

- Attract, retain, reward and motivate high performing executive talent;
- Align senior officer compensation with our corporate strategies, business objectives and the long-term interests of our stockholders;
- Increase the incentive to achieve key strategic, financial and operational performance measures by linking incentive award opportunities to the achievement of performance goals in these areas;
- Provide elements of compensation that, individually and in the aggregate, do not encourage excessive risk-taking; and
- Enhance the officers' incentive to increase the Company's long-term value, as well as promote retention of key people, by providing a portion of total compensation opportunities for senior management in the form of direct ownership in the Company through stock ownership.

The Compensation Committee believes that the design of the executive compensation program, which is intended to reward named executive officers for improving our financial and operating performance and leadership excellence, along with the limited use of executive perquisites and reasonable severance pay multiples, contribute to an executive compensation program that is competitive yet strongly aligned with stockholder interests.

For the reasons discussed above, the Board of Directors is asking you to indicate your support for our Named Executive Officer compensation by voting "FOR" the following "say-on-pay" resolution at the Annual Meeting:

"RESOLVED, that the compensation of the named executive officers of the Company, as disclosed in the proxy statement pursuant to the compensation disclosure rules of the SEC, including the Compensation Discussion and Analysis, the Summary Compensation Table and the other compensation tables and accompanying narrative discussion, is hereby APPROVED."



THE BOARD OF DIRECTORS RECOMMENDS THAT YOU VOTE "FOR" THE ADVISORY RESOLUTION RELATING TO THE COMPENSATION OF OUR NAMED EXECUTIVE OFFICERS AS DISCLOSED IN THIS PROXY STATEMENT.

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## SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT

The following table sets forth certain information regarding beneficial ownership of our common stock as of April 25, 2018 (unless otherwise indicated), by (1) each person known by us to be the beneficial owner of more than five percent of the outstanding shares of our common stock, (2) each of our directors, (3) each of our Named Executive Officers, and (4) all of our directors and executive officers as a group. All shares are subject to the named person's sole voting and investment power except where otherwise indicated.

Beneficial ownership is determined in accordance with Rule 13d-3 under the Exchange Act. Shares of common stock, which are issued and outstanding, are deemed to be beneficially owned by any person who has or shares voting or investment power with respect to such shares. Shares of common stock which are issuable upon exercise of options or warrants or the vesting of RSUs are deemed to be issued and outstanding and beneficially owned by any person who has or shares voting or investment power over such securities only if such securities are exercisable within 60 days of April 25, 2018, and, in any event, solely for purposes of calculating that person's percentage ownership of the common stock (and not for purposes of calculating the percentage ownership of any other person).

Except where otherwise indicated, the number of shares of common stock deemed outstanding and used in the denominator for determining percentage ownership for each person equals (i) 70,039,338 shares of common stock outstanding as of April 25, 2018, plus (ii) such number of shares of common stock as are issuable pursuant to RSUs, options or warrants held by that person (and excluding RSUs, options and warrants held by other persons) which may vest or be exercised within 60 days of April 25, 2018.

Name and Address of Beneficial Owner	Number of Common Stock Shares Beneficially Owned	Percentage of Outstanding Shares Beneficially Owned
Beneficial Owners of More than 5%:		
Jack W. Schuler(1) 100 N. Field Drive, Suite 360 Lake Forest, IL 60045	14,146,902	19.99%
George H. Schuler(2) 100 N. Field Drive, Suite 360 Lake Forest, IL 60045	10,357,579	14.6%
Larry N. Feinberg(3) c/o Oracle Investment Management, Inc. 200 Greenwich Avenue Greenwich, CT 06830	10,288,587	14.6%

FMR LLC(4) 245 Summer Street Boston, MA 02210	5,174,707	7.4%
Tino Hans Schuler(5)	3,916,229	5.6%

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100 N. Field Drive, Suite 360  
Lake Forest, IL 60045

## Directors and Named Executive Officers:

James S. Burns, D.L.S(6)	336,657	*
Veronica G.H. Jordan, Ph.D.(7)	140,738	*
James T. LaFrance (8)	517,064	*
David R. Schreiber(9)	127,805	*
Carl Severinghaus(10)	247,296	*
Eric Varma, M.D.	—	—
Valerie B. Palmieri(11)	959,075	1.4%
Fred Ferrara(12)	225,466	*
Robert Beechey	—	—
Eric Schoen(13)	438,594	*

All Directors and Executive Officers as a Group (10 persons) 2,992,695 4.25%

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\* Less than 1%

- (1) Based on the information provided in Amendment No. 8 to Schedule 13D filed with the SEC on April 19, 2018 by Jack W. Schuler with respect to himself and the Jack W. Schuler Living Trust (collectively, the “Jack Schuler Reporting Persons”). The Jack Schuler Reporting Persons reported that they have shared voting and dispositive power with respect to 14,146,902 shares of our common stock. Pursuant to the Stockholders Agreement, Mr. Jack W. Schuler is entitled to designate one individual to be nominated by the Company to serve on the Company’s Board of Directors. Mr. Jack W. Schuler is the sole trustee of the Jack W. Schuler Living Trust. The ownership reported above includes 730,560 shares of our common stock underlying warrants held by the Jack Schuler Reporting Persons, but excludes 3,961,900 shares of our common stock underlying shares of Convertible Preferred Stock held by the Jack Schuler Reporting Persons. The warrants held by the Jack Schuler Reporting Persons may not be exercised to the extent such exercise would cause the holder of such warrant (together with the holder’s affiliates and any other persons acting as a group together with the holder or any of the holder’s affiliates) to beneficially own more than 19.99% of our common stock then outstanding.
- (2) Based on the information provided in Amendment No. 8 to Schedule 13D filed with the SEC on April 19, 2018 by H. George Schuler with respect to himself, the Tanya Eva Schuler Trust and the Therese Heidi Schuler Trust (collectively, the “George Schuler Reporting Persons”). The George Schuler Reporting Persons reported that Mr. H. George Schuler had shared voting and dispositive power with respect to 10,357,579 shares of our common stock, and each of the Tanya Eva Schuler Trust and the Therese Heidi Schuler Trust had shared voting and dispositive power with respect to 3,916,229 shares of our common stock. Mr. H. George Schuler is the sole trustee of each of the Tanya Eva Schuler Trust and the Therese Heidi Schuler Trust. The ownership reported above includes 1,095,216 shares of our common stock underlying warrants beneficially owned by the George Schuler Reporting Persons, but excludes 792,200 shares of our common stock underlying shares of Convertible Preferred Stock beneficially owned by the George Schuler Reporting Persons.
- (3) Based on the information provided in Amendment No. 7 to Schedule 13D filed with the SEC on September 1, 2017 by Larry N. Feinberg with respect to himself, Oracle Associates, LLC (“Oracle Associates”), Oracle Partners, L.P. (“Oracle Partners”), Oracle Investment Management, Inc. (“Investment Manager”), Oracle Ten Fund Master, LP (“Ten Fund”) and Oracle Institutional Partners, L.P. (“Institutional Partners”) (Mr. Feinberg, together with Oracle Associates, Oracle Partners, Investment Manager, Ten Fund and Institutional Partners, the “Oracle Reporting

Persons”). The Oracle Reporting Persons reported that each of Mr. Feinberg and Oracle Associates has shared voting and dispositive power with respect to 10,288,587 shares of our common stock; Oracle Partners has shared voting and dispositive power with respect to 6,137,052 shares of our common stock; each of Investment Manager and Ten Fund has shared voting and dispositive power with respect to 2,595,980 shares of our common stock; and Institutional Partners has shared voting and dispositive power with respect to 1,555,555 shares of our common stock. Pursuant to the Stockholders Agreement, Oracle Partners and Ten Fund are together entitled to designate one individual to be nominated by the Company to serve on the Company’s Board of Directors. Oracle Associates is the general partner of each of Oracle Partners, Ten Fund and Institutional Partners. Investment Manager is the investment manager to Ten Fund. Mr. Feinberg is the managing member of Oracle Associates and the sole stockholder, director and president of Investment Manager. The ownership reported above includes 463,298 shares of our common stock underlying warrants held by the Oracle Reporting Persons. These warrants may not be exercised to the extent such exercise would cause the holder of such warrant (together with the holder’s affiliates and

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any other persons acting as a group together with the holder or any of the holder's affiliates) to beneficially own more than 19.99% of our common stock then outstanding.

- (4) Based on the information provided in Amendment No. 2 to Schedule 13G filed with the SEC on February 13, 2018 by FMR LLC with respect to itself, Abigail P. Johnson and the Select Biotechnology Portfolio (collectively, the "FMR Reporting Persons"). The FMR Reporting Persons reported that FMR LLC and Ms. Abigail P. Johnson had sole dispositive power over 5,174,707 shares of our common stock and Select Biotechnology Portfolio had sole voting power over 4,195,504 shares of our common stock. Abigail P. Johnson is a Director, the Chairman and the Chief Executive Officer of FMR LLC.
- (5) Based on the information provided in Amendment No. 8 to Schedule 13D filed with the SEC on April 19, 2018 by Tino Hans Schuler with respect to himself and the Tino Hans Schuler Trust (collectively, the "Tino Schuler Reporting Persons"). The Tino Schuler Reporting Persons reported that they had shared voting and dispositive power with respect to 3,916,229 shares of our common stock. Tino Hans Schuler is the sole trustee of the Tino Hans Schuler Trust. The ownership reported above includes 365,072 shares of our common stock underlying warrants held by the Tino Schuler Reporting Persons but excludes 245,900 shares of our common stock underlying the shares of Convertible Preferred Stock held by the Tino Schuler Reporting Persons.
- (6) Includes 36,800 RSUs and 11,250 common stock warrants vesting within 60 days of April 25, 2018.
- (7) Includes 39,800 RSUs and 5,021 common stock warrants vesting within 60 days of April 25, 2018.
- (8) Includes 48,000 RSUs, 5,021 common stock warrants and 238,625 shares issuable upon exercise of stock options vesting within 60 days of April 25, 2018.
- (9) Includes 39,600 RSUs vesting within 60 days of April 25, 2018.
- (10) Includes 35,000 RSUs vesting within 60 days of April 25, 2018.
- (11) Includes 7,531 common stock warrants and 889,581 shares issuable upon exercise of stock options vesting within 60 days of April 25, 2018.
- (12) Includes 5,021 common stock warrants and 213,570 shares issuable upon exercise of stock options vesting within 60 days of April 25, 2018.
- (13) Includes 5,021 common stock warrants and 406,212 shares issuable upon exercise of stock options vesting within 60 days of April 25, 2018.

## CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS

### 2017 Warrant Modification

On August 25, 2017, the Company entered into letter agreements with certain holders (the "Participating Holders") of outstanding warrants initially issued by the Company to the Participating Holders and certain other investors in a December 23, 2014 private placement (the "2014 Warrants"). Pursuant to the terms and subject to the conditions of the letter agreements, each Participating Holder agreed to exercise such Participating Holder's 2014 Warrants in full or in part on or before August 31, 2017, and, in consideration therefor, the Company agreed to reduce the exercise price of the 2014 Warrants from \$2.00 per share of common stock to \$1.00 per share of common stock. The Participating Holders included, among other holders, Oracle Institutional Partners, L.P., the Jack W. Schuler Living Trust, certain trusts and other entities of which H. George Schuler is the trustee or manager and Birchview Fund LLC. As a result of the exercise of the 2014 Warrants held by the Participating Holders, the Company issued approximately 3.8 million shares of common stock and received approximately \$3.8 million in aggregate gross proceeds.

### 2017 Private Placement

On February 13, 2017, the Company entered into a Securities Purchase Agreement in connection with a private placement, pursuant to which certain existing and new investors agreed to purchase 3,747,125 shares of the Company's common stock at a price per share of \$1.40 and 2,810,338 warrants at a price per warrant of \$0.125. The warrants are

exercisable for 2,810,338 shares of common stock at an exercise price of \$1.80 per share. The purchasers included, among other investors, Valerie B. Palmieri, Fred Ferrara, Eric J. Schoen, James T. LaFrance, James S. Burns, Veronica G.H. Jordan, Oracle Partners, LP, the Jack W. Schuler Living Trust, certain trusts of which H. George Schuler is the trustee and Birchview Fund LLC. The private placement closed on February 17, 2017. Gross proceeds of the private placement to the Company totaled approximately \$5.6 million.

#### Relationships Resulting from 2013 Private Placement

In connection with a May 8, 2013 private placement, on May 13, 2013, the Company entered into a Stockholders Agreement (the "Stockholders Agreement") with certain of the purchasers in the private placement (the "2013 Purchasers"). Among other things, the Stockholders Agreement provides certain of the 2013 Purchasers

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with rights to participate in any future equity offerings by the Company on the same price and terms as other investors. Pursuant to the Stockholders Agreement, certain of the 2013 Purchasers were offered the opportunity to participate in the Offerings discussed in Proposal 2, and certain trusts and other entities affiliated with Jack W. Schuler, H. George Schuler and Tino Hans Schuler purchased shares of our common stock and/or shares of Convertible Preferred Stock in the Offerings. The Offerings resulted in net proceeds to the Company, after deducting underwriting discounts and commissions and estimated offering expenses, of approximately \$13.6 million.

In addition, in connection with the May 8, 2013 private placement, Oracle Partners, LP and Oracle Ten Fund Master LP, together, and Jack W. Schuler (the "Principal Purchasers") received rights to prohibit the Company from taking any of the following actions unless agreed to by at least one of the Principal Purchasers:

- Making any acquisition with a value greater than \$2 million;
- Entering into, or amending the terms of our agreements with Quest Diagnostics, which consent shall not be unreasonably withheld, conditioned or delayed following good faith consultation with the Company;
- Submitting any resolution at a meeting of stockholders or in any other manner changing or authorizing a change in the size of our Board;
- Offering, selling or issuing any securities senior to the Company's common stock;
- Amending our Certificate of Incorporation or Bylaws in any manner that effects the rights, privileges or economics of the Company's common stock or warrants;
- Making any action that would result in a change in control of the Company or an insolvency event;
- Paying or declaring dividends or distributing the assets of the Company; or
- Adopting or amending any shareholder rights plan.

In addition, the Principal Purchasers each received the right to nominate a member to serve on our Board. Dr. Varma, currently a partner at Oracle Investment Management, Inc., was designated as a Board nominee by Oracle Partners, LP and Oracle Ten Fund Master, LP pursuant to the Stockholders Agreement. The Board appointed Dr. Varma as a director on September 12, 2013. Dr. Varma is not standing for re-election at the Annual Meeting. Oracle Partners, LP and Oracle Ten Fund Master, LP have not yet notified the Company of the person who will succeed Dr. Varma as the Oracle Partners, LP and Oracle Ten Fund Master, LP designee on the Board. James T. LaFrance was designated as a Board nominee by Jack W. Schuler. The Board appointed Mr. LaFrance as a director and Chairman of the Board on December 12, 2013.

The rights and prohibitions of the 2013 Purchasers under the Stockholders Agreement terminate for each 2013 Purchaser when it ceases to own or hold less than 50% of the shares, warrants or warrant shares than were purchased at the closing of the private placement.

#### Directors and Executive Officers

We have entered into indemnification agreements with each of our directors and executive officers, which require us to indemnify our directors and officers to the fullest extent permitted by law in the State of Delaware.

SECTION 16(a) BENEFICIAL OWNERSHIP REPORTING COMPLIANCE

Section 16(a) of the Exchange Act requires our executive officers and directors, and persons who own more than 10% of a registered class of our equity securities, to file reports of ownership and changes in ownership with the SEC and with any national securities exchange on which such securities are traded or quoted. Executive officers, directors and such stockholders are required by SEC regulations to furnish us with copies of all Section 16(a) forms they file. As a practical matter, we assist our executive officers and directors by completing and filing Section 16 reports on their behalf. Based solely on a review of the copies of such reports furnished to us, and the written representations of our executive officers and directors, we believe that our executive officers and directors, and persons who own more than 10% of a registered class of our equity securities, complied with all applicable filing requirements for the year ended December 31, 2017, except that H. George Schuler did not timely report ten transactions on one Form 4, Jack W. Schuler did not timely report two transactions on one Form 4 and Larry N. Feinberg did not timely report two transactions on one Form 4.

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PROPOSAL 4: APPROVAL OF AN AMENDMENT TO THE VERMILLION, INC. SECOND AMENDED AND RESTATED 2010 STOCK INCENTIVE PLAN

The Board of Directors recommends that the stockholders approve an amendment (the “Amendment”) to the Vermillion, Inc. Second Amended and Restated 2010 Stock Incentive Plan (the “2010 Plan”) to effectuate an increase in the number of shares of common stock of the Company authorized to be granted under the 2010 Plan by 4,000,000 shares so that a total of 12,122,983 shares of common stock are authorized to be granted under the 2010 Plan (reduced by 7,393,196, which represents the number of shares of common stock previously granted under the 2010 Plan). Stockholder approval of the Amendment will provide the Company with flexibility to grant awards from a pool of shares available under the 2010 Plan for purposes of recruiting, retaining, motivating and rewarding participants in the 2010 Plan. Upon the recommendation of the Compensation Committee, the Board of Directors has approved the Amendment and has directed that it be submitted for stockholder approval at the Annual Meeting. This Proposal No. 4, if approved, would become effective upon stockholder approval. If stockholders do not approve the Amendment, grants will continue to be made under the 2010 Plan as currently in effect to the extent shares of common stock are available.

#### Background

The 2010 Plan was initially adopted by the Board of Directors in February 2010 and approved by our stockholders in December 2010. A total of 1,322,983 shares of common stock were initially reserved for issuance under the 2010 Plan. In December 2013, stockholders approved an amendment and restatement to the 2010 Plan, which increased the number of shares available for grant by 2,300,000 shares, to a total of 3,622,983 shares of common stock authorized to be granted under the 2010 Plan. In June 2015, stockholders approved a second amendment and restatement to the 2010 Plan, which increased the number of shares available for grant by an additional 4,500,000 shares, to a total of 8,122,983 shares of common stock authorized to be granted under the 2010 Plan. Of the 8,122,983 shares of common stock authorized under the 2010 Plan, 729,787 shares remained available for grant as of April \_\_, 2018. The Amendment would increase the number of shares of common stock available for future awards under the 2010 Plan as of the date of stockholder approval of the Amendment by 4,000,000 to a total of approximately 4,729,787 shares of common stock. Based on the Company’s current stock price and grant history, the Company anticipates that this share pool as being necessary for future awards to employees, directors and consultants for approximately the next two years.

The Board of Directors believes that granting equity-based compensation awards to our officers, employees, directors and consultants is an effective means to provide appropriate incentives for sustaining our financial and operating performance and leadership excellence, to align the interests of award recipients with those of our stockholders and to encourage them to remain with us for long and productive careers. If the Amendment is not adopted, the Board of Directors believes it will have significant difficulties in recruiting, retaining, motivating and rewarding officers and employees, making it difficult for the Company to continue operating.

#### Summary of the Amended and Restated 2010 Plan

The following summary is qualified in its entirety by reference to the complete text of the 2010 Plan, as proposed to be amended, attached as Appendix B to this proxy statement.

Purpose. The purposes of the 2010 Plan are (i) to enhance the Company's ability to attract highly qualified personnel; (ii) to strengthen its retention capabilities; (iii) to enhance the long-term performance and competitiveness of the Company; and (iv) to align the interests of participants in the 2010 Plan with those of the Company's stockholders.

Administration. The 2010 Plan is administered by the Compensation Committee of the Board of Directors (the "Committee"), provided that the Board of Directors may act in lieu of the Committee on any matter. The Committee will hold meetings at such times and places as it may determine and will make such rules and regulations for the conduct of its business as it deems advisable.



**Eligibility.** Awards may be granted to employees, directors and consultants of the Company. The Committee will decide who should receive awards and what kind of awards they should receive. As of April \_\_, 2018, approximately 38 employees and six non-employee directors would be eligible to participate in the 2010 Plan if selected by the Compensation Committee.

**Authorized Number of Shares.** The 2010 Plan, as amended, increases the number of authorized shares under the 2010 Plan by 4,000,000 to a total of 12,122,983 shares of the Company's common stock, (reduced by 7,393,196, which represents the number of shares of common stock previously granted under the 2010 Plan), subject to the adjustment provisions included in the 2010 Plan. As of April \_\_, 2018, the closing stock price for a share of the Company's common stock, as reported on Nasdaq, was \$\_\_ per share.

**Replenishment, Counting of Shares.** To the extent that shares underlying any awards under the 2010 Plan are not issued or delivered by reason of (i) forfeiture, cancellation, expiration or termination (other than by exercise) or (ii) the settlement of such shares in cash, then such shares shall be added back to the shares available for issuance under the Plan. Notwithstanding the foregoing, the following shares shall not be added to the shares authorized for grant under the Plan: (i) shares that were subject to a stock option or an SAR and were not issued or delivered upon the net settlement or net exercise of such stock option or SAR; (ii) shares delivered to or withheld by the Company to pay the purchase price or the withholding taxes related to an outstanding award or (iii) shares repurchased by the Company on the open market with the proceeds of an option exercise. Further, and to the extent permitted under applicable law, the maximum number of shares available for delivery under the 2010 Plan will not be reduced by any shares issued under the 2010 Plan through the settlement, assumption, or substitution of outstanding awards or obligations to grant future awards as a condition of the Company's or an affiliate's acquiring another entity.

**Award Limits.** Under the terms of the 2010 Plan and subject to adjustment in accordance with the adjustment provisions of the 2010 Plan, the maximum number of shares with respect to which options, SARs or a combination thereof, may be granted during any fiscal year of the Company to any one person is 1,000,000. In addition, the maximum Performance Award, that any one person may receive during any 12-month period during a performance period will not exceed 500,000 shares, subject to the adjustment provisions included in the 2010 Plan, or \$2,000,000 in the case of cash-settled performance units.

**Types of Awards.** The Committee may grant the following types of awards under the 2010 Plan: options; SARs; restricted shares, restricted share units, and unrestricted shares; deferred share units; performance and cash settled awards, and dividend equivalent rights.

**Options.** An option is the right to purchase one or more shares of common stock at a specified price, as determined by the Committee. The Committee may grant non-qualified options ("Non-ISO") and incentive options ("ISO") under the 2010 Plan. An option is exercisable at such times and subject to such terms and conditions as the Committee determines. The exercise price of an option will not be less than 100% of the fair market value of a share of common stock on the date that the option is granted. Unless otherwise provided in applicable award agreements, options granted under the 2010 Plan are required to be exercised within 90 days after termination of the participant's continuous service (one year if termination is due to death, disability or retirement). No option will remain exercisable beyond ten years after its grant date. ISOs may only be granted to employees (including officers who are employees) of the Company or an affiliate that is a "parent corporation" or "subsidiary corporation" within the meaning of Code Section 424. The 2010 Plan also provides that ISO treatment may not be available for options that become first exercisable in any calendar year to the extent the fair market value on the date that the option is granted of the underlying shares of common stock that are the subject of the option exceeds \$100,000. Furthermore, the exercise price of ISOs may not be less than 110% of the fair market value of the underlying shares of common stock subject to the option on the date that the option is granted for employees that own more than ten percent of the Company's shares of common stock on the grant date.

Share Appreciation Rights. An SAR is a right to receive an amount in any combination of cash or shares equal in value to the excess of the fair market value of the shares covered by such SAR on the date of exercise over the aggregate exercise price of the SAR for such shares. SARs may be granted freestanding or in tandem with related options. The exercise price of an SAR granted in tandem with option will be equal to the exercise price of the related option, and may be exercised for all or part of the shares covered by such option upon surrender of the right to exercise the equivalent portion of the related option. Any SAR granted in tandem with an ISO must contain

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such terms as may be required to comply with the provisions of Code Section 422. The exercise price of a freestanding SAR will be not less than the fair market value of a share of common stock on the date the SAR is granted. No SAR will remain exercisable beyond ten years after its grant date.

**Restricted Shares, Restricted Share Units and Unrestricted Shares Awards.** Restricted shares and restricted share units (“RSU”) are awards of common stock that are subject to substantial risks of forfeiture for a period of time and upon such other terms and conditions as the Committee determines. The Committee may make restricted share and RSU awards with or without the requirement for payment of cash or other consideration. Unrestricted shares are awards of common stock which shall vest in full upon the grant date or such other date as the Committee may determine or which the Committee may issue pursuant to any program under which eligible persons may elect to pay for such shares or to receive unrestricted shares in lieu of cash bonuses that would otherwise be paid.

**Deferred Share Units.** The Committee may make deferred share unit (“DSU”) awards to eligible persons and may permit eligible persons to irrevocably elect, on an election form provided by and acceptable to the Committee, to forego the receipt of cash or other compensation (including the shares deliverable pursuant to any RSU award) and in lieu thereof to have the Company credit to an internal plan account a number of DSUs having a fair market value equal to the shares and other compensation deferred. These credits will be made at the end of each calendar quarter (or other period determined by the Committee) during which compensation is deferred. Each participant shall be 100% vested at all times in any shares subject to DSUs. Unless an award agreement provides otherwise, the Company shall settle a participant’s DSU award by delivering one share for each DSU, in five substantially equal annual installments that are issued before the last day of each of the five calendar years that end after the date on which the participant’s continuous service ends for any reason. The participant may elect a different form of distribution, only on a form provided by and acceptable to the Committee, that permits the participant to select any combination of a lump sum and annual installments that are triggered by, and completed within ten years following the last day of the participant’s continuous service. In the event that a participant suffers an unforeseeable emergency, the participant may apply to the Committee for an immediate distribution of all or a portion of the participant’s DSUs.

**Performance and Cash-Settled Awards.** The Committee may grant performance awards, including performance units, to any eligible person, including performance unit awards that have substantially the same financial benefits and other terms and conditions as options, SARs, RSUs, or DSUs, but are settled only in cash. The Committee may permit a participant who is a member of a select group of management or highly compensated employees (within the meaning of the Employee Retirement Income Security Act) to irrevocably elect, on a form provided by and acceptable to the Committee, to defer the receipt of all or a percentage of the cash or shares that would otherwise be transferred to the participant upon the vesting of the award.

**Dividend Equivalent Rights.** A dividend equivalent right shall entitle an eligible person who has received an award to be credited with dividends that the Company declares and pays (in cash, shares, or other securities) to its stockholders of record between the grant date and the settlement date of the award. Any dividend equivalent rights arising from cash dividends shall be immediately deemed to be reinvested in shares having a fair market value equal to such cash dividends. The Company shall settle dividend equivalent rights by issuing shares to a participant to the extent they were previously credited to the participant as dividend equivalent rights and are attributable to shares that the participant is receiving as settlement of another award. The Committee may provide for an earlier or later settlement event for dividend equivalent rights, and complete or partial settlement in cash rather than in shares. Any dividend equivalent right associated with an award subject to performance-based vesting conditions shall be deposited with the Company and shall be subject to the same restrictions as the underlying award.

**Taxes; Withholding.** As a condition to the receipt of any award or any distribution in connection therewith, participants shall make such arrangements as the Company may require for the satisfaction of any applicable federal, state, local, or foreign withholding tax obligations that may arise in connection with the awards.

Non-Transferability of Awards. Awards may not be sold, pledged, assigned, hypothecated, transferred or disposed of in any manner other than by will or by the laws of descent or distribution. During the life of the participant, awards are exercisable only by the holder, by the duly-authorized legal representative of a holder who is disabled, or by a permitted transferee. The Committee may in its discretion provide in an award agreement that an award in the form of a Non-ISO, a share-settled SAR, restricted shares, or performance awards may be transferred,

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on such terms and conditions as the Committee deems appropriate, either by instrument to the participant's immediate family, by instrument to an inter vivos or testamentary trust in which the award is to be passed to the participant's designated beneficiaries, or by gift to charitable institutions.

**Forfeiture and Clawback.** Unless otherwise provided in an agreement granting an award, the Company has the following recourse against a participant who does not comply with certain employment-related covenants, either during employment or for certain periods after ceasing to be employed: the Company may terminate any outstanding, unexercised, unexpired, unpaid, or deferred awards; rescind any exercise, payment or delivery pursuant to the award; or recapture any shares (whether restricted or unrestricted) or proceeds from the participant's sale of shares issued pursuant to the award. These remedies are also generally available to the Company for awards that would have had a lower grant level, vesting, or payment if a participant's fraud or misconduct had not caused or partially caused the need for a material financial restatement by the Company or any affiliate. In addition, all awards or proceeds from the sale of awards, made or earned pursuant to the 2010 Plan will be subject to the right of the Company to full recovery (with reasonable interest thereon) in the event that the Board determines reasonably and in good faith that any participant's fraud or misconduct has caused or partially caused the need for a material restatement of the Company's financial statements for any fiscal year to which the award relates.

**Change in Capital Structure.** In the event of a change in the outstanding shares of common stock due to a stock-split, reverse stock-split, stock dividend, combination, recapitalization or reclassification of the shares, merger, consolidation, change in form of organization, or any other increase or decrease in the number of issued shares effected without receipt of consideration by the Company, the Committee shall equitably adjust the number of shares covered by each outstanding award, the number of shares that have been authorized for issuance under the 2010 Plan but as to which no awards have yet been granted or that have been returned to the 2010 Plan upon cancellation, forfeiture or expiration of an award, the per person maximum, set forth in the 2010 Plan, and the exercise or other price per share covered by each outstanding award.

**Change in Control.** In the event of a change in control but subject to the terms of any award agreements or employment-related agreements between the Company or any affiliates and any participant, each outstanding award shall be assumed or a substantially equivalent award shall be substituted by the surviving or successor company or a parent or subsidiary of such successor company upon consummation of the change in control. Notwithstanding the foregoing, instead of having outstanding awards be assumed or replaced with equivalent awards by the successor company, the Committee may in its sole and absolute discretion and authority, (i) accelerate the vesting of awards so that awards shall vest (and, to the extent applicable, become exercisable) as to the shares that otherwise would have been unvested and provide that repurchase rights of the Company with respect to shares issued pursuant to an award shall lapse as to the shares subject to such repurchase right; (ii) arrange or otherwise provide for the payment of cash or other consideration to participants in exchange for the satisfaction and cancellation of outstanding awards (with the Committee determining the amount payable to each participant based on the fair market value, on the date of the change in control, of the award being cancelled, based on any reasonable valuation method selected by the Committee); (iii) terminate all or some awards upon the consummation of the change in control, provided that the Committee shall provide for vesting of such awards in full as of a date immediately prior to consummation of the change in control; and (iv) make such other modifications, adjustments or amendments to outstanding awards or the 2010 Plan as the Committee deems necessary or appropriate.

**Plan Amendment and Termination.** The Board of Directors may amend or terminate the 2010 Plan as it shall deem advisable; provided that no change shall be made that increases the total number of shares reserved for issuance pursuant to awards unless such change is authorized by the stockholders of the Company.

**Term of Plan.** If not sooner terminated by the Board, the 2010 Plan shall terminate at the close of business on the date ten years after June 18, 2015. No awards shall be made under the 2010 Plan after its termination; however, termination of the 2010 Plan shall not affect the Committee's ability to exercise the powers granted to it with respect to awards granted under the Plan prior to the date of such termination.

Federal Income Tax Aspects of the Amended and Restated 2010 Plan

This is a brief summary of the United States federal income tax aspects of awards that may be made under the 2010 Plan, as amended and restated, based on existing U.S. federal income tax laws as of the date of this proxy

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statement. This summary provides only the basic tax rules and is not intended, and should not be relied upon, as tax guidance for participants in the 2010 Plan. It does not describe the implications, if any, of a number of special tax rules, including, without limitation, the alternative minimum tax, the golden parachute tax rules under Sections 280G and 4999 of the Code, and foreign, state and local tax laws. In addition, this summary assumes that all awards are exempt from, or comply with, the rules under Section 409A of the Code regarding nonqualified deferred compensation. Changes to the tax laws could alter the tax consequences described below.

**Incentive Stock Options (ISO).** The grant of an ISO will not be a taxable event for the participant or for the Company. A participant will not recognize taxable income upon exercise of an ISO (except for purposes of the alternative minimum tax), and any gain realized upon a disposition of shares received pursuant to the exercise of an ISO will be taxed as long-term capital gain if the participant holds the shares for at least two years after the date of grant and for one year after the date of exercise (the “holding period requirement”). The Company will not be entitled to any business expense deduction with respect to the exercise or disposition of an ISO that meets the holding period requirement. To qualify for the foregoing tax treatment, the participant generally must exercise the ISO while the participant is our employee or an employee of our subsidiary or, if the participant has terminated employment, no later than three months after the participant terminated employment. If all of the foregoing requirements are met except the holding period requirement mentioned above, the participant will recognize ordinary income upon the disposition of the common stock acquired upon exercise of an ISO in an amount generally equal to the excess of the fair market value of the common stock at the time the option was exercised over the option exercise price (but not in excess of the gain realized on the sale). The balance of the realized gain, if any, will be capital gain.

**Non-Qualified Options (“Non-ISO”).** The grant of a Non-ISO will not be a taxable event for the participant or the Company. Upon exercising a Non-ISO, a participant will recognize ordinary income in an amount equal to the difference between the exercise price and the fair market value of the common stock on the date of exercise. Upon a subsequent sale or exchange of shares acquired pursuant to the exercise of a Non-ISO, the participant will have taxable capital gain or loss, measured by the difference between the amount realized on the disposition and the tax basis of the shares of common stock (generally, the amount paid for the shares plus the amount treated as ordinary income at the time the option was exercised).

**Stock Appreciation Rights.** There are no immediate tax consequences of receiving an award of stock appreciation rights. Upon exercising a stock appreciation right, a participant will recognize ordinary income in an amount equal to the fair market value of any shares delivered and any cash paid by the Company (generally, the difference between the exercise price and the fair market value of the common stock on the date of exercise).

**Unrestricted Stock Awards.** Upon receipt of an unrestricted stock award, a participant generally will recognize compensation taxable as ordinary income in an amount equal to the excess of the fair market value of the shares at such time over the amount, if any, paid by the participant with respect to the shares.

**Restricted Stock.** An award of restricted stock will not be a taxable event for the participant, provided that the shares are subject to restrictions (that is, the restricted stock is nontransferable and subject to a substantial risk of forfeiture). However, the participant may elect under Section 83(b) of the Code to recognize ordinary income in the year of the grant in an amount equal to the fair market value of the common stock on the date the award is granted (less the purchase price, if any), determined without regard to the restrictions. If the participant does not make such a Section 83(b) election, the fair market value of the common stock on the date the restrictions constituting a substantial risk of forfeiture lapse (less the purchase price, if any) will be treated as ordinary income to the participant and will be taxable in the year the restrictions constituting a substantial risk of forfeiture lapse. A participant who is awarded shares that are not subject to restrictions constituting a substantial risk of forfeiture will recognize ordinary income equal to the fair market value of the shares on the date of the award.

**Restricted Share Units and Performance/Cash-Settled Awards.** The taxation of these awards will depend on the specific terms of the award. Generally, the grant of restricted share units or performance/cash-settled awards will

have no federal income tax consequences for the Company or for the participant and the participant recognizes ordinary income at the time such awards are settled equal to the fair market value of any shares or cash paid.

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Section 162(m) of the Code. Section 162(m) of the Code generally limits to \$1 million the amount that a publicly held corporation is allowed each year to deduct for the compensation paid to certain current and former executive officers of the corporation, including each of the corporation's chief executive officer, chief financial officer and three most highly compensated executive officers other than the chief executive officer and the chief financial officer.

General. Any compensation includable in the gross income of a participant who is an employee will generally be subject to applicable federal, state and local income tax withholding. Subject to the restrictions of Section 162(m) of the Code or any other applicable restrictions on the deductibility of compensation, the Company generally will be entitled to a business expense deduction in the same amount and at the same time as the participant recognizes ordinary income.

#### Historical Stock Awards under Plan

The following table sets forth the number of options and shares of restricted stock units that have been granted to the listed individuals or groups under the 2010 Plan since its inception until April \_\_, 2018.

	Number of Options Granted	Number of Restricted Stock Units Granted
Valerie B. Palmieri, President and Chief Executive Officer	2,025,000	15,000
Fred Ferrara, Chief Operating Officer	515,000	—
Robert Beechey, Chief Financial Officer	300,000	—
Eric J. Schoen, Former Senior Vice President, Finance and Chief Accounting Officer(1)	455,275	—
All Current Executive Officers	2,840,000	15,000
All Current Non-Employee Directors	540,400	1,114,918
All Employees (excluding current executive officers)	834,168	
Total	4,214,568	1,129,918

(1) Mr. Schoen separated as an employee of the Company, effective December 18, 2017.

New Plan Benefits

The Committee will grant awards under the amended and restated 2010 Plan at its discretion. Consequently, except as noted below, it is not possible to determine at this time the amount or dollar value of awards to be provided under the amended and restated 2010 Plan.

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THE BOARD OF DIRECTORS UNANIMOUSLY RECOMMENDS THAT YOU VOTE “FOR” THE APPROVAL OF THE AMENDMENT TO THE VERMILLION, INC. AMENDED AND RESTATED 2010 STOCK INCENTIVE PLAN.

### Equity Compensation Plan Information

We currently maintain two equity-based compensation plans that were approved by our stockholders. The plans are the Vermillion, Inc. 2000 Stock Plan (the “2000 Plan”) and the 2010 Plan.

**2000 Plan.** The authority of Vermillion’s Board of Directors to grant new stock options and awards under the 2000 Plan terminated in 2010. The Board of Directors continues to administer the 2000 Plan with respect to the stock options that remain outstanding under the 2000 Plan. At December 31, 2017, options to purchase 18,000 shares of Vermillion’s common stock remained outstanding under the 2000 Plan.

**2010 Plan.** The 2010 Plan is administered by the Compensation Committee of Vermillion’s Board of Directors. Our employees, directors, and consultants are eligible to receive awards under the 2010 Plan. The 2010 Plan permits the granting of a variety of awards, including stock options, share appreciation rights, restricted shares, restricted share units, unrestricted shares, deferred share units, performance and cash-settled awards, and dividend equivalent rights. We are authorized to issue up to 8,122,983 shares of Vermillion’s common stock under the 2010 Plan, subject to adjustment as provided in the 2010 Plan. At December 31, 2017, options to purchase 4,201,568 shares of common stock remained outstanding under the 2010 Plan.

The number of shares of Vermillion’s common stock to be issued upon exercise of outstanding stock options, the weighted-average exercise price of outstanding stock options and the number of shares available for future stock option grants and stock awards under equity compensation plans as of December 31, 2017, were as follows:

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 Shares Reflected in First Column)	
Equity compensation plans approved by security holders	4,219,568	(1) \$ 1.86	(2) 2,054,633	(3)
Equity compensation plans not approved by security holders	-		-	
Total	4,219,568		2,054,633	

(1) Includes  
outstanding  
stock  
options for  
18,000  
shares of  
our common  
stock under  
the 2000  
Plan and  
4,201,568  
shares of  
our common  
stock under  
the 2010  
Plan.

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(2) Includes the weighted average stock price for outstanding stock options of \$2.04 under the 2000 Plan and \$1.86 for the 2010 Plan.

(3) Represents shares of our common stock for the 2010 Plan. No future awards shall occur under the 2000 Plan.

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**PROPOSAL 5: RATIFICATION OF THE SELECTION OF THE INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM FOR VERMILLION**

The Audit Committee of the Board has selected BDO USA, LLP, an independent registered public accounting firm, to audit our financial statements for the year ending December 31, 2018, and recommends that stockholders vote for ratification of such selection. Notwithstanding this selection, the Audit Committee, in its discretion, may direct the appointment of a new independent registered public accounting firm at any time during the year if the Audit Committee feels that such a change would be in the best interests of our stockholders. In the event of a negative vote on ratification, the Audit Committee may reconsider its selection.

BDO USA, LLP was appointed as our independent registered public accounting firm by the Audit Committee of the Board in April 2012. It is currently serving as our independent registered public accounting firm. BDO USA, LLP has represented to us that it is independent with respect to the Company within the meaning of the published rules and regulations of the SEC.

One or more representatives of BDO USA, LLP plan to attend the Annual Meeting and will be available to answer appropriate questions from stockholders and, although they do not expect to do so, they will have the opportunity to make a statement if they so desire.

**Audit Fees and Non-Audit Fees**

The following is a summary of the fees and services provided by BDO USA, LLP for 2017 and 2016.

	2017	2016
Audit fees	\$ 204,645	\$ 236,590
Audit-related fees	—	—
Tax fees	22,720 (1)	58,596 (1)
All other fees	—	—
Total	\$ 227,365	\$ 295,186

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(1) Represent fees for the preparation of our 2016 and 2015 federal and state tax returns. 2016 includes fees for preparation of a Section 382 Net Operating Loss limitation study.

**Audit Committee Pre-Approval of Policies and Procedures**

The Audit Committee is responsible for appointing, compensating and overseeing the work of the independent registered public accounting firm. The Audit Committee has established a pre-approval procedure for all audit and permissible non-audit services to be performed by our independent registered public accounting firm. The pre-approval policy requires that requests for services by the independent registered public accounting firm be

submitted to our Chief Financial Officer for review and approval. Any requests that are approved by the Chief Financial Officer are then aggregated and submitted to the Audit Committee for approval at a meeting of the Audit Committee. Requests may be made with respect to either specific services or a type of service for predictable or recurring services.

All audit, audit-related, tax and other services, which include all permissible non-audit services, provided to us by BDO USA, LLP were pre-approved by the Audit Committee. Additionally, the Audit Committee concluded that the provision of those services by BDO USA, LLP were compatible with the maintenance of the independent registered public accounting firm's independence.

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THE AUDIT COMMITTEE AND THE BOARD OF DIRECTORS RECOMMEND THAT YOU VOTE “FOR” THE RATIFICATION OF THE SELECTION OF BDO USA, LLP AS OUR INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM FOR THE FISCAL YEAR ENDING DECEMBER 31, 2018.

#### REPORT OF THE AUDIT COMMITTEE<sup>1</sup>

The Audit Committee reviews the Company’s financial reporting process on behalf of the Board. Management has the primary responsibility for the financial statements and the reporting process, including the system of internal financial controls. Management has represented to the Audit Committee that the Company’s consolidated financial statements for the fiscal year ended December 31, 2017 were prepared in accordance with generally accepted accounting principles, and the Audit Committee has reviewed and discussed the audited financial statements of the Company with management of the Company and BDO USA, LLP which audited the Company’s consolidated financial statements for the fiscal year ended December 31, 2017. In addition, the Audit Committee has discussed with BDO USA, LLP the matters required to be discussed by the applicable requirements of the Public Company Accounting Oversight Board (“PCAOB”) and the SEC. The Audit Committee has also received from BDO USA, LLP the written disclosures and the letter required by the applicable requirements of the PCAOB regarding BDO USA, LLP’s communications with the audit committee concerning independence and has discussed with BDO USA, LLP the firm’s independence from the Company and its management. Based on the foregoing, the Audit Committee recommended to the Board that the audited financial statements be included in the Company’s Annual Report on Form 10-K for the fiscal year ended December 31, 2017 for filing with the SEC.

Respectfully Submitted by:

Members of the Audit Committee

David Schreiber, Chairperson

Veronica G.H. Jordan, Ph.D.

Carl Severinghaus

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1. The material in this report is not “soliciting material,” is not deemed “filed” with the SEC and is not to be incorporated by reference into any of our filings under the Securities Act, or the Exchange Act, whether made before or after the date hereof and irrespective of any general incorporation language in any such filing.



OTHER MATTERS

We filed an Annual Report on Form 10-K for the year ended December 31, 2017 with the SEC on March 13, 2018. Stockholders may obtain a copy of this report, free of charge, by writing to Vermillion, Inc., Attn: Investor Relations, 12117 Bee Caves Road, Building Three, Suite 100, Austin, Texas 78738. In addition, copies of our annual, quarterly and current reports are available at <http://www.vermillion.com>.

Our management and our Board know of no matters to come before the Annual Meeting other than the matters referred to in the Notice of Annual Meeting of Stockholders. The persons named in the enclosed proxy will vote the shares represented thereby in accordance with the recommendation of the Board as to any proposal properly presented at the Annual Meeting, or if no recommendation is made by the Board, then pursuant to the authority granted in the proxy.

IMPORTANT NOTE

The matters to be considered at the Annual Meeting are of great importance to our stockholders. Accordingly, you are urged to read and carefully consider the information presented in this proxy statement. Your vote is important, no matter how many or how few shares you hold. Please sign and date the enclosed proxy card and return it today in the enclosed pre-addressed postage-paid envelope. If your shares are held in street name, only your broker or bank can vote your shares and only upon receipt of your specific instructions. Please return the enclosed proxy card to your broker and contact the person responsible for your account to ensure that a proxy card is voted on your behalf.

BY ORDER  
OF THE  
BOARD OF  
DIRECTORS

Valerie B.  
Palmieri  
President,  
Chief  
Executive  
Officer and  
Director

Austin, Texas  
\_\_\_\_\_, 2018



Appendix A

VERMILLION, INC.

CERTIFICATE OF DESIGNATIONS, PREFERENCES AND RIGHTS

OF

SERIES B CONVERTIBLE PREFERRED STOCK

PURSUANT TO SECTION 151 OF THE

DELAWARE GENERAL CORPORATION LAW

VERMILLION, INC., a Delaware corporation (the “Corporation”), does hereby certify that the following resolution was duly adopted by a duly authorized committee of the Board of Directors of the Corporation on April 13, 2018, and remains in full force and effect on the date hereof:

RESOLVED, that pursuant to authority expressly set forth in the Corporation’s Fourth Amended and Restated Certificate of Incorporation, as amended (the “Certificate of Incorporation”), and the Corporation’s Fifth Amended and Restated Bylaws (the “Bylaws”), and in accordance with Section 151 of the General Corporation Law of the State of Delaware, there is hereby created, out of the 5,000,000 shares of the Corporation’s preferred stock, par value \$0.001 per share (the “Preferred Stock”), remaining authorized, unissued and undesignated, a series of Preferred Stock designated as the Series B Convertible Preferred Stock of the Corporation, and the designation, number of shares, powers, preferences, rights, qualifications, limitations and restrictions thereof (in addition to any provisions set forth in the Certificate of Incorporation that are applicable to the Preferred Stock of all classes and series) are hereby fixed, and the Certificate of Designations, Preferences and Rights of Series B Convertible Preferred Stock is hereby approved as follows:

SECTION 1. Definitions.

For the purposes of this Certificate of Designations, the following terms shall have the following meanings:

“Alternate Consideration” shall have the meaning set forth in Section 7(c).

“Business Day” means any day except Saturday, Sunday, any day which shall be a federal legal holiday in the United States or any day on which banking institutions in the State of New York are authorized or required by law or other governmental action to close.

“Bylaws” shall have the meaning set forth in the preamble to this Certificate of Designations.

“Certificate of Incorporation” shall have the meaning set forth in the preamble to this Certificate of Designations.

“Common Stock” means the Corporation’s common stock, par value \$0.001 per share, and stock of any other class of securities into which such common stock may hereafter be reclassified or changed into.

“Conversion” shall have the meaning set forth in Section 6(a).

“Conversion Date” shall have the meaning set forth in Section 7(e).

“Conversion Price” means \$1.00, subject to adjustment from time to time pursuant to Section 7(c).

“Conversion Shares” means, collectively, the shares of Common Stock issuable upon conversion of the shares of Series B Preferred Stock in accordance with the terms hereof.

“Corporation” shall have the meaning set forth in the preamble to this Certificate of Designations.

“Corporation Stockholders’ Meeting” shall have the meaning set forth in Section 6(a).

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“DGCL” shall mean the General Corporation Law of the State of Delaware, as amended from time to time.

“Distributions” shall have the meaning set forth in Section 5(a).

“Fundamental Transaction” shall have the meaning set forth in Section 7(c).

“Holder” means any holder of a share of Series B Preferred Stock.

“Issuance Date” means April 17, 2018.

“Junior Securities” shall have the meaning set forth in Section 5(a).

“Nasdaq” means the Nasdaq Stock Market LLC.

“Parity Securities” shall have the meaning set forth in Section 5(a).

“Person” means any individual or corporation, partnership, trust, incorporated or unincorporated association, joint venture, limited liability company, joint stock company, government (or an agency or subdivision thereof) or other entity of any kind.

“Preferred Stock” shall have the meaning set forth in the preamble to this Certificate of Designations.

“Recommendation” shall have the meaning set forth in Section 6(a).

“Requisite Stockholder Approval” shall have the meaning set forth in Section 6(a).

“Senior Securities” shall have the meaning set forth in Section 5(a).

“Series B Preferred Stock” shall have the meaning set forth in Section 2(a).

“Series B Preferred Stock Register” shall have the meaning set forth in Section 2(c).

“Stated Value” means \$100.00.

## SECTION 2. Designation, Amount and Par Value; Assignment.

(a) The series of Preferred Stock designated by this Certificate of Designations shall be designated as the Corporation’s Series B Convertible Preferred Stock (the “Series B Preferred Stock”) and the number of shares so designated shall be 50,000. Subject to the requirements of the DGCL, the Certificate of Incorporation and this Certificate of Designations, the number of shares of Preferred Stock that are designated as Series B Preferred Stock may be increased or decreased by vote of the Board of Directors of the Corporation; provided, that no decrease shall reduce the number of shares of Series B Preferred Stock to a number less than the number of such shares then outstanding. Each share of Series B Preferred Stock shall have a par value of \$0.001 per share.

(b) The Series B Preferred Stock may be issued in certificated form or in book-entry form. To the extent that any shares of Series B Preferred Stock are issued in book-entry form, references herein to “certificates” shall instead refer to the book-entry notation relating to such shares.

(c) The Corporation shall register shares of the Series B Preferred Stock, upon records to be maintained by the Corporation for that purpose (the "Series B Preferred Stock Register"), in the name of the Holders thereof from time to time. The Corporation may deem and treat the registered Holder of shares of Series B Preferred Stock as the absolute owner thereof for the purpose of any conversion thereof and for all other purposes. The Corporation shall register the transfer of any shares of Series B Preferred Stock in the Series B Preferred Stock Register, upon surrender of the certificates evidencing such shares to be transferred, if any, duly endorsed by the Holder thereof, to the Corporation at its address specified herein. Upon any such registration or transfer, a new

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certificate evidencing the shares of Series B Preferred Stock so transferred shall be issued to the transferee and a new certificate evidencing the remaining portion of the shares not so transferred, if any, shall be issued to the transferring Holder, in each case, within three Business Days. The provisions of this Certificate of Designations are intended to be for the benefit of all Holders from time to time and shall be enforceable by any such Holder.

#### SECTION 3. Dividends.

Holders shall not be entitled to receive any dividends in respect of the Series B Preferred Stock, unless and until specifically declared by the Board of Directors of the Corporation to be payable to the Holders of the Series B Preferred Stock.

#### SECTION 4. Voting Rights.

Except as otherwise provided herein or as otherwise required by the DGCL, the Series B Preferred Stock shall have no voting rights. However, as long as any shares of Series B Preferred Stock are outstanding, the Corporation shall not, without the affirmative vote of the Holders of all of the then outstanding shares of the Series B Preferred Stock, (a) adversely alter or change the powers, preferences or rights given to the Series B Preferred Stock, (b) adversely alter or amend this Certificate of Designations, (c) amend or repeal any provision of, or add any provision to, the Certificate of Incorporation or Bylaws, or file any certificate of designation of any series of Preferred Stock, if such action would adversely alter or change the preferences, rights, privileges or powers of, or restrictions provided for the benefit of the Series B Preferred Stock, regardless of whether any of the foregoing actions shall be by means of amendment to the Certificate of Incorporation or by merger, consolidation or otherwise, or (d) enter into any agreement with respect to any of the foregoing.

#### SECTION 5. Rank; Liquidation.

(a) The Series B Preferred Stock shall rank (i) senior to all of the Common Stock; (ii) senior to any class or series of capital stock of the Corporation hereafter created specifically ranking by its terms junior to any Series B Preferred Stock (“Junior Securities”); (iii) on parity with any class or series of capital stock of the Corporation hereafter created specifically ranking by its terms on parity with the Series B Preferred Stock (“Parity Securities”); and (iv) junior to any class or series of capital stock of the Corporation hereafter created specifically ranking by its terms senior to any Series B Preferred Stock (“Senior Securities”), in each case, as to distributions of assets upon liquidation, dissolution or winding up of the Corporation, whether voluntarily or involuntarily (all such distributions being referred to collectively as “Distributions”).

(b) Subject to the prior and superior rights of any Senior Securities, upon liquidation, dissolution or winding up of the Corporation, whether voluntary or involuntary, each Holder shall be entitled to receive, in preference to any Distributions of any of the assets or surplus funds of the Corporation to the holders of the Common Stock and Junior Securities and pari passu with any Distribution to the holders of Parity Securities, an amount equal to the greater of (i) the Stated Value per share of Series B Preferred Stock held by such Holder (taking into account any adjustments required by Section 7(c)) plus the amount of all accrued and unpaid dividends thereon and (ii) such amount as would have been payable on the number of shares of Common Stock into which the shares of Series B Preferred Stock held by such Holder could have been converted immediately prior to such liquidation, dissolution or winding up in accordance with the provisions of Section 7, assuming receipt of the Requisite Stockholder Approval, before any payments shall be made or any assets distributed to holders of any class of Common Stock or Junior Securities. If, upon any such liquidation, dissolution or winding up of the Corporation, the assets of the Corporation shall be insufficient to pay the Holders the amount required under the preceding sentence, then all remaining assets of the Corporation shall be distributed ratably to the Holders and holders of Parity Securities.

#### SECTION 6. Requisite Stockholder Approval.

(a) Subject to applicable law, the rules and regulations of Nasdaq and the Certificate of Incorporation and Bylaws, the Corporation covenants that it shall establish a record date for, call, give notice of, convene and hold a meeting of the holders of Common Stock of the Corporation (the "Corporation Stockholders' Meeting"),

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as promptly as practicable following the Issuance Date, for the purpose of voting upon the approval of the full conversion of outstanding shares of the Series B Convertible Preferred Stock into shares of Common Stock (the "Conversion"), in accordance with applicable law and the rules and regulations of Nasdaq. Notwithstanding the foregoing, (i) if there are insufficient shares of Common Stock necessary to establish a quorum at the Corporation Stockholders' Meeting, the Corporation may postpone or adjourn the date of the Corporation Stockholders' Meeting to the extent (and only to the extent) the Corporation reasonably determines that such postponement or adjournment is necessary in order to conduct business at the Corporation Stockholders' Meeting, (ii) the Corporation may postpone or adjourn the Corporation Stockholders' Meeting to the extent (and only to the extent) the Corporation reasonably determines that such postponement or adjournment is required by applicable law, and (iii) the Corporation may postpone or adjourn the Corporation Stockholders' Meeting to the extent (and only to the extent) the Corporation reasonably determines that such postponement or adjournment is necessary to solicit sufficient proxies to secure the favorable vote of the holders of a majority of the outstanding shares of Common Stock present in person or by proxy at the Corporation Stockholders' Meeting and entitled to vote with respect to the full conversion of outstanding shares of the Series B Preferred Stock into shares of Common Stock (the "Requisite Stockholder Approval"). The Corporation shall solicit from stockholders of the Corporation proxies in favor of the approval of the Conversion in accordance with applicable law and the rules and regulations of Nasdaq, and, except as required to comply with fiduciary duties under applicable law, the Corporation's Board of Directors shall (x) recommend that the Corporation's stockholders vote to approve the Conversion (the "Recommendation"), (y) use its reasonable best efforts to solicit such stockholders to vote in favor of the Conversion and (z) use its reasonable best efforts to take all other actions necessary or advisable to secure the favorable votes of such stockholders required to approve and effect the Conversion. The Corporation shall establish a record date for, call, give notice of, convene and hold the Corporation Stockholders' Meeting in accordance with this Section 6, whether or not the Corporation's Board of Directors at any time subsequent to the Issuance Date shall have changed its position with respect to its Recommendation or determined that the Conversion is no longer advisable and/or recommended that stockholders of the Corporation reject the Conversion.

(b) Except as required to comply with fiduciary duties under applicable law, the Corporation's Board of Directors shall not (i) withdraw or modify the Recommendation in a manner adverse to any Holder, or adopt or propose a resolution to withdraw or modify the Recommendation that is or becomes disclosed publicly and which can reasonably be interpreted to indicate that the Corporation's Board of Directors or any committee thereof does not support the Conversion or does not believe that the Conversion is in the best interests of the Corporation's stockholders or (ii) fail to reaffirm, without qualification, the Recommendation, or fail to state publicly, without qualification, that the Conversion is in the best interests of the Corporation's stockholders after any Holder requests in writing that such action be taken.

#### SECTION 7. Conversion.

(a) Automatic Conversion. Upon receipt of the Requisite Stockholder Approval, each outstanding share of Series B Preferred Stock shall be automatically converted, without any further action by the Holders and whether or not the certificates representing such shares, if any, are surrendered to the Corporation, into the number of fully paid and nonassessable shares of Common Stock equal to the number obtained by dividing (i) the Stated Value plus the amount of any accrued but unpaid dividends thereon as of the Conversion Date by (ii) the Conversion Price in effect on the Conversion Date (determined as provided in this Section 7).

(b) Fractions of Shares. Fractional shares of Common Stock shall not be issued in connection with any Conversion. If any fractional interest in a share would be deliverable upon Conversion, such fractional share shall be rounded up to the next whole number.

(c) Adjustments to Conversion Price.

(i) Upon Stock Dividends, Subdivisions or Splits. If, at any time or from time to time after the Issuance Date, the number of shares of Common Stock outstanding is increased by a stock dividend payable in shares of Common Stock or by a subdivision or split-up of shares of Common Stock, then, following the record date for the determination of

holders of Common Stock entitled to receive such stock dividend, or to be affected by such subdivision or split-up, the Conversion Price shall be appropriately decreased so that the number of shares of

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Common Stock issuable on conversion of Series B Preferred Stock shall be increased in proportion to such increase in outstanding shares.

(ii) Upon Combinations. If, at any time or from time to time after the Issuance Date, the number of shares of Common Stock outstanding is decreased by a combination of the outstanding shares of Common Stock into a smaller number of shares of Common Stock, then, following the record date to determine shares affected by such combination, the Conversion Price shall be appropriately increased so that the number of shares of Common Stock issuable on conversion of each share of Series B Preferred Stock shall be decreased in proportion to such decrease in outstanding shares.

(iii) Upon Fundamental Transactions. If, at any time while shares of Series B Preferred Stock are outstanding, (A) the Corporation effects any merger or consolidation of the Corporation with or into another Person or any stock sale to, or other business combination (including, without limitation, a reorganization, recapitalization, spin-off, share exchange or scheme of arrangement) with or into another Person (other than such a transaction in which the Corporation is the surviving or continuing entity and the Common Stock is not exchanged for or converted into other securities, cash or property), (B) the Corporation effects any sale of all or substantially all of its assets in one transaction or a series of related transactions, (C) any tender offer or exchange offer (whether by the Corporation or another Person) is completed pursuant to which more than 50% of the Common Stock not held by the Corporation or such Person is exchanged for or converted into other securities, cash or property, or (D) the Corporation effects any reclassification of the Common Stock or any compulsory share exchange pursuant (other than as a result of a dividend, subdivision, split or combination covered by Section 7(c)(i) or (ii) above) to which the Common Stock is effectively converted into or exchanged for other securities, cash or property (in any such case, a “Fundamental Transaction”), then, upon any subsequent conversion of Series B Preferred Stock, each Holder shall have the right to receive, in lieu of the right to receive Conversion Shares, for each Conversion Share that would have been issuable upon such conversion immediately prior to the occurrence of such Fundamental Transaction assuming receipt of the Requisite Stockholder Approval, the same kind and amount of securities, cash or property as it would have been entitled to receive upon the occurrence of such Fundamental Transaction if it had been, immediately prior to such Fundamental Transaction, the holder of one share of Common Stock (the “Alternate Consideration”). For purposes of any such subsequent conversion, the determination of the Conversion Price shall be appropriately adjusted to apply to such Alternate Consideration based on the amount of Alternate Consideration issuable in respect of one share of Common Stock in such Fundamental Transaction, and the Corporation shall adjust the Conversion Price in a reasonable manner reflecting the relative value of any different components of the Alternate Consideration. If holders of Common Stock are given any choice as to the securities, cash or property to be received in a Fundamental Transaction, then each Holder shall be given the same choice as to the Alternate Consideration it receives upon any conversion of shares of Series B Preferred Stock following such Fundamental Transaction. To the extent necessary to effectuate the foregoing provisions, any successor to the Corporation or surviving entity in such Fundamental Transaction shall file a new Certificate of Designations with the same terms and conditions and issue to the Holders new preferred stock consistent with the foregoing provisions and evidencing the Holders’ right to convert such preferred stock into Alternate Consideration. The terms of any agreement to which the Corporation is a party and pursuant to which a Fundamental Transaction is effected shall include terms requiring any such successor or surviving entity to comply with the provisions of this Section 7(c)(iii) and ensuring that the Series B Preferred Stock (or any such replacement security) will be similarly adjusted upon any subsequent transaction analogous to a Fundamental Transaction. The Corporation shall cause to be delivered to each Holder, at its last address as it shall appear upon the Series B Preferred Stock Register, written notice of any Fundamental Transaction at least 20 calendar days prior to the date on which such Fundamental Transaction is expected to become effective or close.

(d) Notice of Adjustment of Conversion Price. Whenever the provisions of this Section 7 require that the Conversion Price be adjusted as herein provided, the Corporation shall compute the adjusted Conversion Price in accordance with this Section 7 and shall prepare a certificate signed by the Corporation’s chief executive officer or chief financial

officer setting forth the adjusted Conversion Price and showing in reasonable detail the facts upon which such adjustment is based, and such certificate shall forthwith be filed at each office or agency maintained for such purpose for conversion of shares of Series B Preferred Stock and mailed by the Corporation at its expense to all Holders at their last addresses as they shall appear in the Series B Preferred Stock Register.

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(e) Conversion Procedures. As of the date the Series B Preferred Stock automatically converts into Common Stock pursuant to Section 7(a) (the "Conversion Date"), the rights of each Holder as a holder of shares of Series B Preferred Stock shall cease, and the Person or Persons entitled to receive the Common Stock issuable upon conversion shall be treated for all purposes as the record holder or holders of such Common Stock as and after such time. As promptly as practicable on or after the Conversion Date, (i) if the Series B Preferred Stock is certificated, each Holder shall surrender the certificate evidencing such share of Series B Preferred Stock, duly endorsed or assigned to the Corporation in blank, at any office or agency of the Corporation maintained for such purpose, and (ii) the Corporation shall issue and shall deliver at any office or agency of the Corporation maintained for the surrender of Series B Preferred Stock a certificate or certificates for the number of full shares of Common Stock issuable upon conversion, together with payment in lieu of any fraction of a share, as provided in Section 7(b).

(f) Taxes on Conversions. The Corporation will pay any and all original issuance, transfer, stamp and other similar taxes that may be payable in respect of the issue or delivery of shares of Common Stock on conversion of Series B Preferred Stock pursuant to this Certificate of Designations. The Corporation shall not, however, be required to pay any tax which may be payable in respect of any transfer involved in the issue and delivery of shares of Common Stock in a name other than that of the Holder of the share(s) of Series B Preferred Stock to be converted (nor shall the Corporation be responsible for any other taxes payable by the Holders), and no such issue or delivery shall be made unless and until the Person requesting such issue has paid to the Corporation the amount of any such tax, or has established to the satisfaction of the Corporation that such tax has been paid.

(g) Reservation of Shares Issuable Upon Conversion. The Corporation covenants that it will at all times reserve and keep available out of its authorized and unissued shares of Common Stock for the sole purpose of issuance upon conversion of the Series B Preferred Stock, free from preemptive rights or any other actual contingent purchase rights of Persons other than the Holders, not less than such aggregate number of shares of the Common Stock as shall be issuable (taking into account any adjustments required by Section 7(c)) upon the conversion of all outstanding shares of Series B Preferred Stock. The Corporation covenants that all shares of Common Stock that shall be so issuable shall, upon issue, be duly authorized, validly issued, fully paid and nonassessable.

(h) Calculations. All calculations under this Section 7 shall be made to the nearest cent.

#### SECTION 8. Miscellaneous.

(a) Notices. Any and all communications or deliveries to be provided by the Holders hereunder shall be in writing and delivered personally, or sent by a nationally recognized overnight courier service, addressed to the Corporation, at 12117 Bee Caves Road, Building Three, Suite 100, Austin, Texas 78738, or such other address as the Corporation may specify for such purposes by notice to the Holders delivered in accordance with this Section 8. Any and all notices or other communications or deliveries to be provided by the Corporation hereunder shall be in writing and delivered personally, by electronic communication, or sent by a nationally recognized overnight courier service addressed to each Holder at the address of such Holder appearing on the Series B Preferred Stock Register, or if no such address appears on the Series B Preferred Stock Register, at the principal place of business of such Holder. Any notice, communication or deliveries hereunder shall be deemed given and effective on the earliest of (i) the date of transmission, if such notice or communication is delivered via electronic communication prior to 5:30 p.m. (New York City time) on any date, (ii) the date immediately following the date of transmission, if such notice or communication is delivered via electronic communication between 5:30 p.m. and 11:59 p.m. (New York City time) on any date, (iii) the second Business Day following the date of mailing, if sent by nationally recognized overnight courier service, or (iv) upon actual receipt by the party to whom such notice is required to be given.

(b) Lost or Mutilated Series B Preferred Stock Certificate. If a Holder's Series B Preferred Stock certificate shall be mutilated, lost, stolen or destroyed, the Corporation shall execute and deliver, in exchange and substitution for and upon cancellation of a mutilated certificate, or in lieu of or in substitution for a lost, stolen or destroyed certificate, a

new certificate for the shares of Series B Preferred Stock so mutilated, lost, stolen or destroyed, but only upon receipt of evidence of such loss, theft or destruction of such certificate, and of the ownership thereof, reasonably satisfactory to the Corporation and, in each case, customary and reasonable indemnity, if requested. Applicants for a new certificate under such circumstances shall also comply with such other

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reasonable regulations and procedures and pay such other reasonable third-party costs as the Corporation may prescribe.

(c) Waiver. Any waiver by the Corporation or a Holder of a breach of any provision of this Certificate of Designations shall not operate as or be construed to be a waiver of any other breach of such provision or of any breach of any other provision of this Certificate of Designations or a waiver by any other Holders. The failure of the Corporation or a Holder to insist upon strict adherence to any term of this Certificate of Designations on one or more occasions shall not be considered a waiver or deprive that party (or any other Holder) of the right thereafter to insist upon strict adherence to that term or any other term of this Certificate of Designations. Any waiver by the Corporation or a Holder must be in writing.

(d) Severability. If any provision of this Certificate of Designations is invalid, illegal or unenforceable, the balance of this Certificate of Designations shall remain in effect, and if any provision is inapplicable to any Person or circumstance, it shall nevertheless remain applicable to all other Persons and circumstances.

(e) Next Business Day. Whenever any payment or other obligation hereunder shall be due on a day other than a Business Day, such payment shall be made on the next succeeding Business Day.

(f) Headings. The headings contained herein are for convenience only, do not constitute a part of this Certificate of Designations and shall not be deemed to limit or affect any of the provisions hereof.

(g) Status of Converted Series B Preferred Stock. If any shares of Series B Preferred Stock shall be converted into Common Stock, such shares of Series B Preferred Stock shall not revert to the status of authorized but unissued shares of Preferred Stock, but instead shall be canceled by the Corporation and shall not be re-issuable by the Corporation.

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IN WITNESS WHEREOF, the undersigned has executed this Certificate of Designations, Preferences and Rights of Series B Convertible Preferred Stock this 16th day of April 2018.

/s/ Robert Beechey  
Robert Beechey

Chief Financial Officer

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Appendix B

VERMILLION, INC.

SECOND AMENDED AND RESTATED 2010 STOCK INCENTIVE PLAN

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Plan Document

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Vermillion, Inc. (the “Company”) hereby establishes and adopts the following Second Amended and Restated 2010 Stock Incentive Plan (the “Plan”), effective upon approval by the Company’s stockholders at the Company’s 2015 Annual Meeting of Stockholders (the “Effective Date”).

1. Introduction.

(a) Purpose. The purposes of the Plan are: (i) to enhance the Company’s ability to attract highly qualified personnel; (ii) to strengthen its retention capabilities; (iii) to enhance the long-term performance and competitiveness of the Company; and (iv) to align the interests of Plan participants with those of the Company’s stockholders. This Plan, as amended and restated, shall be submitted to the stockholders of the Company for approval and, if approved, shall become effective as of the Effective Date.

(b) Definitions. Terms in the Plan and any Appendix that begin with an initial capital letter have the defined meaning set forth in Appendix I or elsewhere in this Plan, in either case unless the context of their use clearly indicates a different meaning.

(c) Effect on Other Plans, Awards, and Arrangements. This Plan is not intended to affect and shall not affect any stock options, equity-based compensation, or other benefits that the Company or its Affiliates may have provided, or may separately provide in the future, pursuant to any agreement, plan, or program that is independent of this Plan.

(d) Appendices. Incorporated by reference and thereby part of the Plan are the definitions set forth in Appendix I hereof.

2. Types of Awards. The Plan permits the granting of the following types of Awards according to the Sections of the Plan listed here:

Section 5 Stock Options

Section 6 Share Appreciation Rights (“SARs”)

Section 7 Restricted Shares, Restricted Share Units (“RSUs”), and Unrestricted Shares

Section 8 Deferred Share Units (“DSUs”)

Section 9 Performance and Cash-settled Awards

Section 10 Dividend Equivalent Rights

3. Shares Available for Awards.

(a) Number of Shares. Subject to Section 13 below, a total of 12,122,983 Shares shall be available for issuance under the Plan. The Shares deliverable pursuant to Awards shall be authorized but unissued Shares, or Shares that the Company otherwise holds in treasury or in trust.

(b) Replenishment; Counting of Shares. For purposes of the limitation under Section 3(a), to the extent that Shares underlying any Plan Awards are not issued or delivered by reason of (i) forfeiture, cancellation, expiration or termination (other than by exercise) or (ii) the settlement of such Shares in cash, then such Shares shall be added back to the Shares available for issuance under the Plan. Notwithstanding the foregoing, the following Shares shall

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not be added to the Shares authorized for grant under the Plan: (i) Shares that were subject to an Option or an SAR and were not issued or delivered upon the net settlement or net exercise of such Option or SAR, (ii) Shares delivered to or withheld by the Company to pay purchase price or the withholding taxes related to an Award or (iii) Shares repurchased by the Company on the open market with the proceeds of an Option exercise. Further, and to the extent permitted under Applicable Law, the maximum number of Shares available for delivery under the Plan shall not be reduced by any Shares issued under the Plan through the settlement, assumption, or substitution of outstanding awards or obligations to grant future awards as a condition of the Company's or an Affiliate's acquiring another entity.

(c) ISO Share Reserve. The number of Shares that are available for ISO Awards shall not exceed the total number set forth in Section 3(a) above (as adjusted pursuant to Section 13 of the Plan, and as determined in accordance with Code Section 422).

#### 4. Eligibility.

(a) General Rule. Subject to the express provisions of the Plan, the Committee shall determine from the class of Eligible Persons those Persons to whom Awards may be granted. Each Award shall be evidenced by an Award Agreement that sets forth its Grant Date and all other terms and conditions of the Award, that is signed on behalf of the Company (or delivered by an authorized agent through an electronic medium), and that, if required by the Committee, is signed by the Eligible Person as an acceptance of the Award. The grant of an Award shall not obligate the Company or any Affiliate to continue the employment or service of any Eligible Person, or to provide any future Awards or other remuneration at any time thereafter.

(b) Option and SAR Limits per Person. Subject to adjustment pursuant to Section 13, the maximum number of Shares with respect to which Options or SARs, or a combination thereof, may be granted during any fiscal year of the Company to any person shall be 1,000,000.

#### 5. Stock Options.

(a) Grants. Subject to the special rules for ISOs set forth in the next paragraph, the Committee may grant Options to Eligible Persons pursuant to Award Agreements setting forth terms and conditions that are not inconsistent with the Plan, that may be immediately exercisable or that may become exercisable in whole or in part based on future events or conditions, that may include vesting or other requirements for the right to exercise the Option, and that may differ for any reason between Eligible Persons or classes of Eligible Persons, provided in all instances that:

(i) the exercise price for Shares subject to purchase through exercise of an Option shall not be less than 100% of the Fair Market Value of the underlying Shares on the Grant Date; and

(ii) no Option shall be exercisable for a term ending more than ten years after its Grant Date.

(b) Special ISO Provisions. The following provisions shall control any grants of Options that are denominated as ISOs.

(i) Eligibility. The Committee may grant ISOs only to Employees (including officers who are Employees) of the Company or an Affiliate that is a "parent corporation" or "subsidiary corporation" within the meaning of Code Section 424.

(ii) Documentation. Each Option that is intended to be an ISO must be designated in the Award Agreement as an ISO, provided that any Option designated as an ISO will be a Non-ISO to the extent the Option fails to meet the requirements of Code Section 422. In the case of an ISO, the Committee shall determine on the Grant Date the

acceptable methods of paying the exercise price for Shares, and it shall be included in the applicable Award Agreement.

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(iii) \$100,000 Limit. To the extent that the aggregate Fair Market Value of Shares with respect to which ISOs first become exercisable by a Participant in any calendar year (under this Plan and any other plan of the Company or any Affiliate) exceeds U.S. \$100,000, such excess Options shall be treated as Non-ISOs. For purposes of determining whether the U.S. \$100,000 limit is exceeded, the Fair Market Value of the Shares subject to an ISO shall be determined as of the Grant Date. In reducing the number of Options treated as ISOs to meet the U.S. \$100,000 limit, the most recently granted Options shall be reduced first. In the event that Code Section 422 is amended to alter the limitation set forth therein, the limitation of this paragraph shall be automatically adjusted accordingly.

(iv) Grants to 10% Holders. In the case of an ISO granted to an Employee who is a Ten Percent Holder on the Grant Date, the ISO's term shall not exceed five years from the Grant Date, and the exercise price shall be at least 110% of the Fair Market Value of the underlying Shares on the Grant Date. In the event that Code Section 422 is amended to alter the limitations set forth therein, the limitations of this paragraph shall be automatically adjusted accordingly.

(v) Substitution of Options. In the event the Company or an Affiliate acquires (whether by purchase, merger, or otherwise) all or substantially all of outstanding capital stock or assets of another corporation or in the event of any reorganization or other transaction qualifying under Code Section 424, the Committee may, in accordance with the provisions of that Section, substitute ISOs for ISOs previously granted under the plan of the acquired company provided (A) the excess of the aggregate Fair Market Value of the Shares subject to an ISO immediately after the substitution over the aggregate exercise price of such shares is not more than the similar excess immediately before such substitution, and (B) the new ISO does not give additional benefits to the Participant, including any extension of the exercise period.

(vi) Notice of Disqualifying Dispositions. By executing an ISO Award Agreement, each Participant agrees to notify the Company in writing immediately after the Participant sells, transfers or otherwise disposes of any Shares acquired through exercise of the ISO, if such disposition occurs within the earlier of (A) two years of the Grant Date, or (B) one year after the exercise of the ISO being exercised. Each Participant further agrees to provide any information about a disposition of Shares as may be requested by the Company to assist it in complying with any applicable tax laws.

(c) Method of Exercise. Each Option may be exercised, in whole or in part (provided that the Company shall not be required to issue fractional shares) at any time and from time to time prior to its expiration, but only pursuant to the terms of the applicable Award Agreement, and subject to the times, circumstances and conditions for exercise contained in the applicable Award Agreement. Exercise shall occur by delivery of both written notice of exercise to the secretary of the Company, and payment of the full exercise price for the Shares being purchased. The methods of payment that the Committee may in its discretion accept or commit to accept in an Award Agreement include:

(i) cash or check payable to the Company (in U.S. dollars);

(ii) other Shares that (A) are owned by the Participant who is purchasing Shares pursuant to an Option, (B) have a Fair Market Value on the date of surrender equal to the aggregate exercise price of the Shares as to which the Option is being exercised, (C) are all, at the time of such surrender, free and clear of any and all claims, pledges, liens and encumbrances, or any restrictions which would in any manner restrict the transfer of such Shares to or by the Company (other than such restrictions as may have existed prior to an issuance of such Shares by the Company to such Participant), and (D) are duly endorsed for transfer to the Company;

(iii) a net exercise by surrendering to the Company Shares otherwise receivable upon exercise of the Option;

(iv) a cashless exercise program that the Committee may approve, from time to time in its discretion, pursuant to which a Participant may elect to concurrently provide irrevocable instructions (A) to such Participant's broker or dealer to effect the immediate sale of the purchased Shares and remit to the Company, out of the sale proceeds available on

the settlement date, sufficient funds to cover the exercise

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price of the Option plus all Withholding Taxes, and (B) to the Company to deliver the certificates for the purchased Shares directly to such broker or dealer in order to complete the sale; or

(v) any combination of the foregoing methods of payment.

The Company shall not be required to deliver Shares pursuant to the exercise of an Option until the Company has received sufficient funds to cover the full exercise price due and all applicable Withholding Taxes required by reason of such exercise.

Notwithstanding any other provision of the Plan to the contrary, no Participant who is a Director or an “executive officer” of the Company within the meaning of Section 13(k) of the Exchange Act shall be permitted to make payment with respect to any Awards granted under the Plan, or continue any extension of credit with respect to such payment with a loan from the Company or a loan arranged by the Company in violation of Section 13(k) of the Exchange Act.

(d) Exercise of an Unvested Option. The Committee in its sole discretion may allow a Participant to exercise an unvested Option, in which case the Shares then issued shall be Restricted Shares having analogous vesting restrictions to the unvested Option.

(e) Termination of Continuous Service. The Committee may establish and set forth in the applicable Award Agreement the terms and conditions on which an Option shall remain exercisable, if at all, following termination of a Participant’s Continuous Service. The Committee may waive or modify these provisions at any time. To the extent that a Participant is not entitled to exercise an Option at the date of his or her termination of Continuous Service, or if the Participant (or other person entitled to exercise the Option) does not exercise the Option to the extent so entitled within the time specified in the Award Agreement or below (as applicable), the Option shall terminate and the Shares underlying the unexercised portion of the Option shall revert to the Plan and become available for future Awards.

The following provisions shall apply to the extent an Award Agreement does not specify the terms and conditions upon which an Option shall terminate when there is a termination of a Participant’s Continuous Service:

Reason for terminating Continuous Service	Option Termination Date
(I) By the Company for Cause, or what would have been Cause if the Company had known all of the relevant facts.	Termination of the Participant’s Continuous Service, or when Cause first existed if earlier.
(II) Disability of the Participant.	Within one year after termination of the Participant’s Continuous Service.
(III) Retirement of the Participant after age 65 with five years or more of Continuous Service.	Within one year after termination of the Participant’s Continuous Service.
(IV) Death of the Participant during Continuous Service or within 90 days thereafter.	Within one year after termination of the Participant’s Continuous Service.
(V) Other than due to Cause or the Participant’s Disability, Retirement, or Death.	Within 90 days after termination of the Participant’s Continuous Service.

If there is a Securities and Exchange Commission blackout period (or a Committee-imposed blackout period) that prohibits the buying or selling of Shares during any part of the ten day period before the expiration of any Option based on the termination of a Participant’s Continuous Service (as described above), the period for exercising the Options shall be extended until ten days beyond when such blackout period ends. Notwithstanding





any provision hereof or within an Award Agreement, no Option shall ever be exercisable after the expiration date of its original term as set forth in the Award Agreement.

#### 6.SARs.

(a) Grants. The Committee may grant SARs to Eligible Persons pursuant to Award Agreements setting forth terms and conditions that are not inconsistent with the Plan; provided that:

(i) the exercise price for the Shares subject to each SAR shall not be less than 100% of the Fair Market Value of the underlying Shares on the Grant Date;

(ii) no SAR shall be exercisable for a term ending more than ten years after its Grant Date; and

(iii) each SAR shall, except to the extent an SAR Award Agreement provides otherwise, be subject to the provisions of Section 5(e) relating to the effect of a termination of Participant's Continuous Service, with "SAR" being substituted for "Option."

(b) Settlement. Subject to the Plan's terms, an SAR shall entitle the Participant, upon exercise of the SAR, to receive Shares having a Fair Market Value on the date of exercise equal to the product of the number of Shares as to which the SAR is being exercised, and the excess of (i) the Fair Market Value, on such date, of the Shares covered by the exercised SAR, over (ii) an exercise price designated in the SAR Award Agreement. Notwithstanding the foregoing, an SAR Award Agreement may limit the total settlement value that the Participant will be entitled to receive upon the SAR's exercise, and may provide for settlement either in cash or in any combination of cash or Shares that the Committee may authorize pursuant to an Award Agreement. If, on the date on which an SAR or portion thereof is to expire, the Fair Market Value exceeds the per Share exercise price of such SAR, then the SAR shall be deemed exercised and cancelled without any payment in settlement thereof; subject to any specific provision to the contrary within an Award Agreement.

(c) SARs related to Options. The Committee may grant SARs either concurrently with the grant of an Option or with respect to an outstanding Option, in which case the SAR shall extend to all or a portion of the Shares covered by the related Option, and shall have an exercise price that is not less than the exercise price of the related Option. An SAR shall entitle the Participant who holds the related Option, upon exercise of the SAR and surrender of the related Option, or portion thereof, to the extent the SAR and related Option each were previously unexercised, to receive payment of an amount determined pursuant to Section 6(b) above. Any SAR granted in tandem with an ISO will contain such terms as may be required to comply with the provisions of Code Section 422.

#### 7.Restricted Shares, RSUs, and Unrestricted Share Awards.

(a) Grant. The Committee may grant Restricted Share, RSU, or Unrestricted Share Awards to Eligible Persons, in all cases pursuant to Award Agreements setting forth terms and conditions that are not inconsistent with the Plan. The Committee shall establish as to each Restricted Share or RSU Award the number of Shares deliverable or subject to the Award (which number may be determined by a written formula), and the period or periods of time (the "Restriction Period") at the end of which all or some restrictions specified in the Award Agreement shall lapse, and the Participant shall receive unrestricted Shares (or cash to the extent provided in the Award Agreement) in settlement of the Award. Such restrictions may include, without limitation, restrictions concerning voting rights and transferability, and such restrictions may lapse separately or in combination at such times and pursuant to such circumstances or based on such criteria as selected by the Committee, including, without limitation, criteria based on the Participant's duration of employment, directorship or consultancy with the Company, individual, group, or divisional performance criteria, Company performance, or other criteria selection by the Committee. The Committee may make Restricted Share and

RSU Awards with or without the requirement for payment of cash or other consideration. In addition, the Committee may grant Awards hereunder in the form of Unrestricted Shares which shall vest in full upon the Grant Date or such other date as the Committee may determine or which the Committee may issue pursuant to any program under which one or more Eligible Persons (selected by the Committee in its sole discretion) elect to pay for such Shares or to receive Unrestricted Shares in lieu of cash bonuses that would otherwise be paid.

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(b) Vesting and Forfeiture. The Committee shall set forth, in an Award Agreement granting Restricted Shares or RSUs, the terms and conditions under which the Participant's interest in the Restricted Shares or the Shares or cash subject to RSUs will become vested and non-forfeitable. Except as set forth in the applicable Award Agreement or as the Committee otherwise determines, upon termination of a Participant's Continuous Service for any reason, the Participant shall forfeit his or her Restricted Shares and RSUs to the extent the Participant's interest therein has not vested on or before such termination date; provided that if a Participant purchases Restricted Shares and forfeits them for any reason, the Company shall return the purchase price to the Participant to the extent either set forth in an Award Agreement or required by Applicable Law.

(c) Certificates for Restricted Shares. Unless otherwise provided in an Award Agreement, the Company shall hold certificates representing Restricted Shares and dividends (whether in Shares or cash) that accrue with respect to them until the restrictions lapse, and the Participant shall provide the Company with appropriate stock powers endorsed in blank. The Participant's failure to provide such stock powers within ten days after a written request from the Company shall entitle the Committee to unilaterally declare a forfeiture of all or some of the Participant's Restricted Shares.

(d) Section 83(b) Elections. A Participant may make an election under Code Section 83(b) (the "Section 83(b) Election") with respect to Restricted Shares. A Participant who has received RSUs may, within ten days after receiving the RSU Award, provide the Committee with a written notice of his or her desire to make Section 83(b) Election with respect to the Shares subject to such RSUs. The Committee may in its discretion convert the Participant's RSUs into Restricted Shares, on a one-for-one basis, in full satisfaction of the Participant's RSU Award. The Participant may then make a Section 83(b) Election with respect to those Restricted Shares; provided that the Participant's Section 83(b) Election will be invalid if not filed with the Company and the appropriate U.S. tax authorities within 30 days after the Grant Date of the RSUs replaced by the Restricted Shares.

(e) Deferral Elections for RSUs. To the extent specifically provided in an Award Agreement, a Participant may irrevocably elect, in accordance with Section 8 below, to defer the receipt of all or a percentage of the Shares that would otherwise be transferred to the Participant both more than 12 months after the date of the Participant's deferral election and upon the vesting of an RSU Award. If the Participant makes this election, the Company shall credit the Shares subject to the election, and any associated Shares attributable to Dividend Equivalent Rights attached to the Award, to a DSU account established pursuant to Section 8 below on the date such Shares would otherwise have been delivered to the Participant pursuant to this Section.

(f) Issuance of Shares upon Vesting. As soon as practicable after vesting of a Participant's Restricted Shares (or of the right to receive Shares underlying RSUs), the Company shall deliver to the Participant, free from vesting restrictions, one Share for each surrendered and vested Restricted Share (or deliver one Share free of the vesting restriction for each vested RSU), unless an Award Agreement provides otherwise and subject to Section 11 regarding Withholding Taxes. No fractional Shares shall be distributed, and cash shall be paid in lieu thereof.

#### 8.DSUs.

(a) Elections to Defer. The Committee may make DSU awards to Eligible Persons pursuant to Award Agreements (regardless of whether or not there is a deferral of the Eligible Person's compensation), and may permit select Eligible Persons to irrevocably elect, on a form provided by and acceptable to the Committee (the "Election Form"), to forego the receipt of cash or other compensation (including the Shares deliverable pursuant to any RSU Award) and in lieu thereof to have the Company credit to an internal Plan account a number of DSUs having a Fair Market Value equal to the Shares and other compensation deferred. These credits will be made at the end of each calendar quarter (or other period determined by the Committee) during which compensation is deferred. Notwithstanding the foregoing sentence, a Participant's Election Form will be ineffective with respect to any compensation that the Participant earns before the date on which the Election Form takes effect. For any Participant who is subject to U.S. income taxation,

the Committee shall only authorize deferral elections under this Section (i) pursuant to written procedures, and using written Election Forms, that satisfy the requirements of Code Section 409A, and (ii) only by Eligible Persons who are Directors, Consultants, or members of a select group of management or highly compensated Employees (within the meaning of ERISA).

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(b) Vesting. Unless an Award Agreement expressly provides otherwise, each Participant shall be 100% vested at all times in any Shares subject to DSUs.

(c) Issuances of Shares. Unless an Award Agreement expressly provides otherwise, the Company shall settle a Participant's DSU Award, by delivering one Share for each DSU, in five substantially equal annual installments that are issued before the last day of each of the five calendar years that end after the date on which the Participant's Continuous Service ends for any reason, subject to –

(i) the Participant's right to elect a different form of distribution, only on a form provided by and acceptable to the Committee, that permits the Participant to select any combination of a lump sum and annual installments that are triggered by, and completed within ten years following, the last day of the Participant's Continuous Service, and

(ii) the Company's acceptance of the Participant's distribution election form executed at the time the Participant elects to defer the receipt of cash or other compensation pursuant to Section 8(a), provided that the Participant may change a distribution election through any subsequent election that (A) the Participant delivers to the Company at least one year before the date on which distributions are otherwise scheduled to commence pursuant to the Participant's initial distribution election, (B) such distribution election does not take effect until at least one year after the date it was executed by the Participant and (C) defers the commencement of distributions by at least five years from the originally scheduled distribution commencement date.

Fractional shares shall not be issued, and instead shall be paid out in cash.

(d) Emergency Withdrawals. In the event that a Participant suffers an unforeseeable emergency within the contemplation of this Section, the Participant may apply to the Committee for an immediate distribution of all or a portion of the Participant's DSUs. The unforeseeable emergency must result from a sudden and unexpected illness or accident of the Participant, the Participant's spouse, or a dependent (within the meaning of Code Section 152) of the Participant, casualty loss of the Participant's property, or other similar extraordinary and unforeseeable conditions beyond the control of the Participant. The Committee shall, in its sole and absolute discretion, determine whether a Participant has a qualifying unforeseeable emergency, may require independent verification of the emergency, and may determine whether or not to provide the Participant with cash or Shares. Examples of purposes which are not considered unforeseeable emergencies include post-secondary school expenses or the desire to purchase a residence. In no event will a distribution be made to the extent the unforeseeable emergency could be relieved through reimbursement or compensation by insurance or otherwise, or by liquidation of the Participant's nonessential assets to the extent such liquidation would not itself cause a severe financial hardship. The amount of any distribution hereunder shall be limited to the amount necessary to relieve the Participant's unforeseeable emergency plus amounts necessary to pay taxes reasonably anticipated as a result of the distribution. The number of Shares subject to the Participant's DSU Award shall be reduced by any Shares distributed to the Participant and by a number of Shares having a Fair Market Value on the date of the distribution equal to any cash paid to the Participant pursuant to this Section. For all DSUs granted to Participants who are U.S. taxpayers, the term "unforeseeable emergency" shall be interpreted in accordance with Code Section 409A.

(e) Termination of Service. For purposes of this Section, a Participant's "Continuous Service" shall only end when the Participant incurs a "separation from service" within the meaning of Treasury Regulations § 1.409A-1(h). A Participant shall be considered to have experienced a termination of Continuous Service when the facts and circumstances indicate that either (i) no further services will be performed for the Company or any Affiliate after a certain date, or (ii) that the level of bona fide services the Participant will perform after such date (whether as an Employee, Director, or Consultant) are reasonably expected to permanently decrease to no more than 50% of the average level of bona fide services performed by such Participant (whether as an Employee, Director, or Consultant) over the immediately preceding 36-month period (or full period of services to the Company and its Affiliates if the Participant has been

providing such services for less than 36 months).

9. Performance and Cash-Settled Awards.

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(a) Performance Units. Subject to the limitations set forth in paragraph (b) hereof, the Committee may in its discretion grant Performance Awards, including Performance Units to any Eligible Person, including Performance Unit Awards that (i) have substantially the same financial benefits and other terms and conditions as Options, SARs, RSUs, or DSUs, but (ii) are settled only in cash. All Awards hereunder shall be made pursuant to Award Agreements setting forth terms and conditions that are not inconsistent with the Plan.

(b) Performance Compensation Awards. Subject to the limitations set forth in this Section, the Committee may, at the time of grant of a Performance Unit, designate such Award as a “Performance Compensation Award” (payable in cash or Shares) in order that such Award constitutes, and has terms and conditions that are designed to qualify as, “qualified performance-based compensation” under Code Section 162(m). With respect to each such Performance Compensation Award, the Committee shall establish, in writing within the time required under Code Section 162(m), a “Performance Period,” “Performance Measure(s),” and “Performance Formula(e)” (each such term being defined below). Once established for a Performance Period, the Performance Measure(s) and Performance Formula(e) shall not be amended or otherwise modified to the extent such amendment or modification would cause the compensation payable pursuant to the Award to fail to constitute qualified performance-based compensation under Code Section 162(m).

A Participant shall be eligible to receive payment in respect of a Performance Compensation Award only to the extent that the Performance Measure(s) for such Award is achieved and the Performance Formula(e) as applied against such Performance Measure(s) determines that all or some portion of such Participant’s Award has been earned for the Performance Period. As soon as practicable after the close of each Performance Period, the Committee shall review and certify in writing whether, and to what extent, the Performance Measure(s) for the Performance Period have been achieved and, if so, determine and certify in writing the amount of the Performance Compensation Award to be paid to the Participant and, in so doing, may use negative discretion to decrease, but not increase, the amount of the Award otherwise payable to the Participant based upon such performance

(c) Limitations on Awards. The maximum Performance Award and the maximum Performance Compensation Award that any one Participant may receive during any 12-month period during a Performance Period, without regard to time of vesting or exercisability, shall not together exceed 500,000 Shares, as adjusted pursuant to Section 13 below (or, for Performance Units to be settled in cash, U.S. \$2,000,000).

(d) Definitions.

(i) “Performance Formula” means, for a Performance Period, one or more objective formulas or standards established by the Committee for purposes of determining whether or the extent to which an Award has been earned based on the level of performance attained or to be attained with respect to one or more Performance Measure(s). Performance Formulae may vary from Performance Period to Performance Period and from Participant to Participant and may be established on a stand-alone basis, in tandem or in the alternative.

(ii) “Performance Measure” means one or more of the following selected by the Committee to measure Company, Affiliate, and/or business unit performance for a Performance Period, whether in absolute or relative terms (including, without limitation, terms relative to a peer group or index): earnings per share; sales or revenue; earnings before interest, and taxes (in total or on a per share basis); net income; returns on equity, assets, capital, or revenue; economic value added; working capital; total stockholder return; and product development, product market share, research, licensing, successful completion of clinical trials, submission of applications with the U.S. Food and Drug Administration (“FDA”) for new tests, receipt from the FDA of clearance for new tests, commercialization of new tests, litigation, human resources, information services, mergers, acquisitions, sales of assets of Affiliates or business units. Each such measure shall be, to the extent applicable, determined in accordance with generally accepted accounting principles as consistently applied by the Company (or such other standard applied by the Committee) and, if so determined by the Committee, and in the case of a Performance Compensation Award, to the extent permitted under

Code Section 162(m), adjusted to omit the effects of extraordinary items, gain or loss on the disposal of a business segment, unusual or infrequently occurring events and transactions and cumulative effects of changes in accounting principles. Performance Measures may vary

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from Performance Period to Performance Period and from Participant to Participant, and may be established on a stand-alone basis, in tandem or in the alternative.

(iii) “Performance Period” means one or more periods of time (of not less than one fiscal year of the Company), as the Committee may designate, over which the attainment of one or more Performance Measure(s) will be measured for the purpose of determining a Participant’s rights in respect of an Award.

(e) Deferral Elections. At any time prior to the date that is both at least six months before the close of a Performance Period (or shorter or longer period that the Committee selects) with respect to a Performance Award and at which time vesting or payment is substantially uncertain to occur, the Committee may permit a Participant who is a member of a select group of management or highly compensated employees (within the meaning of ERISA) to irrevocably elect, on a form provided by and acceptable to the Committee, to defer the receipt of all or a percentage of the cash or Shares that would otherwise be transferred to the Participant upon the vesting of such Award. If the Participant makes this election, the cash or Shares subject to the election, and any associated interest and dividends, shall be credited to an account established pursuant to Section 8 hereof on the date such cash or Shares would otherwise have been released or issued to the Participant pursuant to this Section.

10.Dividend Equivalent Rights. To the extent expressly provided in an Award Agreement, a Dividend Equivalent Right shall entitle an Eligible Person who has received an Award to be credited with dividends that the Company declares and pays (in cash, Shares, or other securities) to its stockholders of record between the Grant Date and the settlement date of the Award. Any Dividend Equivalent Rights arising from cash dividends shall be immediately deemed to be reinvested in Shares having a Fair Market Value equal to such cash dividends (unless an Award Agreement provides otherwise). The Company shall settle Dividend Equivalent Rights by issuing Shares to a Participant to the extent they were previously credited to the Participant as Dividend Equivalent Rights and are attributable to Shares that the Participant is receiving as settlement of an Award. Notwithstanding the foregoing, the Committee may in an Award Agreement or modification thereto provide for (i) an earlier or later settlement event for Dividend Equivalent Rights, and (ii) complete or partial settlement in cash rather than in Shares; provided that Dividend Equivalent Rights associated with an Award subject to performance-based vesting conditions shall be deposited with the Company and shall be subject to the same restrictions as the underlying Award.

#### 11.Taxes; Withholding.

(a) General Rule. Participants are solely responsible and liable for the satisfaction of all taxes and penalties that may arise in connection with Awards, and neither the Company, any Affiliate, nor any of their employees, directors, or agents shall have any obligation to mitigate, indemnify, or to otherwise hold any Participant harmless from any or all of such taxes. The Company’s obligation to deliver Shares (or to pay cash) to Participants pursuant to Awards is at all times subject to their prior or coincident satisfaction of all required Withholding Taxes. Except to the extent otherwise either provided in an Award Agreement or thereafter authorized by the Committee, the Company or any Affiliate will satisfy required Withholding Taxes that the Participant has not otherwise arranged to settle before the due date thereof

(i) first from withholding the cash otherwise payable to the Participant pursuant to the Award;

(ii) then by withholding and cancelling the Participant’s rights with respect to a number of Shares that (A) would otherwise have been delivered to the Participant pursuant to the Award, and (B) have an aggregate Fair Market Value equal to the Withholding Taxes (such withheld Shares may not have a value in excess of the aggregate Fair Market Value thereof on the date of the withholding determined by applying the minimum statutory withholding rate); and

(iii) finally, withholding the cash otherwise payable to the Participant by the Company.

(b) U.S. Code Section 409A. To the extent that the Committee determines that any Award granted under the Plan is subject to Code Section 409A, the Award Agreement evidencing such Award shall incorporate the terms and conditions required by Code Section 409A. To the extent applicable, the Plan and Award Agreements shall be interpreted in accordance with Code Section 409A and Department of Treasury regulations and other interpretive

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guidance issued thereunder, including without limitation any such regulations or other guidance that may be issued after the Effective Date. Notwithstanding any provision of the Plan to the contrary, the Committee may adopt such amendments to the Plan and the applicable Award Agreement or adopt other policies and procedures (including amendments, policies and procedures with retroactive effect), or take any other actions, that the Administrator determines are necessary or appropriate (i) to exempt the Award from Code Section 409A and/or preserve the intended tax treatment of the benefits provided with respect to the Award, or (ii) to comply with the requirements of Code Section 409A and related Department of Treasury guidance and thereby avoid the application of any penalty taxes under such Section.

(c) **Unfunded Tax Status.** The Plan is intended to be an “unfunded” plan for incentive compensation. With respect to any payments not yet made to a Person pursuant to an Award, nothing contained in the Plan or any Award Agreement shall give the Person any rights that are greater than those of a general creditor of the Company or any Affiliate, and a Participant’s rights under the Plan at all times constitute an unsecured claim against the general assets of the Company for the collection of benefits as they come due. Neither the Participant nor the Participant’s duly-authorized transferee or Beneficiaries shall have any claim against or rights in any specific assets, Shares, or other funds of the Company.

#### 12. Non-Transferability of Awards.

(a) **General.** Except as set forth in this Section, or as otherwise approved by the Committee, Awards may not be sold, pledged, assigned, hypothecated, transferred or disposed of in any manner other than by will or by the laws of descent or distribution. The designation of a death Beneficiary by a Participant will not constitute a transfer. An Award may be exercised, during the lifetime of the holder of an Award, only by such holder, by the duly-authorized legal representative of a holder who is Disabled, or by a transferee permitted by this Section.

(b) **Limited Transferability Rights.** The Committee may in its discretion provide in an Award Agreement that an Award in the form of a Non-ISO, a Share-settled SAR, Restricted Shares, RSUs, Performance Awards, Performance Units may be transferred without consideration and on such terms and conditions as the Committee deems appropriate, either (i) by instrument to the Participant’s “Immediate Family” (as defined below), (ii) by instrument to an inter vivos or testamentary trust (or other entity) in which the Award is to be passed to the Participant’s designated beneficiaries, or (iii) by gift to charitable institutions. Any transferee of the Participant’s rights shall succeed and be subject to all of the terms of the applicable Award Agreement and the Plan. “Immediate Family” means any child, stepchild, grandchild, parent, stepparent, grandparent, spouse, former spouse, sibling, niece, nephew, mother-in-law, father-in-law, son-in-law, daughter-in-law, brother-in-law, or sister-in-law, and shall include adoptive relationships.

(c) **Death.** In the event of the death of a Participant, any outstanding Awards issued to the Participant shall automatically be transferred to the Participant’s Beneficiary (or, if no Beneficiary is designated or surviving, to the person or persons to whom the Participant’s rights under the Award pass by will or the laws of descent and distribution).

#### 13. Change in Capital Structure; Change in Control; Etc.

(a) **Changes in Capitalization.** The Committee shall equitably adjust the number of Shares covered by each outstanding Award, the number of Shares that have been authorized for issuance under the Plan but as to which no Awards have yet been granted or that have been returned to the Plan upon cancellation, forfeiture, or expiration of an Award, the per person maximums set forth in the Plan, as well as the exercise or other price per Share covered by each such outstanding Award, to reflect any increase or decrease in the number of issued Shares resulting from a stock-split, reverse stock-split, stock dividend, combination, recapitalization or reclassification of the Shares, merger, consolidation, change in form of organization, or any other increase or decrease in the number of issued Shares effected without receipt of consideration by the Company. In the event of any such transaction or event, the

Committee may provide in substitution for any or all outstanding Awards under the Plan such alternative consideration (including cash or securities of any surviving entity) as it may in good faith determine to be equitable under the circumstances and may require in connection therewith the surrender of all Awards so replaced. In any case, such substitution of cash or securities shall not require the consent of any person who is granted Awards pursuant to the Plan. Except as expressly provided herein, or in an Award Agreement, if the Company issues for

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consideration shares of stock of any class or securities convertible into shares of stock of any class, the issuance shall not affect, and no adjustment by reason thereof shall be required to be made with respect to the number or price of Shares subject to any Award.

(b) **Dissolution or Liquidation.** In the event of the dissolution or liquidation of the Company other than as part of a Change in Control, each Award will terminate immediately prior to the consummation of such dissolution or liquidation, subject to the ability of the Committee to exercise any discretion authorized in the case of a Change in Control.

(c) **Change in Control.** In the event of a Change in Control but subject to the terms of any Award Agreements or employment-related agreements between the Company or any Affiliates and any Participant, each outstanding Award shall be assumed or a substantially equivalent award shall be substituted by the surviving or successor company or a parent or subsidiary of such successor company (in each case, the "Successor Company") upon consummation of the Change in Control. Notwithstanding the foregoing, instead of having outstanding Awards be assumed or replaced with equivalent awards by the Successor Company, the Committee may in its sole and absolute discretion and authority, without obtaining the approval or consent of the Company's stockholders or any Participant with respect to his or her outstanding Awards, take one or more of the following actions (with respect to any or all of the Awards, and with discretion to differentiate between individual Participants and Awards for any reason):

(i) accelerate the vesting of Awards so that Awards shall vest (and, to the extent applicable, become exercisable) as to the Shares that otherwise would have been unvested and provide that repurchase rights of the Company with respect to Shares issued pursuant to an Award shall lapse as to the Shares subject to such repurchase right;

(ii) arrange or otherwise provide for the payment of cash or other consideration to Participants in exchange for the satisfaction and cancellation of outstanding Awards (with the Committee determining the amount payable to each Participant based on the Fair Market Value, on the date of the Change in Control, of the Award being cancelled, based on any reasonable valuation method selected by the Committee);

(iii) terminate all or some Awards upon the consummation of the Change in Control, provided that the Committee shall provide for vesting of such Awards in full as of a date immediately prior to consummation of the Change in Control. To the extent that an Award is not exercised prior to consummation of a transaction in which the Award is not being assumed or substituted, such Award shall terminate upon such consummation;

(iv) make such other modifications, adjustments or amendments to outstanding Awards or this Plan as the Committee deems necessary or appropriate, subject however to the terms of Section 13 above.

#### 14. Termination, Rescission and Recapture of Awards.

(a) Each Award under the Plan is intended to align the Participant's long-term interests with those of the Company. Accordingly, unless otherwise expressly provided in an Award Agreement, the Company may terminate any outstanding, unexercised, unexpired, unpaid, or deferred Awards ("Termination"), rescind any exercise, payment or delivery pursuant to the Award ("Rescission"), or recapture any Shares (whether restricted or unrestricted) or proceeds from the Participant's sale of Shares issued pursuant to the Award ("Recapture"), if the Participant does not comply with the conditions of subsections (b), (c), and (e) hereof (collectively, the "Conditions").

(b) The Participant shall comply with any agreement between the Participant and the Company or any Affiliate with regard to nondisclosure of the proprietary or confidential information or material of the Company or any Affiliate.



- (c) The Participant shall comply with any agreement between the Participant and the Company or any Affiliate with regard to intellectual property (including but not limited to patents, trademarks, copyrights, trade secrets, inventions, developments and improvements).
- (d) Upon exercise, payment, or delivery of cash or Company Stock pursuant to an Award, the Participant shall certify on a form acceptable to the Company that he or she is in compliance with the terms and conditions of the Plan.
- (e) If the Company determines, in its sole and absolute discretion, that (i) a Participant has violated any of the Conditions set forth in subsection (b) or (c); (ii) during his or her Continuous Service, or within one year after its termination for any reason, a Participant has solicited any non-administrative employee of the Company to terminate employment with the Company; or (y) during his or her Continuous Service, a Participant has engaged in activities which are materially prejudicial to or in conflict with the interests of the Company, including any breaches of fiduciary duty or the duty of loyalty, then the Company may, in its sole and absolute discretion, impose a Termination, Rescission, and/or Recapture with respect to any or all of the Participant's relevant Awards, Shares, and the proceeds thereof.
- (f) Within ten days after receiving notice from the Company of any such activity described in Section 14(e) above, the Participant shall deliver to the Company the Shares acquired pursuant to the Award, or, if Participant has sold the Shares, the gain realized, or payment received as a result of the rescinded exercise, payment, or delivery; provided, that if the Participant returns Shares that the Participant purchased pursuant to the exercise of an Option (or the gains realized from the sale of such Company Stock), the Company shall promptly refund the exercise price, without earnings, that the Participant paid for the Shares. Any payment by the Participant to the Company pursuant to this Section shall be made either in cash or by returning to the Company the number of Shares that the Participant received in connection with the rescinded exercise, payment, or delivery.
- (g) Notwithstanding the foregoing provisions of this Section, the Company has sole and absolute discretion not to require Termination, Rescission and/or Recapture, and its determination not to require Termination, Rescission and/or Recapture with respect to any particular act by a particular Participant or Award shall not in any way reduce or eliminate the Company's authority to require Termination, Rescission and/or Recapture with respect to any other act or Participant or Award.
- (h) All administrative and discretionary authority given to the Company under this Section shall be exercised by the most senior human resources executive of the Company or such other person or committee (including without limitation the Committee) as the Committee may designate from time to time.
- (i) If any provision within this Section is determined to be unenforceable or invalid under any Applicable Law, such provision will be applied to the maximum extent permitted by Applicable Law, and shall automatically be deemed amended in a manner consistent with its objectives and any limitations required under Applicable Law.

15. Recoupment of Awards. Unless otherwise specifically provided in an Award Agreement, and to the extent permitted by Applicable Law, the Committee may in its sole and absolute discretion, without obtaining the approval or consent of the Company's stockholders or of any Participant, require that any Participant reimburse the Company for all or any portion of any Awards granted under this Plan ("Reimbursement"), or the Committee may require the Termination or Rescission of, or the Recapture associated with, any Award, if and to the extent—

- (a) the granting, vesting, or payment of such Award was predicated upon the achievement of certain financial results that were subsequently the subject of a material financial restatement;

(b) in the Committee's view the Participant either benefited from a calculation that later proves to be materially inaccurate, or engaged in fraud or misconduct that caused or partially caused the need for a material financial restatement by the Company or any Affiliate; and

(c) a lower granting, vesting, or payment of such Award would have occurred based upon the miscalculated amounts or the conduct described in clause (b) of this Section.

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In each instance, the Committee will, to the extent practicable and allowable under Applicable Laws, require Reimbursement, Termination or Rescission of, or Recapture relating to, any such Award granted to a Participant; provided that the Company will not seek Reimbursement, Termination or Rescission of, or Recapture relating to, any such Awards that were paid or vested more than three years prior to the first date of the applicable restatement period.

16. Relationship to other Benefits. No payment pursuant to the Plan shall be taken into account in determining any benefits under any pension, retirement, savings, profit sharing, group insurance, welfare or other benefit plan of the Company or any Affiliate except to the extent otherwise expressly provided in writing in such other plan or an agreement thereunder.

17. Administration of the Plan. The Committee shall administer the Plan in accordance with its terms, provided that the Board may act in lieu of the Committee on any matter. The Committee shall hold meetings at such times and places as it may determine and shall make such rules and regulations for the conduct of its business as it deems advisable. In the absence of a duly appointed Committee, the Board shall function as the Committee for all purposes of the Plan.

(a) Committee Composition. The Board shall appoint the members of the Committee. If and to the extent permitted by Applicable Law, the Committee may authorize one or more executive officers to make Awards to Eligible Persons other than themselves. The Board may at any time appoint additional members to the Committee, remove and replace members of the Committee with or without Cause, and fill vacancies on the Committee however caused.

(b) Powers of the Committee. Subject to the provisions of the Plan, the Committee shall have the authority, in its sole discretion:

(i) to grant Awards and to determine Eligible Persons to whom Awards shall be granted from time to time, and the number of Shares, units, or dollars to be covered by each Award;

(ii) to determine, from time to time, the Fair Market Value of Shares;

(iii) to determine, and to set forth in Award Agreements, the terms and conditions of all Awards, including any applicable exercise or purchase price, the installments and conditions under which an Award shall become vested (which may be based on performance), terminated, expired, cancelled, or replaced, and the circumstances for vesting acceleration or waiver of forfeiture restrictions, and other restrictions and limitations;

(iv) to approve the forms of Award Agreements and all other documents, notices and certificates in connection therewith which need not be identical either as to type of Award or among Participants;

(v) to construe and interpret the terms of the Plan and any Award Agreement, to determine the meaning of their terms, and to prescribe, amend, and rescind rules and procedures relating to the Plan and its administration;

(vi) to the extent consistent with the purposes of the Plan and without amending the Plan, to modify, to cancel, or to waive the Company's rights with respect to any Awards, to adjust or to modify Award Agreements for changes in Applicable Law, and to recognize differences in foreign law, tax policies, or customs;

(vii) in the event that the Company establishes, for itself or using the services of a third party, an automated system for the documentation, granting, settlement, or exercise of Award, such as a system using an internet website or interactive voice response, to implement paperless documentation, granting, settlement, or exercise of Awards by a Participant may be permitted through the use of such an automated system; and



(viii) to make all interpretations and to take all other actions that the Committee may consider necessary or advisable to administer the Plan or to effectuate its purposes.

Subject to Applicable Law and the restrictions set forth in the Plan, the Committee may delegate administrative functions to individuals who are Directors or Employees.

(c) Law Adjustments and Sub-plans. To facilitate the making of any grant of an Award under this Plan, the Committee may adopt rules and provide for such special terms for Awards to Participants who are located within the United States, foreign nationals, or who are employed by the Company or any Affiliate outside of the United States of America as the Committee may consider necessary or appropriate to accommodate differences in local law, tax policy or custom. Without limiting the foregoing, the Company is specifically authorized to adopt rules and procedures regarding the conversion of local currency, taxes, withholding procedures and handling of stock certificates which vary with the customs and requirements of particular countries. The Company may adopt sub-plans and establish escrow accounts and trusts, and settle Awards in cash in lieu of shares, as may be appropriate, required or applicable to particular locations and countries.

(d) Action by Committee. Unless otherwise established by the Board or in any charter of the Committee, a majority of the Committee shall constitute a quorum and the acts of a majority of the members present at any meeting at which a quorum is present, and acts approved in writing by all members of the Committee in lieu of a meeting, shall be deemed the acts of the Committee. Each member of the Committee is entitled to, in good faith, rely or act upon any report or other information furnished to that member by an officer or other employee of the Company or any Affiliate, the Company's independent certified public accounts, or any executive compensation consultant or other professional retained by the Company to assist in the administration of the Plan.

(e) Deference to Committee Determinations. The Committee shall have the discretion to interpret or construe ambiguous, unclear, or implied (but omitted) terms in any fashion it deems to be appropriate in its sole discretion, and to make any findings of fact needed in the administration of the Plan or Award Agreements. The Committee's prior exercise of its discretionary authority shall not obligate it to exercise its authority in a like fashion thereafter. The Committee's interpretation and construction of any provision of the Plan, or of any Award or Award Agreement, and all determination the Committee makes pursuant to the Plan shall be final, binding, and conclusive. The validity of any such interpretation, construction, decision or finding of fact shall not be given de novo review if challenged in court, by arbitration, or in any other forum, and shall be upheld unless clearly made in bad faith or materially affected by fraud.

(f) No Liability; Indemnification. Neither the Board nor any Committee member, nor any Person acting at the direction of the Board or the Committee, shall be liable for any act, omission, interpretation, construction or determination made in good faith with respect to the Plan, any Award or any Award Agreement. The Company and its Affiliates shall pay or reimburse any member of the Committee, as well as any Director, Employee, or Consultant who in good faith takes action on behalf of the Plan, for all expenses incurred with respect to the Plan, and to the full extent allowable under Applicable Law shall indemnify each and every one of them for any claims, liabilities, and costs (including reasonable attorney's fees) arising out of their good faith performance of duties on behalf of the Plan. The Company and its Affiliates may, but shall not be required to, obtain liability insurance for this purpose.

(g) Expenses. The expenses of administering the Plan shall be borne jointly and severally by the Company and its Affiliates.

18. Modification of Awards and Substitution of Options. Within the limitations of the Plan, the Committee may modify an Award to accelerate the rate at which an Option or SAR may be exercised, to accelerate the vesting of any Award, to extend or renew outstanding Awards, to accept the cancellation of outstanding Awards to the extent not

previously exercised, or to make any change that the Plan would permit for a new Award. Notwithstanding the foregoing, no modification of an outstanding Award may materially and adversely affect a Participant's rights thereunder unless either (a) the Participant provides written consent to the modification, or (b) before a Change in Control, the Committee determines in good faith that the modification is not materially adverse to the Participant. Except as provided in Section 13, without prior stockholder approval, in no event may the Committee exercise its discretion to reduce the exercise price of outstanding Options or SARs or effect repricing through cancellation and re-grants or cancellation in exchange for cash.

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19. Plan Amendment and Termination. The Board may amend or terminate the Plan as it shall deem advisable; provided that no change shall be made that increases the total number of Shares reserved for issuance pursuant to Awards (except pursuant to Section 13 above) unless such change is authorized by the stockholders of the Company. A termination or amendment of the Plan shall not materially and adversely affect a Participant's vested rights under an Award previously granted to him or her, unless either (a) the Participant consents in writing to such termination or amendment, or (b) before a Change in Control, the Committee determines in good faith that the modification is not materially adverse to the Participant. Notwithstanding the foregoing, the Committee may amend the Plan to comply with changes in tax or securities laws or regulations, or in the interpretation thereof.

20. Term of Plan. If not sooner terminated by the Board, this Plan shall terminate at the close of business on the date ten years after its Effective Date. No Awards shall be made under the Plan after its termination; however, termination of the Plan shall not affect the Committee's ability to exercise the powers granted to it hereunder with respect to Awards granted under the Plan prior to the date of such termination.

21. Governing Law. The terms of this Plan shall be governed by the laws of the State of Delaware, within the United States of America, without regard to the State's conflict of laws rules.

22. Laws and Regulations.

(a) General Rules. This Plan, the granting of Awards, the exercise of Options and SARs, and the obligations of the Company hereunder (including those to pay cash or to deliver, sell or accept the surrender of any of its Shares or other securities) shall be subject to all Applicable Laws. In the event that any Shares are not registered under any Applicable Law prior to the required delivery of them pursuant to Awards, the Company may require, as a condition to their issuance or delivery, that the persons to whom the Shares are to be issued or delivered make any written representations and warranties (such as that such Shares are being acquired by the Participant for investment for the Participant's own account and not with a view to, for resale in connection with, or with an intent of participating directly or indirectly in, any distribution of such Shares) that the Committee may reasonably require, and the Committee may in its sole discretion include a legend to such effect on the certificates representing any Shares issued or delivered pursuant to the Plan.

(b) Black-out Periods. Notwithstanding any contrary terms within the Plan or any Award Agreement, the Committee shall have the absolute discretion to impose a "blackout" period on the exercise of any Option or SAR, as well as the settlement of any Award, with respect to any or all Participants (including those whose Continuous Service has ended) to the extent that the Committee determines that doing so is either desirable or required in order to comply with applicable securities laws.

23. No Stockholder Rights. Neither a Participant nor any transferee or Beneficiary of a Participant shall have any rights as a stockholder of the Company with respect to any Shares underlying any Award until the date of issuance of the Shares to such Participant, transferee, or Beneficiary for such Shares in accordance with the Company's governing instruments and Applicable Law. Prior to the issuance of Shares or Restricted Shares pursuant to an Award, a Participant shall not have the right to vote or to receive dividends or any other rights as a stockholder with respect to the Shares underlying the Award (unless otherwise provided in the Award Agreement for Restricted Shares), notwithstanding its exercise in the case of Options and SARs. No adjustment will be made for a dividend or other right that is determined based on a record date prior to the date the Share is issued, except as otherwise specifically provided for in this Plan or an Award Agreement.



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Appendix I: Definitions

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As used in the Plan, the following terms have the meanings indicated when they begin with initial capital letters within the Plan:

“Affiliate” means, with respect to any Person, any other Person that directly or indirectly controls or is controlled by or under common control with such Person. For the purposes of this definition, “control,” when used with respect to any Person, means the possession, direct or indirect, of the power to direct or cause the direction of the management and policies of such Person or the power to elect directors, whether through the ownership of voting securities, by contract or otherwise; and the terms “affiliated,” “controlling” and “controlled” have meanings correlative to the foregoing.

“Applicable Law” means the legal requirements relating to the administration of options and share-based plans under any applicable laws of the United States, any other country, and any provincial, state, or local subdivision, any applicable stock exchange or automated quotation system rules or regulations, as such laws, rules, regulations and requirements shall be in place from time to time.

“Award” means any award made pursuant to the Plan, including awards made in the form of an Option, an SAR, a Restricted Share, a RSU, an Unrestricted Share, a DSU, a Performance Unit, a Performance Award, or Dividend Equivalent Rights, or any combination thereof, whether alternative or cumulative.

“Award Agreement” means any written document setting forth the terms of an Award that has been authorized by the Committee. The Committee shall determine the form or forms of documents to be used, and may change them from time to time for any reason.

“Beneficiary” means the person or entity designated by the Participant, in a form approved by the Company, to exercise the Participant’s rights with respect to an Award or receive payment or settlement under an Award after the Participant’s death.

“Board” means the Board of Directors of the Company.

“Cause” will have the meaning set forth in any unexpired employment agreement between the Company and the Participant. In the absence of such an agreement, “Cause” will exist if the Participant is terminated from employment or other service with the Company or an Affiliate for any of the following reasons: (i) the Participant’s willful failure to substantially perform his or her duties and responsibilities to the Company or deliberate violation of a material Company policy; (ii) the Participant’s commission of any material act or acts of fraud, embezzlement, dishonesty, or other willful misconduct; (iii) the Participant’s material unauthorized use or disclosure of any proprietary information or trade secrets of the Company or any other party to whom the Participant owes an obligation of nondisclosure as a result of his or her relationship with the Company; or (iv) Participant’s willful and material breach of any of his or her obligations under any written agreement or covenant with the Company. The foregoing definition does not in any way limit the Company’s ability to terminate a Participant’s employment or

consulting relationship at any time, and the term “Company” will be interpreted herein to include any Affiliate or successor thereto, if appropriate.

“Change in Control” means any of the following:

(i) Merger. The Company consummates a merger, or consolidation of the Company with any other corporation unless: (A) the voting securities of the Company outstanding immediately before the merger or consolidation would continue to represent (either by remaining outstanding or by being converted into voting securities of the surviving entity) at least 50% of the combined voting power of the voting securities of the Company or such surviving entity outstanding immediately after such merger or consolidation; and (B) no Person (other than

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Persons who are Employees at any time more than one year before a transaction) becomes the Beneficial Owner, directly or indirectly, of securities of the Company representing 50% or more of the combined voting power of the Company's then outstanding securities.

(ii) Sale of Assets. The stockholders of the Company approve an agreement for the sale or disposition by the Company of all, or substantially all, of the Company's assets.

Notwithstanding the foregoing, a "Change in Control" shall not be deemed to have occurred by virtue of the consummation of any transaction or series of integrated transactions immediately following which the record holders of the common stock of the Company immediately prior to such transaction or series of transactions continue to have substantially the same proportionate ownership in an entity which owns all or substantially all of the assets of the Company immediately following such transaction or series of transactions.

"Code" means the Internal Revenue Code of 1986, as amended.

"Committee" means the Compensation Committee of the Board or its successor, provided that the term "Committee" means (i) with respect to any decision involving an Award intended to satisfy the requirements of Code Section 162(m), a committee consisting of two or more Directors of the Company who are intended to be "outside directors" within the meaning of Code Section 162(m), and (ii) with respect to any decision relating to a Reporting Person, a committee consisting of solely of two or more Directors who are intended to be disinterested within the meaning of Rule 16b-3.

"Company" means Vermillion, Inc., a Delaware corporation; provided that in the event the Company reincorporates to another jurisdiction, all references to the term "Company" shall refer to the Company in such new jurisdiction.

"Company Stock" means common stock, \$0.001 par value, of the Company. In the event of a change in the capital structure of the Company affecting the common stock (as provided in Section 13), the Shares resulting from such a change in the common stock shall be deemed to be Company Stock within the meaning of the Plan.

"Consultant" means any person (other than an Employee or Director), including an advisor, who is engaged by the Company or any Affiliate to render services and is compensated for such services.

"Continuous Service" means a Participant's period of service in the absence of any interruption or termination, as an Employee, Director, or Consultant. Continuous Service shall not be considered interrupted in the case of: (i) sick leave; (ii) military leave; (iii) any other leave of absence approved by the Committee, provided that such leave is for a period of not more than 90 days, unless reemployment upon the expiration of such leave is guaranteed by contract or statute, or unless provided otherwise pursuant to Company policy adopted from time to time; (iv) changes in status from Director to advisory director or emeritus status; or (v) transfers between locations of the Company or between the Company and its Affiliates. Changes in status between service as an Employee,

Director, and a Consultant will not constitute an interruption of Continuous Service if the individual continues to perform bona fide services for the Company. The Committee shall have the discretion to determine whether and to what extent the vesting of any Awards shall be tolled during any paid or unpaid leave of absence; provided, however, that in the absence of such determination, vesting for all Awards shall be tolled during any such unpaid leave (but not for a paid leave).

"Deferred Share Units" or "DSUs" mean Awards pursuant to Section 8 of the Plan.

"Director" means a member of the Board, or a member of the board of directors of an Affiliate.

“Disabled” means a condition under which a Participant –

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(i) is unable to engage in any substantial gainful activity by reason of any medically determinable physical or mental impairment which can be expected to result in death or can be expected to last for a continuous period of not less than 12 months, or

(ii) is, by reason of any medically determinable physical or mental impairment which can be expected to result in death or can be expected to last for a continuous period of not less than 12 months, received income replacement benefits for a period of not less than three months under an accident or health plan covering employees of the Company.

“Dividend Equivalent Rights” means Awards pursuant to Section 10 of the Plan, which may be attached to other Awards.

“Effective Date” means the date on which the shareholders of the Company approve the Plan, as amended and restated.

“Eligible Person” means any Consultant, Director, or Employee.

“Employee” means any person whom the Company or any Affiliate classifies as an employee (including an officer) for employment tax purposes, whether or not that classification is correct. The payment by the Company of a director’s fee to a Director shall not be sufficient to constitute “employment” of such Director by the Company.

“Employer” means the Company and each Subsidiary and Affiliate that employs one or more Participants.

“Exchange Act” means the Securities Exchange Act of 1934, as amended.

“Fair Market Value” means, as of any date, the closing price of the Company Stock on the New York Stock Exchange, the American Stock Exchange, NASDAQ or such other stock exchange as the Company Stock is then listed for trading, as of such date (and, if none, as determined by the Committee in good faith based on relevant facts and circumstances).

“Grant Date” means the later of (i) the date designated as the “Grant Date” within an Award Agreement, and (ii) date on which the Committee determines the key terms of an Award, provided that as soon as reasonably practical thereafter the Committee both notifies the Eligible Person of the Award and enters into an Award Agreement with the Eligible Person.

“Incentive Stock Option” (or “ISO”) means, an Option that qualifies for favorable income tax treatment under Code Section 422, and which is intended by the Committee to constitute an Incentive Stock Option

“Non-ISO” means an Option that is not an Incentive Stock Option.

“Option” means a right to purchase Company Stock granted under the Plan, at a price determined in accordance with the Plan.

“Participant” means any Eligible Person who holds an outstanding Award.

“Performance Awards” mean Awards granted pursuant to Section 9.

“Performance Unit” means an Award granted pursuant to Section 9(a) of the Plan which may be paid in cash, in Shares, or such combination of cash and Shares as the Committee in its sole discretion shall determine.

“Person” means any natural person, association, trust, business trust, cooperative, corporation, general partnership, joint venture, joint-stock company, limited partnership, limited liability company, real estate investment trust, regulatory body, governmental agency or instrumentality, unincorporated organization or organizational entity.

“Plan” means this Vermillion, Inc. Second Amended and Restated 2010 Stock Incentive Plan.

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“Recapture” and “Rescission” have the meaning set forth in Section 14 of the Plan.

“Reimbursement” has the meaning set forth in Section 15 of the Plan.

“Reporting Person” means an Employee, Director, or Consultant who is subject to the reporting requirements set forth under Rule 16b-3.

“Restricted Share” means a Share of Company Stock awarded with restrictions imposed under Section 7.

“Restricted Share Unit” or “RSU” means a right granted to a Participant to receive Shares or cash upon the lapse of restrictions imposed under Section 7.

“Retirement” means a Participant’s termination of employment after age 65.

“Rule 16b-3” means Rule 16b-3 promulgated under the Exchange Act, as amended from time to time, or any successor provision.

“Share” means a share of Company Stock, as adjusted in accordance with Section 13 of the Plan.

“SAR” or “Share Appreciation Right” means a right to receive amounts awarded under Section 6.

“Ten Percent Holder” means a person who owns (within the meaning of Code Section 422) stock representing more than ten percent (10%) of the combined voting power of all classes of stock of the Company.

“Unrestricted Shares” mean Shares (without restrictions) awarded pursuant to Section 7 of the Plan.

“Withholding Taxes” means the aggregate minimum amount of federal, state, local and foreign income, payroll and other taxes that the Company and any Affiliates are required to withhold in connection with any Award.

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Vermillion, Inc.

Second Amended and Restated 2010 Stock Incentive Plan

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Appendix II: \_\_\_\_ Sub-Plan

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This Appendix II applies to any Awards that are made to Eligible Persons who are residents of \_\_\_\_\_ and who are or may become subject to its tax laws (i.e. income tax and/or social security tax) as a result of Awards granted under the Vermillion, Inc. Second Amended and Restated 2010 Stock Incentive Plan (the "Plan"). Terms herein that begin with initial capital letters have the special definition set forth in the Plan.

This Appendix II shall be read in conjunction with the Plan and is subject to the terms and conditions of the Plan; provided that, to the extent that the terms and conditions of the Plan differ from or conflict with the terms of this Appendix II, the following terms of this Appendix II shall prevail:

1. \_\_\_\_\_

Vermillion, Inc.

Second Amended and Restated 2010 Stock Incentive Plan

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PRELIMINARY PROXY CARD – SUBJECT TO COMPLETION

Shareowner Services

P.O. Box 64945

St. Paul, MN 55164-0945

TO VOTE BY MAIL AS THE BOARD OF DIRECTORS RECOMMENDS ON ALL ITEMS BELOW,  
SIMPLY SIGN, DATE, AND RETURN THIS PROXY CARD.

VERMILLION, INC.'s Board of Directors recommends a vote "FOR" all director nominees listed in proposal 1 and "FOR" proposals 2, 3, 4 and 5.

1. Election of 01 James S. Burns 05 David R. Schreiber FOR ALL WITHHOLD ALL

directors:02 Veronica G.H. Jordan, Ph.D. (except as marked

03 James T. LaFranceto the contrary below).

04 Valerie B. Palmieri

(Instructions: To withhold authority to vote for any indicated nominee, write the number(s) of the nominee(s) in the box provided to the right.)

2. Proposal to ratify the terms and issuance of the Company's Series B Convertible Preferred Stock, and to approve the issuance of such number of shares of the Company's common stock issuable upon full conversion of the Series B Convertible Preferred Stock, including shares issuable pursuant to customary anti-dilution provisions.

3. Advisory vote to approve the compensation of the Company's named executive officers.

4. Proposal to approve an amendment to the Vermillion, Inc. Second Amended and Restated 2010 Stock Incentive Plan.

5. Proposal to ratify the selection of BDO USA, LLP as the Company's Independent registered public accounting firm for the year ending December 31, 2018.



THIS PROXY WHEN PROPERLY EXECUTED WILL BE VOTED AS DIRECTED OR, IF NO DIRECTION IS GIVEN, WILL BE VOTED FOR THE NOMINEES LISTED IN PROPOSAL 1 AND FOR PROPOSALS 2, 3, 4 AND 5.

Address Change? Mark box, sign, and indicate changes below: Date

Signature(s) in Box

Please sign exactly as your name(s) appears on the Proxy. If held in joint tenancy, all persons should sign. Trustees, administrators, etc., should include title and authority. Corporations should provide full name of corporation and title of authorized officer signing the Proxy

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VERMILLION, INC.

ANNUAL MEETING OF STOCKHOLDERS

Thursday, June 21, 2018

8:00 a.m. (Eastern Daylight Time)

35 Nutmeg Drive, Suite 260

Trumbull, CT 06611

VERMILLION, INC.

12117 Bee Caves Road, Building Three, Suite 100

Austin, Texas 78738

proxy

THIS PROXY IS SOLICITED ON BEHALF OF THE BOARD OF DIRECTORS

The signatory hereby appoints each of Valerie B. Palmieri and Robert Beechey, with full power of substitution, as the lawful attorney and proxy of the signatory, revoking all proxies previously given, and hereby authorizes each of them to vote as designated on the reverse side, and, in his or her discretion, upon such other business as may properly be presented at the meeting, all of the shares of common stock of VERMILLION, INC. which the signatory shall be entitled to vote at the Annual Meeting of Stockholders to be held on June 21, 2018, and at any adjournments or postponements thereof.

This proxy, when properly executed, will be voted in the manner directed by the stockholder(s) signing on the reverse side. IF NO CHOICE IS INDICATED, THIS PROXY WILL BE VOTED "FOR" THE NOMINEES LISTED IN PROPOSAL 1 AND "FOR" PROPOSALS 2, 3, 4 AND 5 ON THE REVERSE SIDE. This proxy may be revoked

at any time prior to the time it is voted by any means described in the accompanying proxy statement.

PLEASE COMPLETE, DATE AND SIGN THIS PROXY AND MAIL IT PROMPTLY IN THE ENCLOSED ENVELOPE TO ASSURE REPRESENTATION OF YOUR SHARES.

(TO BE SIGNED ON REVERSE SIDE)