

**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 Registrant

Filed by a Party other than the Registrant

Check the appropriate box:

Preliminary Proxy Statement

Confidential, for Use of the Commission Only (as permitted by Rule 14a-6(e)(2))

Definitive Proxy Statement

Definitive Additional Materials

Soliciting Material under §240.14a-12

Vermillion, Inc.

(Name of Registrant as Specified in its Charter)

(Name of Person(s) Filing Proxy Statement, if other than the Registrant)

Payment of Filing Fee (Check the appropriate box):

No fee required.

Fee computed on table below per Exchange Act Rules 14a-6(i)(1) and 0-11.

(1) Title of each class of securities to which transaction applies:

(2) Aggregate number of securities to which transaction applies:

(3) Per unit price or other underlying value of transaction computed pursuant to Exchange Act Rule 0-11 (set forth the amount on which the filing fee is calculated and state how it was determined):

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Fee paid previously with preliminary materials.

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(1) Amount Previously Paid:

(2) Form, Schedule or Registration Statement No.:

(3) Filing Party:

(4) Date Filed:

VERMILLION, INC.

NOTICE OF ANNUAL MEETING OF STOCKHOLDERS TO BE HELD ON JUNE 18, 2019

Dear Stockholder:

NOTICE IS HEREBY GIVEN that the 2019 Annual Meeting of Stockholders of Vermillion, Inc., a Delaware corporation (the "Company"), will be held on Tuesday, June 18, 2019 at 8:00 a.m. (Eastern Daylight Time), at the Trumbull Marriott, 180 Hawley Ln., Trumbull, Connecticut 06611, for the following purposes:

1. To elect as directors the six nominees named in the proxy statement and recommended by the Board of Directors to serve for a one-year term expiring at the 2020 annual meeting of stockholders and until their successors are elected and qualified (Proposal 1);
2. To hold an advisory vote to approve the compensation of the Company's named executive officers as disclosed in the proxy statement (Proposal 2);
3. To approve the Company's 2019 Stock Incentive Plan (Proposal 3);
4. To ratify the selection of BDO USA, LLP as the Company's independent registered public accounting firm for the year ending December 31, 2019 (Proposal 4); and
5. 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 May 7, 2019 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
May 9, 2019

By Order of the Board of Directors

/s/ Valerie B. Palmieri
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 18, 2019

The proxy statement and the Company's Annual Report on Form 10-K for the year ended December 31, 2018 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

PROXY STATEMENT

Annual Meeting of Stockholders to be Held on June 18, 2019

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 2019 annual meeting of stockholders (the “Annual Meeting”) to be held on Tuesday, June 18, 2019 at 8:00 a.m. (Eastern Daylight Time). The Annual Meeting will be held at the Company’s office located at Trumbull Marriott, 180 Hawley Ln., 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, 2018 will first be mailed to stockholders on or about May 13, 2019, 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 May 7, 2019 (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 75,580,474 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.

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 compensation of our Named Executive Officers (as such term is defined under “Compensation Discussion and Analysis” below) (Proposal 2);
- “FOR” the approval of the Company’s 2019 Stock Incentive Plan (Proposal 3); and
- “FOR” the ratification of the selection of BDO USA, LLP as our independent registered public accounting firm for the year ending December 31, 2019 (Proposal 4).

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 six nominees receiving the highest number of “FOR” votes will be elected as directors.

The proposals to approve the compensation of our Named Executive Officers (Proposal 2) and the Company’s 2019 Stock Incentive Plan (Proposal 3) and to ratify the selection of BDO USA, LLP as our independent registered public accounting firm (Proposal 4) 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 compensation of our Named Executive Officers (Proposal 2) and the Company’s 2019 Stock Incentive Plan (Proposal 3) and to ratify the selection of BDO USA, LLP as our independent registered public accounting firm (Proposal 4).

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 compensation of our Named Executive Officers (Proposal 2) or to approve the Company's 2019 Stock Incentive Plan (Proposal 3).

The proposal to ratify the selection of BDO USA, LLP as our independent registered public accounting firm (Proposal 4) 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 2020 Annual Meeting

In order to be eligible for inclusion in the Company's proxy statement and form of proxy for the 2020 annual meeting of stockholders (the "2020 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 2020 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 January 14, 2020 in order to consider it for inclusion in the proxy statement for our 2020 Annual Meeting.

Stockholder proposals and director nominations not included in our proxy statement for our 2020 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 19, 2020 and March 20, 2020 will not be voted on at the 2020 Annual Meeting. Our Bylaws contain provisions regarding 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.

PROPOSAL 1: ELECTION OF DIRECTORS

Our Board of Directors currently consists of six members and two vacant Board seats, with directors serving for a one-year term expiring at the 2019 annual meeting of our stockholders and until their successors are elected and qualified.

The six persons named below, all of whom currently serve on our Board, have been nominated to serve on the Board until our 2020 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 six nominees receiving the highest number of affirmative votes will be elected as directors. Stockholders may not vote for more than six 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.

Recent Changes to the Board

In an effort to supplement the qualifications and skills of our Board, our President and Chief Executive Officer, Ms. Valerie Palmieri recommended Ms. Nancy G. Coccozza to the Nominating and Governance Committee. The Nominating and Governance Committee evaluated the candidate on the basis of many factors including, but not limited to, requirements for independence; understanding of the Company's businesses and its industry and markets; professional expertise and educational background; the candidate's ethics, integrity, values, inquisitive and objective perspectives, practical wisdom, judgment and availability; and other factors that promote diversity of thought, views and experience. The candidate also interviewed with directors and a background review of the candidate was conducted.

As a result of this process, the Nominating and Governance Committee determined that Ms. Nancy G. Coccozza was a qualified director candidate, and recommended her to our Board for appointment. Our Board appointed Ms. Coccozza as a director effective as of August 17, 2018.

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.	72	Chairman - Nominating and Governance Committee; Member - Compensation Committee
Ms. Nancy G. Coccozza	58	Member - Audit Committee; Member - Compensation Committee; Member - Strategy Committee
Veronica G.H. Jordan, Ph.D.	68	Chairman - Compensation Committee; Member - Audit Committee
Mr. James T. LaFrance	60	Chairman of the Board
Ms. Valerie B. Palmieri	57	President, Chief Executive Officer and Director
Mr. David R. Schreiber	59	Chairman - Audit Committee; Member - Nominating and Governance Committee

James S. Burns, D.L.S., age 72, 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 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 a 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.

Nancy Coccozza, age 58, became a director of Vermillion in August 2018. She is a member of our Audit Committee and is also a member of our Compensation Committee. Ms. Coccozza retired in June 2018 from the position of President of the Medicare Business for Aetna, where she was responsible for Aetna's Medicare strategy, growth and operating results; she led a team that, at the time of her retirement, served more than 4 million Medicare members nationwide through a robust portfolio of Medicare Advantage plans, Medicare prescription drug plans and Medicare Supplement plans. Prior to Aetna, Ms. Coccozza was Executive Vice President at HealthMarkets, an individual market health insurance provider, where she led the Medicare division. She also led the government insurance programs at Coventry Health Care. Ms. Coccozza began her career at Aetna, where she spent 16 years building and leading various commercial managed care operations. Ms. Coccozza holds a B.S. degree in accounting from Thomas Jefferson/Philadelphia University.

Our Board has determined that based upon Ms. Coccozza's extensive experience in the health industry, including her financial and Medicare reimbursement background, she has the qualifications and skills to serve as a member of our Board, a member of our Audit Committee, a member of our Compensation Committee and a member of our Strategy Committee.

Veronica G.H. Jordan, Ph.D., age 68, 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 Chairperson 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 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 60, was appointed to our Board 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 over 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. and Personal Genome Diagnostics, 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 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 and his prior board position, he has the qualifications and skills to serve as a member and the Chairman of our Board.

Valerie B. Palmieri, age 57, was appointed as our President and Chief Executive Officer in January 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 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.

David R. Schreiber, age 59, 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 over 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 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, 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, Nancy G. Coccozza, Veronica G.H. Jordan, James T. LaFrance and David R. Schreiber 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 nine meetings in 2018. 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, except for Ms. Coccozza, who attended all but one such meeting held in 2018 during the period for which she served as a director. Applicable Nasdaq listing standards require that the independent directors meet from time to time in executive session. In 2018, 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, 2018 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. Coccozza and Dr. Jordan. 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 three times in 2018. 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 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 Vermillion, Inc. Second Amended and Restated 2010 Stock Incentive Plan (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 Ms. Coccozza. 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 2018. The performance and compensation process and specific determinations of the Compensation Committee with respect to executive compensation for 2018 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 2018.

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 2018.

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 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 2020 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 one director, Ms. Coccozza.

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.

BOARD COMPENSATION

Our director compensation program is designed both to attract qualified non-employee directors and to fairly compensate them for their substantial responsibilities and time commitment. Periodically, the Compensation Committee reviews and determines the adequacy of the compensation program for non-employee directors and, based upon the results of its review, the Compensation Committee will make recommendations regarding the compensation program for non-employee directors to the Board. For 2018, the Compensation Committee hired an independent compensation and benefits consultant to assist in the review of compensation. Considering the independent review and the elimination of the cash component, the compensation for the board was increased as follows:

	Grant Date Fair Value Restricted Stock Units ("RSUs")
Annual Retainer:	
Chairman of the Board	\$ 120,000
Other non-employee directors	80,000
Annual Retainer for Committee Chairs:	
Audit Committee	\$ 15,000
Compensation Committee	12,000
Nomination and Governance Committee	6,000
Annual Retainer for Other Committee Members:	
Audit Committee	\$ 7,500
Compensation Committee	6,000
Nomination and Governance Committee	4,000

RSUs granted to non-employee directors vest 50% on June 1, 25% on September 1 and 25% on December 1, subject to the director's continued service through the applicable vesting date.

2018 Director Compensation Table

The table below presents the compensation earned by our outside directors for the year ended December 31, 2018.

Name	Fees Earned or Paid in Cash	Stock Awards ⁽¹⁾	Total
James S. Burns	\$ —	\$ 92,000	\$ 92,000
Nancy Coccozza ⁽²⁾	—	34,838	34,838
Veronica G.H. Jordan	—	99,500	99,500
James T. LaFrance ⁽³⁾	—	121,250	121,250
David R. Schreiber	—	99,000	99,000
Carl Severinghaus ⁽⁴⁾	—	43,750	43,750
Eric Varma ⁽⁵⁾	—	—	—

- (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 2018 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 2018, the price and target value was fixed in April 2018 when the trailing average price per share of the Company's stock was \$1.25 per share.
- (2) The director compensation for Ms. Coccozza was prorated to reflect her appointment to the Board on August 17, 2018.
- (3) As of December 31, 2018, Mr. LaFrance held outstanding vested stock options to purchase 238,625 shares of Company common stock.
- (4) Mr. Severinghaus did not stand for reelection at the 2018 annual meeting of stockholders of the Company and his 2018 compensation was prorated to reflect his service during 2018.
- (5) Dr. Varma waived his compensation for 2018.

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, 2018.

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

Veronica G.H. Jordan, Chairman

James S. Burns

Nancy Coccozza

¹The 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 2018 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 2018

The following individuals who served as executive officers of the Company during 2018 were our "Named Executive Officers" for 2018:

Name	Positions
Valerie B. Palmieri	President, Chief Executive Officer
Robert Beechey	Chief Financial Officer
Fred Ferrara	Former Chief Operating Officer (through June 1, 2018)

Compensation Philosophy and Objectives

Our executive compensation program for our Named Executive Officers is administered by the Compensation Committee of the Board. 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.

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 2018. 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 key employees other than the Chief Executive Officer.

On June 21, 2018, we held a stockholder advisory vote on the compensation of our named executive officers for 2018, commonly referred to as a say-on-pay vote. Our stockholders overwhelmingly voted to approve the 2018 compensation of our named executive officers, as disclosed in the 2018 proxy statement, with approximately 98% 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 2018 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., NanoString Technologies, Inc., Orasure Technologies Inc., Oxford Immunotec Global PLC, Pacific Biosciences of California, Inc., T2 Biosystems, Inc., Trovagene, Inc., Venaxis, Inc., and Veracyte, Inc.

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 market. Salaries paid to the Named Executive Officers in fiscal 2018 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 2018, no adjustments to base salary were made with respect to our Named Executive Officers.

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 2018, 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; and
- Cash utilization.

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 2018, the payout targets for each Named Executive Officer remained the same as the prior year and were as follows:

**Target Opportunity
(as a % of annual base salary)**

Valerie B. Palmieri	50%
Robert Beechey	40%
Fred Ferrara	40%

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 2018 goals, milestones and targets, the Compensation Committee determined that the targets for the fiscal year 2018 had been partially met and paid actual bonus payouts of approximately 25% of the aggregate bonus target amount for each of the Named Executive Officers other than Mr. Ferrara. Mr. Ferrara did not receive a 2018 annual bonus in light of his separation from the Company. The following table sets forth the 2018 annual bonus payouts for each of our Named Executive Officers::

	Annual Bonus Award
Valerie Palmieri	\$46,875
Robert Beechey	\$28,000
Fred Ferrara	\$0

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 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, 2018 in the form of stock options, as follows:

Name	Number of Securities Underlying 2018 Option Awards ⁽¹⁾
Valerie B. Palmieri	450,000
Robert Beechey	150,000
Fred Ferrara	100,000

(1) Stock options granted were subject to annual vesting over a period of four years, provided that the executive remains employed with the Company through the applicable vesting date. Mr. Ferrara forfeited his 2018 option grant in light of his separation from the Company.

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 our President and Chief Executive Officer and nine months for our 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 shareholder 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.

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. Effective April 1, 2019, Ms. Palmieri's salary was increased to \$400,000. 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 established 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 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 Chief Operating Officer. We entered into an employment agreement with Fred Ferrara on April 1, 2015. Under the terms of the employment agreement, in the event Mr. Ferrara was terminated without cause or resigned for good reason (as these terms are defined in the employment agreement), he would be 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 was terminated without cause or if he resigned 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 would vest upon the date of such termination. In connection with his separation from the Company, Mr. Ferrara received separation benefits in accordance with the terms of his employment agreement.

2018 Summary Compensation Table

The compensation earned by the Named Executive Officers for the years ended December 31, 2018 and December 31, 2017 was as follows:

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⁾	Total
Valerie B. Palmieri	2018	\$ 375,000	\$ —	\$ —	\$ 261,900	\$ 46,875	\$ —	\$ 682	\$ 684,457
President and Chief Executive Officer	2017	\$ 375,000	\$ —	\$ —	\$ 611,456	\$ 121,875	\$ —	\$ 682	\$ 1,109,013
Robert Beechey	2018	\$ 280,000	\$ —	\$ —	\$ 87,300	\$ 28,000	\$ —	\$ 426	\$ 395,726
Chief Financial Officer (effective December 18, 2017)	2017	\$ 11,667	\$ —	\$ —	\$ 159,600	\$ 2,593	\$ —	\$ —	\$ 173,860
Fred Ferrara	2018	\$ 130,359	\$ —	\$ —	\$ 58,200	\$ —	\$ —	\$ 274,910	⁽³⁾ \$ 463,469
Former Chief Operating Officer	2017	\$ 310,000	\$ —	\$ —	\$ 138,814	\$ 40,300	\$ —	\$ 682	\$ 489,796

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- (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. 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, 2018.
- (2) Amount represents performance bonus for fiscal years 2018 and 2017.
- (3) Includes Mr. Ferrara's severance payments due subsequent to the cessation of his service as Chief Operating Officer on June 1, 2018 of \$232,500, paid time off payout of \$18,562 and post-employment health benefit payments of \$23,535.
- (4) All Other Compensation also includes Company paid insurance premiums of less than \$1,000.

2018 Grants of Plan-Based Awards

The grants of plan-based awards to the Named Executive Officers during 2018 were as follows:

Name	Grant Date	Estimated future payouts under non-equity incentive plan awards ⁽¹⁾			All other option awards: Number of securities underlying options (#) ⁽²⁾	Exercise or base price of option awards (\$/sh) ⁽³⁾	Grant date fair value of option awards(\$) ⁽⁴⁾
		Threshold	Target	Maximum			
		(\$)	(\$)	(\$)			
Valerie B. Palmieri	4/13/2018	—	—	—	450,000	1.11	261,900
		1	187,500	281,250	—	—	—
Robert Beechey	4/13/2018	—	—	—	150,000	1.11	87,300
		1	112,000	168,000	—	—	—
Fred Ferrara	4/13/2018	—	—	—	100,000	1.11	58,200
		1	124,000	186,000	—	—	—

- (1) These columns show the potential value of the payout for each named executive officer in 2018 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. The 2018 payouts are included in the "2018 Summary Compensation Table." In connection with his separation, Mr. Ferrara did not receive a 2018 bonus payout.
- (2) Stock options granted vest 25% annually over a four year period, subject to the Named Executive Officer's continued employment through the applicable vesting date. In connection with his separation, Mr. Ferrara forfeited his option grant.
- (3) 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.
- (4) This column shows the grant date fair value under ASC Topic 718 of stock options awards granted to Named Executive Officers in 2018. 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. More information regarding these awards is included in the Compensation Discussion and Analysis as well as in Note 9 to the Annual Report on Form 10-K for the year ended December 31, 2018.

2018 Outstanding Equity Awards at Fiscal Year-End

The outstanding equity awards held by the Named Executive Officers as of December 31, 2018 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 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 Unearned Shares, Units or Other Rights that have not Vested	Equity Incentive Plan Awards: Market or Payout Value of Unearned Shares, Units or Other Rights that have not Vested	
Valerie Palmieri	175,000	—	—	\$ 1.55	10/22/2024	—	—	—	—	
	391,666	8,334	—	\$ 1.95	1/2/2025 ⁽¹⁾	—	—	—	—	
	225,000	225,000	—	\$ 1.57	3/16/2026 ⁽²⁾	—	—	—	—	
	100,000	—	—	\$ 0.89	11/7/2026	—	—	—	—	
	112,500	337,500	—	\$ 2.14	3/22/2027 ⁽²⁾	—	—	—	—	
Robert Beechey	—	450,000	—	\$ 1.11	4/13/2028 ⁽²⁾	—	—	—	—	
	37,500	112,500	—	\$ 2.05	12/17/2027 ⁽²⁾	—	—	—	—	
Fred Ferrara	—	150,000	—	\$ 1.11	4/13/2028 ⁽²⁾	—	—	—	—	
	150,000	—	—	\$ 1.74	4/1/2025	—	—	—	—	
	50,000	—	—	\$ 1.57	3/16/2026	—	—	—	—	
	12,500	—	—	\$ 0.91	11/1/2026	—	—	—	—	
	7,500	—	—	\$ 0.89	11/7/2026	—	—	—	—	
	25,000	—	—	\$ 2.14	3/22/2027	—	—	—	—	

(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.

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, 2018:

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	\$ —	\$ 32,648
	Within 12 Months After Change-in Control ⁽²⁾	375,000	—	32,648
	For cause	—	—	—
Robert Beechey	Termination ⁽¹⁾	210,000	—	17,282
	Within 12 Months After Change-in Control ⁽²⁾	210,000	—	17,282
	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 \$0.30 (the December 31, 2018 closing price of our common stock). These amounts are in addition to the existing value of options vested at December 31, 2018.
 - (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.

As noted above, in connection with his separation from the Company, Mr. Ferrara received separation benefits in accordance with the terms of his employment agreement in the form of (i) continued payment of his base salary as then in effect for a period of nine months following the date of termination (\$232,500); (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 (\$23,535) 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).

PROPOSAL 2: 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 of stockholders ("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.

SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT

The following table sets forth certain information regarding beneficial ownership of our common stock as of May 7, 2019 (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 May 7, 2019, 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) 75,580,474 shares of common stock outstanding as of May 7, 2019, 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 May 7, 2019.

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	18,108,802	23.7%
H. George Schuler ⁽²⁾ 100 N. Field Drive, Suite 360 Lake Forest, IL 60045	11,149,779	14.5%
Larry N. Feinberg ⁽³⁾ c/o Oracle Investment Management, Inc. 200 Greenwich Avenue Greenwich, CT 06830	10,288,587	13.5%
Seamark Capital, LP ⁽⁴⁾ 223 Wilmington West Chester Pike, Suite 115 Chadds Ford, PA 19317	4,234,248	5.6%
Tino Hans Schuler ⁽⁵⁾ 100 N. Field Drive, Suite 360 Lake Forest, IL 60045	4,162,129	5.5%
Directors and Named Executive Officers:		
James S. Burns ⁽⁶⁾	436,606	*
Nancy Cocozza ⁽⁷⁾	92,051	*
Veronica G.H. Jordan ⁽⁸⁾	248,836	*
James T. LaFrance ⁽⁹⁾	624,032	*
David R. Schreiber ⁽¹⁰⁾	156,155	*
Valerie B. Palmieri ⁽¹¹⁾	1,535,594	2.0%
Robert Beechey ⁽¹²⁾	275,000	*
Fred Ferrara ⁽¹³⁾	11,716	*

All Directors and Executive Officers as a Group (7 persons)

3,368,274

4.4%

* Less than 1%

- (1) Based on the information provided in Amendment No. 9 to Schedule 13D filed with the SEC on June 25, 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 18,108,802 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. 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. 9 to Schedule 13D filed with the SEC on June 25, 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 11,148,779 shares of our common stock, the Tanya Eva Schuler Trust had shared voting and dispositive power with respect to 4,162,129 shares of our common stock and the Therese Heidi Schuler Trust had shared voting and dispositive power with respect to 4,162,029 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.
- (3) Based on the information provided in Amendment No. 8 to Schedule 13D filed with the SEC on April 23, 2018 by Larry N. Feinberg with respect to himself, Oracle Associates, LLC (“Oracle Associates”), Oracle Partners, L.P. (“Oracle Partners”), Oracle Investment Management, Inc. (“Investment Management”), Oracle Ten Fund Master, LP (“Ten Fund”) and Oracle Institutional Partners, L.P. (“Institutional Partners”) (Mr. Feinberg, together with Oracle Associates, Oracle Partners, Investment Management, Ten Fund and Institutional Partners, the “Oracle Reporting Persons”). The Oracle Reporting Persons reported that each of Mr. Feinberg, Oracle Associates and Investment Management 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; 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 Management 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 Management. 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 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 Schedule 13G filed with the SEC on March 8, 2019 by Seamark Capital, L.P. with respect to itself, John D. Fraser and David T. Harrington (collectively, the “Seamark Reporting Persons”). The Seamark Reporting Persons reported that Seamark Capital, L.P. had shared voting and dispositive power with respect to 3,461,652 shares of our common stock, John D. Fraser had sole voting and dispositive power over 212,596 shares of our common stock and shared voting and dispositive power over 3,461,652 shares of our common stock, and David T. Harrington had sole voting and dispositive power over 560,000 shares of our common stock and shared voting and dispositive power over 3,461,652 shares of our common stock. John D. Fraser and David T. Harrington are Co-Managing Partners of Seamark Capital, L.P., which is the sole Investment Advisor to the Seamark Fund, L.P., a passive investment partnership vehicle.
- (5) Based on the information provided in Amendment No. 9 to Schedule 13D filed with the SEC on June 25, 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 4,162,129 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.
- (6) Includes 8,712 RSUs, 11,250 common stock warrants and 45,725 shares issuable upon exercise of stock options vesting within 60 days of May 7, 2019.
- (7) Includes 8,854 RSUs and 46,472 shares issuable upon exercise of stock options vesting within 60 days of May 7, 2019.
- (8) Includes 9,422 RSUs, 5,021 common stock warrants and 49,454 shares issuable upon exercise of stock options vesting within 60 days of May 7, 2019.

- (9) Includes 11,363 RSUs, 5,021 common stock warrants and 297,267 shares issuable upon exercise of stock options vesting within 60 days of May 7, 2019.
- (10) Includes 9,375 RSUs vesting within 60 days of May 7, 2019.
- (11) Includes 7,531 common stock warrants and 1,350,000 shares issuable upon exercise of stock options vesting within 60 days of May 7, 2019.
- (12) Includes 75,000 shares issuable upon exercise of stock options vesting within 60 days of May 7, 2019.
- (13) Includes 5,021 common stock warrants.

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 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 concurrent but separate underwritten public offerings of our common stock and our Series B Convertible Preferred Stock (“Convertible Preferred Stock”) that we completed on April 17, 2018 (the “Offerings”), and Jack W. Schuler 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. Eric Varma was designated as a Board nominee by Oracle Partners, LP and Oracle Ten Fund Master, LP pursuant to the Stockholders Agreement and was appointed as a director on September 12, 2013. Dr. Varma did not stand for re-election at the 2018 annual meeting of the stockholders of the Company. 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.

PROPOSAL 3: APPROVAL OF THE VERMILLION, INC. 2019 STOCK INCENTIVE PLAN

At the Annual Meeting, our stockholders will be asked to approve the Vermillion, Inc. 2019 Stock Incentive Plan (the “2019 Plan”). The 2019 Plan was approved by our Board on May 9, 2019, subject to stockholder approval. If the 2019 Plan is adopted by our stockholders, we will continue to be able to make awards of long-term equity incentives, which we believe are critical for attracting, motivating, rewarding and retaining a talented management team who will contribute to our success. If the 2019 Plan is not adopted by our stockholders, the Company will continue to operate the Vermillion, Inc. Second Amended and Restated 2010 Stock Incentive Plan pursuant to its current provisions.

The purposes of the 2019 Plan are to:

- align the interests of our stockholders and recipients of awards under the 2019 Plan by increasing the proprietary interest of such recipients in the Company’s growth and success;
- advance the interests of the Company by attracting and retaining non-employee directors, officers, other employees, consultants, independent contractors and agents; and
- motivate such persons to act in the long-term best interests of the Company and our stockholders.

Under the 2019 Plan, the Company may grant:

- non-qualified stock options;
- “incentive stock options” (within the meaning of Section 422 of the Code);
- stock appreciation rights (“SARs”);
- restricted stock, RSUs or other stock awards (“Stock Awards”); and
- performance awards.

As of May 7, 2019, approximately two officers, 54 employees and 5 non-employee directors would be eligible to participate in the 2019 Plan. Upon approval of the 2019 Plan, no additional awards will be granted under the Vermillion, Inc. Second Amended and Restated 2010 Stock Incentive Plan or any other equity plan maintained by the Company that is outstanding as of the effective date of the 2019 Plan (each, a “*Prior Plan*”).

Plan Highlights

Some of the key features of the 2019 Plan include:

- The 2019 Plan will be administered by a committee of our Board, comprised entirely of independent directors;
- Stock options and SARs granted under the 2019 Plan may not be repriced without stockholder approval other than in connection with a change in control or adjustments described in the 2019 Plan;
- Under the 2019 Plan, the maximum number of shares of our common stock available for awards is 8,000,000 plus the number of available shares of common stock for future grant under the Prior Plan as of the date of on which stockholders approve the 2019 Plan, other than substitute awards granted in connection with a corporate transaction;
- The exercise price of stock options and the base price for SARs granted under the 2019 Plan may not be less than the fair market value of a share of our common stock on the date of grant, subject to certain exceptions for substitute awards granted in connection with a corporate transaction;
- The 2019 Plan prohibits the grant of dividend equivalents with respect to stock options and SARs and subjects all dividends and dividend equivalents paid with respect to Stock Awards or performance awards to the same vesting conditions as the underlying awards;
- The 2019 Plan does not contain a liberal change in control definition; and
- The 2019 Plan provides that the committee may require the reimbursement of all or any portion of any awards granted under the 2019 Plan, or may require the termination, rescission, or the recapture of any award, in the event of certain financial restatements or a violation by the participant of certain restrictive covenants.

Description of the 2019 Plan

The following description is qualified in its entirety by reference to the 2019 Plan, a copy of which is attached to this proxy statement as Exhibit A and incorporated herein by reference.

Administration

The 2019 Plan will be administered by a committee designated by our Board (the “Plan Committee”), consisting of two or more members of our Board, each of whom may be (i) a “non-employee director” within the meaning of Rule 16b-3 under the Exchange Act and (ii) “independent” within the meaning of the rules of the NASDAQ Capital Market or, if our common stock is not listed on the NASDAQ Capital Market, within the meaning of the rules of the principal stock exchange on which our common stock is then traded. It is expected that the Compensation Committee will administer the 2019 Plan.

Subject to the express provisions of the 2019 Plan, the Plan Committee will have the authority to select eligible persons to receive awards and determine all of the terms and conditions of each award. All awards will be evidenced by an agreement containing such provisions not inconsistent with the 2019 Plan as the Plan Committee will approve. The Plan Committee will also have authority to establish rules and regulations for administering the 2019 Plan and to decide questions of interpretation or application of any provision of the 2019 Plan. The Plan Committee may, in its sole discretion and for any reason at any time, take action such that (i) any or all outstanding stock options and SARs will become exercisable in part or in full, (ii) all or a portion of a restriction period on any award will lapse, (iii) all or a portion of any performance period applicable to any award will lapse and (iv) any performance measures applicable to any outstanding award will be deemed satisfied at target, maximum or any other level.

The Plan Committee may delegate some or all of its power and authority under the 2019 Plan to our Board (or any members thereof) or, subject to applicable law, a subcommittee of our Board, a member of our Board, the Chief Executive Officer or other executive officer of the Company as the Plan Committee deems appropriate, except that it may not delegate its power and authority to a member of our Board, the Chief Executive Officer or any executive officer with regard to awards to persons who are subject to Section 16 of the Exchange Act.

Available Shares

Subject to the adjustment provisions set forth in the 2019 Plan, the number of shares of our common stock available for awards under the 2019 Plan is 8,000,000 plus the number of available shares of common stock for future grant under the Prior Plan as of the date of on which stockholders approve the 2019 Plan, other than substitute awards granted in connection with a corporate transaction. All of the available shares of our common stock under the 2019 Plan may be issued in connection with incentive stock options.

The number of available shares will be reduced by the sum of the aggregate number of shares of our common stock which become subject to outstanding stock options, free-standing SARs, Stock Awards and performance awards. To the extent that shares of our common stock subject to an outstanding stock option, free-standing SAR, Stock Award or performance award granted under the 2019 Plan or a Prior Plan, other than substitute awards granted in connection with a corporate transaction, are not issued or delivered by reason of (i) the expiration, termination, cancellation or forfeiture of such award (excluding shares of our common stock subject to a stock option cancelled upon settlement of a related tandem SAR or subject to a tandem SAR cancelled upon exercise of a related option) or (ii) the settlement of such award in cash, then such shares of our common stock will again be available under the 2019 Plan. Shares of our common stock subject to an award under the 2019 Plan or a Prior Plan will not again be available for issuance under the 2019 Plan if such shares are (a) shares that were subject to a stock option or stock-settled SAR and were not issued or delivered upon the net settlement or net exercise of such option or SAR, (b) shares delivered to or withheld by the Company to pay the purchase price or the withholding taxes relating to an outstanding award or (c) shares repurchased by the Company on the open market with the proceeds of a stock option exercise. At the time the 2019 Plan becomes effective, none of the shares of our common stock available for future grant under the Prior Plans shall be available under such Prior Plans or the 2019 Plan.

The aggregate value of cash compensation and the grant date fair value of shares of our common stock that may be awarded or granted during any fiscal year of the Company to any non-employee director shall not exceed \$400,000.

As of May 7, 2019, the closing price of share of our common stock as reported by Nasdaq was \$1.24.

Change in Control

Subject to the terms of the applicable award agreement, in the event of a change in control, our Board, as constituted prior to the change in control, may, in its discretion take one of the following actions: (i) require that (a) some or all outstanding stock options and SARs will become exercisable in full or in part, either immediately or upon a subsequent termination of employment, (b) the restriction period applicable to some or all outstanding Stock Awards will lapse in full or in part, either immediately or upon a subsequent termination of employment, (c) the performance period applicable to some or all outstanding awards will lapse in full or in part, and (d) the performance measures applicable to some or all outstanding awards will be deemed satisfied at the target, maximum or any other level; (ii) require that shares of our common stock resulting from or succeeding to the business of the Company pursuant to such change in control, or the parent thereof, be substituted for some or all of the shares of our common stock subject to outstanding awards as determined by our Board; and/or (iii) require outstanding awards to be surrendered to the Company in exchange for a payment of cash, shares of our common stock resulting from the change in control, or the parent thereof, or a combination of cash and shares.

Under the terms of the 2019 Plan, a change in control is generally defined as a change in ownership or control of the Company effected through any of the following transactions: (i) certain mergers or consolidations of the Company 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 persons who are employees at any time more than one year before a transaction) becomes the beneficial owner (within the meaning of Rule 13d-3 promulgated under the Exchange Act), 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) the sale or disposition of all, or substantially all, of the Company's assets; (iii) certain changes in the majority composition of the Board; or (iv) the consummation of a plan of complete liquidation or dissolution of the Company.

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 2019 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.

Effective Date, Termination and Amendment

If approved by the affirmative vote of a majority of the shares of our common stock present in person or represented by proxy at the annual meeting, the 2019 Plan will become effective as of the date on which the 2019 Plan was approved by our stockholders, and will terminate as of the first annual meeting to occur on or after the tenth anniversary of the effective date, unless earlier terminated by our Board. Awards hereunder may be made at any time prior to the termination of the 2019 Plan, provided that no incentive stock option may be granted later than ten years after the date on which the 2019 Plan was approved by our Board. Our Board may amend the 2019 Plan at any time, subject to stockholder approval if (i) required by applicable law, rule or regulation, including any rule of the NASDAQ Capital Market or any other stock exchange on which our common stock is then traded, or (ii) our Board seeks to modify the non-employee director compensation limit or the prohibition on repricing set forth in the 2019 Plan. No amendment may materially impair the rights of a holder of an outstanding award without the consent of such holder.

Eligibility

Participants in the 2019 Plan will consist of such officers, other employees, non-employee directors, consultants, independent contractors and agents and persons expected to become officers, other employees, non-employee directors, consultants, independent contractors and agents of the Company and its subsidiaries, as selected by the Plan Committee.

Stock Options and SARs

The 2019 Plan provides for the grant of non-qualified stock options, incentive stock options and SARs. The Plan Committee will determine the conditions to the exercisability of each stock option and SAR.

Each stock option will be exercisable for no more than ten years after its date of grant, unless the stock option is an incentive stock option and the optionee owns greater than ten percent (10%) of the voting power of all shares of our capital stock (a “ten percent holder”), in which case the stock option will be exercisable for no more than five years after its date of grant. Except in the case of substitute awards granted in connection with a corporate transaction, the exercise price of a stock option will not be less than 100% of the fair market value of a share of our common stock on the date of grant, unless the stock option is an incentive stock option and the optionee is a ten percent holder, in which case the stock option exercise price will be the price required by the Code, currently 110% of fair market value.

Each SAR will be exercisable for no more than ten years after its date of grant provided that no SAR granted in tandem with a stock option (a “tandem SAR”) will be exercisable later than the expiration, termination, cancellation, forfeiture or other termination of the related stock option. The base price of an SAR will not be less than 100% of the fair market value of a share of our common stock on the date of grant (or, if earlier, the date of grant of the stock option for which the SAR is exchanged or substituted), provided that the base price of a tandem SAR will be the exercise price of the related stock option. An SAR entitles the holder to receive upon exercise (subject to withholding taxes) shares of our common stock (which may be restricted stock), cash or a combination thereof with a value equal to the difference between the fair market value of our common stock on the exercise date and the base price of the SAR.

All of the terms relating to the exercise, cancellation or other disposition of stock options and SARs following the termination of employment of a participant, whether by reason of disability, retirement, death or any other reason, will be determined by the Plan Committee.

The Plan Committee shall not, without the approval of our stockholders, (i) reduce the purchase price or base price of any previously granted stock option or SAR, (ii) cancel any previously granted stock option or SAR in exchange for another stock option or SAR with a lower purchase price or base price or (iii) cancel any previously granted stock option or SAR in exchange for cash or another award if the purchase price of such option or the base price of such SAR exceeds the fair market value of a share of our common stock on the date of such cancellation, in each case, other than in connection with a change in control or the adjustment provisions set forth in the 2019 Plan.

Stock Awards

The 2019 Plan provides for the grant of Stock Awards. The Plan Committee may grant a Stock Award as restricted stock, RSUs or as another stock award. Except as otherwise determined by the Plan Committee, Stock Awards will be non-transferable and subject to forfeiture if the holder does not remain continuously in the employment of the Company during the restriction period or if specified performance measures (if any) are not attained during the performance period.

Unless otherwise set forth in a restricted stock award agreement, the holder of shares of restricted stock will have rights as a stockholder of the Company, including the right to vote and receive, on a deferred basis, dividends with respect to the shares of restricted stock. Distributions and dividends with respect to shares of our common stock, including regular cash dividends, will be deposited with the Company and will be subject to the same restrictions as the restricted stock.

The agreement awarding RSUs will specify (i) whether such award may be settled in shares of our common stock, cash or a combination thereof, and (ii) whether the holder will be entitled to receive dividend equivalents, with respect to such award. Any dividend equivalents with respect to RSUs that are subject to vesting conditions will be subject to the same vesting conditions as the underlying award. Prior to settlement of an RSU, the holder of an RSU will have no rights as a stockholder of the Company.

The Plan Committee may grant other awards that may be denominated or payable in, valued in whole or in part by reference to, or otherwise based on, or related to, shares of our common stock, including shares of our common stock granted as a bonus and not subject to any vesting conditions, dividend equivalents, deferred stock units, stock purchase rights and shares of our common stock issued in lieu of obligations of the Company to pay cash under any compensatory plan or arrangement, subject to such terms as shall be determined by the Plan Committee. Dividend equivalents paid with respect to the other stock awards contemplated by this paragraph will be subject to the same vesting conditions as the underlying awards.

All of the terms relating to the satisfaction of performance measures and the termination of a restriction period, or the forfeiture and cancellation of a Stock Award upon a termination of employment, whether by reason of disability, retirement, death or any other reason or during a paid or unpaid leave of absence, will be determined by the Plan Committee.

Performance Awards

The 2019 Plan also provides for the grant of performance awards. The agreement relating to a performance award will specify whether such award may be settled in shares of our common stock (including shares of restricted stock), cash or a combination thereof. The agreement relating to a performance award will provide, in the manner determined by the Plan Committee, for the vesting of such performance award if the specified performance measures are satisfied or met during the specified performance period and such performance goals will be determined by the Plan Committee at the time of grant. Any dividend or dividend equivalents with respect to a performance award will be subject to the same restrictions as such performance award.

The performance measures of a performance award may consist of, but shall not be limited to, one or more of the following business criteria for the Company, on a consolidated basis, and/or for specified subsidiaries, business or geographical units or operating areas of the Company (except with respect to the total stockholder return and earnings per share criteria) or individual basis, may be used by the Committee in establishing performance measures under this Plan: earnings per share; sales or revenue; earnings or income of the Company before or after taxes and/or interest; earnings before interest, taxes, depreciation and amortization; net income; returns on equity, assets, capital, investments, or revenue; economic value added; working capital; total stockholder return; the attainment by a share of common stock of a specified fair market value for a specified period of time; expenses; cost reduction goals; cash flow; gross profit or gross margin; operating profit or margin; strategic goals relating to 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, or such other goals as the Committee may determine whether or not listed in the 2019 Plan. Each such goal may be determined on a pre-tax or post-tax basis or on an absolute or relative basis, and may include comparisons based on current internal targets, the past performance of the Company (including the performance of one or more subsidiaries, divisions, or operating units) or the past or current performance of other companies or market indices (or a combination of such past and current performance). In addition to the ratios specifically enumerated above, performance goals may include comparisons relating to capital (including, but not limited to, the cost of capital), stockholders’ equity, shares outstanding, assets or net assets, sales, or any combination thereof. In establishing a performance measure or determining the achievement of a performance measure, the Committee may provide that achievement of the applicable performance measures may be amended or adjusted to include or exclude components of any performance measure, including, without limitation, foreign exchange gains and losses, asset write-downs, acquisitions and divestitures, change in fiscal year, unbudgeted capital expenditures, special charges such as restructuring or impairment charges, debt refinancing costs, extraordinary or noncash items, unusual, infrequently occurring, nonrecurring or one-time events affecting the Company or its financial statements or changes in law or accounting principles. Performance measures shall be subject to such other special rules and conditions as the Committee may establish at any time.

Prior to the settlement of a performance award in shares of our common stock, the holder of such award will have no rights as a stockholder of the Company with respect to such shares. All of the terms relating to the satisfaction of performance measures and the termination of a performance period, or the forfeiture and cancellation of a performance award upon a termination of employment with or service to, whether by reason of disability, retirement, death or any other reason or during a paid or unpaid leave of absence, will be determined by the Plan Committee.

U.S. Federal Income Tax Consequences

The following is a brief summary of certain United States federal income tax consequences generally arising with respect to awards under the 2019 Plan. This discussion does not address all aspects of the United States federal income tax consequences of participating in the 2019 Plan that may be relevant to participants in light of their personal investment or tax circumstances and does not discuss any state, local or non-United States tax consequences of participating in the 2019 Plan. Each participant is advised to consult his or her personal tax advisor concerning the application of the United States federal income tax laws to such participant's particular situation, as well as the applicability and effect of any state, local or non-United States tax laws before taking any actions with respect to any awards.

Section 162(m) of the Code

Section 162(m) of the Code limits to \$1 million the amount that a publicly held corporation is allowed each year to deduct for compensation paid to the corporation's "covered employees." "Covered employees" include the corporation's chief executive officer, chief financial officer and the three next most highly compensated executive officers. If an individual is determined to be a covered employee for any year beginning after December 31, 2016, then that individual will continue to be a covered employee for future years, regardless of changes in the individual's compensation or position.

Stock Options

A participant will not recognize taxable income at the time a stock option is granted, and the Company will not be entitled to a tax deduction at that time. A participant will recognize compensation taxable as ordinary income (and if the participant is an employee, will be subject to income tax withholding) upon exercise of a non-qualified stock option equal to the excess of the fair market value of the shares of our common stock purchased on such date over the exercise price paid for such shares, and the Company will be entitled to a corresponding deduction, except to the extent the deduction limits of Section 162(m) of the Code apply. A participant will not recognize income (except for purposes of the alternative minimum tax) upon exercise of an incentive stock option. If the shares of our common stock acquired by exercise of an incentive stock option are held for at least two years from the date the stock option was granted and one year from the date it was exercised, any gain or loss arising from a subsequent disposition of those shares will be taxed as long-term capital gain or loss, and the Company will not be entitled to any deduction. If, however, those shares are disposed of within the above-described period, then in the year of that disposition the participant will recognize compensation taxable as ordinary income equal to the excess of the lesser of (i) the amount realized upon that disposition and (ii) the fair market value of those shares on the date of exercise over the exercise price, and the Company will be entitled to a corresponding deduction, except to the extent the deduction limits of Section 162(m) of the Code apply.

SARs

A participant will not recognize taxable income at the time SARs are granted, and the Company will not be entitled to a tax deduction at that time. Upon exercise, the participant will recognize compensation taxable as ordinary income (and if the participant is an employee, will be subject to income tax withholding) in an amount equal to the fair market value of any shares of our common stock delivered and the amount of cash paid by the Company. This amount is deductible by the Company as compensation expense, except to the extent the deduction limits of Section 162(m) of the Code apply.

Stock Awards

A participant will not recognize taxable income at the time restricted stock (*i.e.*, stock that is subject to a substantial risk of forfeiture) is granted, and the Company will not be entitled to a tax deduction at that time, unless the participant makes an election to be taxed at that time. If such election is made, the participant will recognize compensation taxable as ordinary income (and if the participant is an employee, will be subject to income tax withholding) at the time of the grant in an amount equal to the excess of the fair market value of the shares of our common stock at such time over the amount, if any, paid for those shares. If such election is not made, the participant will recognize compensation taxable as ordinary income (and if the participant is an employee, will be subject to income tax withholding) at the time the restrictions constituting a substantial risk of forfeiture lapse in an amount equal to the excess of the fair market value of the shares of our common stock at such time over the amount, if any, paid for those shares. The amount of ordinary income recognized by making the above-described election or

upon the lapse of restrictions constituting a substantial risk of forfeiture is deductible by the Company as compensation expense, except to the extent the deduction limits of Section 162(m) of the Code apply.

A participant will not recognize taxable income at the time an RSU is granted and the Company will not be entitled to a tax deduction at that time. Upon settlement of RSUs, the participant will recognize compensation taxable as ordinary income (and if the participant is an employee, will be subject to income tax withholding) in an amount equal to the fair market value of any shares of our common stock delivered and the amount of any cash paid by the Company. The amount of ordinary income recognized is deductible by the Company as compensation expense, except to the extent the deduction limits of Section 162(m) of the Code apply.

The tax treatment, including the timing of taxation, of other stock awards will depend on the terms of such awards at the time of grant.

Performance Awards

A participant will not recognize taxable income at the time performance awards are granted, and the Company will not be entitled to a tax deduction at that time. Upon settlement of performance awards, the participant will recognize compensation taxable as ordinary income (and if the participant is an employee, will be subject to income tax withholding) in an amount equal to the fair market value of any shares of our common stock delivered and the amount of cash paid by the Company. This amount is deductible by the Company as compensation expense, except to the extent the deduction limits of Section 162(m) of the Code apply.

New Plan Benefits

The Plan Committee has the discretion to grant awards under the 2019 Plan and, therefore, it is not possible as of the date of this proxy statement to determine future awards that will be received by the Named Executive Officers or others under the 2019 Plan. Please see the section entitled “Compensation Discussion and Analysis” for grants made to each of the Named Executive Officers under the Prior Plan during 2018.

As discussed above, the 2019 Plan is being submitted for approval by our stockholders at the Annual Meeting. If our stockholders approve this proposal, the 2019 Plan will become effective as of the date on which the 2019 Plan was approved by stockholders, and awards may be granted under the 2019 Plan. If our stockholders do not approve the 2019 Plan, it (and any awards thereunder) will not become effective, and the Company will continue to grant awards under the Prior Plan.

**THE BOARD OF DIRECTORS UNANIMOUSLY RECOMMENDS THAT YOU VOTE “FOR”
THE APPROVAL OF THE VERMILLION, INC. 2019 STOCK INCENTIVE PLAN.**

Equity Compensation Plan Information

The 2010 Plan is an equity-based compensation plan that was approved by our stockholders and 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 12,122,983 shares of Vermillion’s common stock under the 2010 Plan, subject to adjustment as provided in the 2010 Plan. At December 31, 2018, options to purchase 4,612,005 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, 2018, were as follows:

<u>Plan Category</u>	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	4,612,005	\$ 1.67	5,178,819
Equity compensation plans not approved by security holders	-	-	-
Total	4,612,005		5,178,819

PROPOSAL 4: 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, 2019, 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 2018 and 2017.

	2018	2017
Audit fees	\$ 224,131	\$ 204,645
Audit-related fees	—	—
Tax fees	28,665 ⁽¹⁾	22,720 ⁽¹⁾
All other fees	—	—
Total	\$ 252,796	\$ 227,365

(1) Represent fees for the preparation of our 2017 and 2016 federal and state tax returns.

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 the Chair of the Audit Committee for review and approval. Any requests that are approved by the Chair of the Audit Committee 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.

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, 2019.

REPORT OF THE AUDIT COMMITTEE¹

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, 2018 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, 2018. 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, 2018 for filing with the SEC.

Respectfully Submitted by:

Members of the Audit Committee

David R. Schreiber, Chairperson

Nancy G. Cocozza

Veronica G.H. Jordan, Ph.D.

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, 2018 with the SEC on March 28, 2019, as was amended by the Form 10-K/A we filed with the SEC on April 29, 2019 (the “Annual Report”). Stockholders may obtain a copy of the Annual 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

/s/ Valerie B. Palmieri

Valerie B. Palmieri

President, Chief Executive Officer and Director

Austin, Texas
May 9, 2019

VERMILLION, INC.

2019 STOCK INCENTIVE PLAN

Plan Document

VERMILLION, INC.

2019 STOCK INCENTIVE PLAN

I. INTRODUCTION

1.1 Purposes. The purposes of the Vermillion, Inc. 2019 Stock Incentive Plan (this “Plan”) are (i) to align the interests of the Company’s stockholders and the recipients of awards under this Plan by increasing the proprietary interest of such recipients in the Company’s growth and success, (ii) to advance the interests of the Company by attracting and retaining Non-Employee Directors, officers, other employees, consultants, independent contractors and agents and (iii) to motivate such persons to act in the long-term best interests of the Company and its stockholders.

1.2 Certain Definitions.

“Agreement” shall mean the written or electronic agreement evidencing an award hereunder between the Company and the recipient of such award.

“Board” shall mean the Board of Directors of the Company.

“Change in Control” shall have the meaning set forth in Section 5.8(b).

“Code” shall mean the Internal Revenue Code of 1986, as amended.

“Conditions” shall have the meaning set forth in Section 5.13.

“Committee” shall mean the Compensation Committee of the Board, or a subcommittee thereof, or such other committee designated by the Board, in each case, consisting of two or more members of the Board, each of whom is intended to be (i) a “Non-Employee Director” within the meaning of Rule 16b-3 under the Exchange Act and (ii) “independent” within the meaning of the rules of The NASDAQ Stock Market or, if the Common Stock is not listed on The NASDAQ Stock Market, within the meaning of the rules of the principal stock exchange on which the Common Stock is then traded.

“Common Stock” shall mean the common stock, par value \$0.001 per share, of the Company, and all rights appurtenant thereto.

“Company” shall mean Vermillion, Inc., a corporation organized under the laws of the State of Delaware, or any successor thereto.

“Effective Date” shall have the meaning set forth in Section 5.1.

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

“Fair Market Value” shall mean the closing transaction price of a share of Common Stock as reported on The NASDAQ Stock Market on the date as of which such value is being determined or, if the Common Stock is not listed on The NASDAQ Stock Market, the closing transaction price of a share of Common Stock on the principal national stock exchange on which the Common Stock is traded on the date as of which such value is being determined or, if there shall be no reported transactions for such date, on the next preceding date for which transactions were reported; provided, however, that if the Common Stock is not listed on a national stock exchange or if Fair Market Value for any date cannot be so determined, Fair Market Value shall be determined by the Committee by whatever means or method as the Committee, in the good faith exercise of its discretion, shall at such time deem appropriate and in compliance with Section 409A of the Code.

“Free-Standing SAR” shall mean an SAR which is not granted in tandem with, or by reference to, an option, which entitles the holder thereof to receive, upon exercise, shares of Common Stock (which may be Restricted Stock) or, to the extent set forth in the applicable Agreement, cash or a combination thereof, with an aggregate value equal to the excess of the Fair Market Value of one share of Common Stock on the date of exercise over the base price of such SAR, multiplied by the number of such SARs which are exercised.

“Government Agencies” shall have the meaning set forth in Section 5.13.

“Incentive Stock Option” shall mean an option to purchase shares of Common Stock that meets the requirements of Section 422 of the Code, or any successor provision, which is intended by the Committee to constitute an Incentive Stock Option.

“Non-Employee Director” shall mean any director of the Company who is not an officer or employee of the Company or any Subsidiary.

“Nonqualified Stock Option” shall mean an option to purchase shares of Common Stock which is not an Incentive Stock Option.

“Other Stock Award” shall mean an award granted pursuant to Section 3.4 of the Plan.

“Performance Award” shall mean a right to receive an amount of cash, Common Stock, or a combination of both, contingent upon the attainment of specified Performance Measures within a specified Performance Period.

“Performance Measures” shall mean the criteria and objectives, established by the Committee, which shall be satisfied or met (i) as a condition to the grant or exercisability of all or a portion of an option or SAR or (ii) during the applicable Restriction Period or Performance Period as a condition to the vesting of the holder’s interest, in the case of a Restricted Stock Award, of the shares of Common Stock subject to such award, or, in the case of a Restricted Stock Unit Award, Other Stock Award or Performance Award, to the holder’s receipt of the shares of Common Stock subject to such award or of payment with respect to such award. One or more of the following business criteria for the Company, on a consolidated basis, and/or for specified subsidiaries, business or geographical units or operating areas of the Company (except with respect to the total shareholder return and earnings per share criteria) or individual basis, may be used by the Committee in establishing Performance Measures under this Plan: earnings per share; sales or revenue; earnings or income of the Company before or after taxes and/or interest; earnings before interest, taxes, depreciation and amortization; net income; returns on equity, assets, capital, investments, or revenue; economic value added; working capital; total stockholder return; the attainment by a share of Common Stock of a specified Fair Market Value for a specified period of time; expenses; cost reduction goals; cash flow; gross profit or gross margin; operating profit or margin; strategic goals relating to 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, or such other goals as the Committee may determine whether or not listed herein. Each such goal may be determined on a pre-tax or post-tax basis or on an absolute or relative basis, and may include comparisons based on current internal targets, the past performance of the Company (including the performance of one or more subsidiaries, divisions, or operating units) or the past or current performance of other companies or market indices (or a combination of such past and current performance). In addition to the ratios specifically enumerated above, performance goals may include comparisons relating to capital (including, but not limited to, the cost of capital), shareholders’ equity, shares outstanding, assets or net assets, sales, or any combination thereof. In establishing a Performance Measure or determining the achievement of a Performance Measure, the Committee may provide that achievement of the applicable Performance Measures may be amended or adjusted to include or exclude components of any Performance Measure, including, without limitation, foreign exchange gains and losses, asset write-downs, acquisitions and divestitures, change in fiscal year, unbudgeted capital expenditures, special charges such as restructuring or impairment charges, debt refinancing costs, extraordinary or noncash items, unusual, infrequently occurring, nonrecurring or one-time events affecting the Company or its financial statements or changes in law or accounting principles. Performance Measures shall be subject to such other special rules and conditions as the Committee may establish at any time.

“Performance Period” shall mean any period designated by the Committee during which (i) the Performance Measures applicable to an award shall be measured and (ii) the conditions to vesting applicable to an award shall remain in effect.

“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.

“Prior Plan” shall mean the Vermillion, Inc. Second Amended and Restated 2010 Stock Incentive Plan and each other equity plan maintained by the Company under which awards are outstanding as of the effective date of this Plan.

“Recapture” shall have the meaning set forth in Section 5.13.

“Reimbursement” shall have the meaning set forth in Section 5.14.

“Rescission” shall have the meaning set forth in Section 5.13.

“Restricted Stock” shall mean shares of Common Stock which are subject to a Restriction Period and which may, in addition thereto, be subject to the attainment of specified Performance Measures within a specified Performance Period.

“Restricted Stock Award” shall mean an award of Restricted Stock under this Plan.

“Restricted Stock Unit” shall mean a right to receive one share of Common Stock or, in lieu thereof and to the extent set forth in the applicable Agreement, the Fair Market Value of such share of Common Stock in cash, which shall be contingent upon

the expiration of a specified Restriction Period and which may, in addition thereto, be contingent upon the attainment of specified Performance Measures within a specified Performance Period.

“Restricted Stock Unit Award” shall mean an award of Restricted Stock Units under this Plan.

“Restriction Period” shall mean any period designated by the Committee during which (i) the Common Stock subject to a Restricted Stock Award may not be sold, transferred, assigned, pledged, hypothecated or otherwise encumbered or disposed of, except as provided in this Plan or the Agreement relating to such award, or (ii) the conditions to vesting applicable to a Restricted Stock Unit Award or Other Stock Award shall remain in effect.

“SAR” shall mean a stock appreciation right which may be a Free-Standing SAR or a Tandem SAR.

“Stock Award” shall mean a Restricted Stock Award, Restricted Stock Unit Award or Other Stock Award.

“Subsidiary” shall mean any corporation, limited liability company, partnership, joint venture or similar entity in which the Company owns, directly or indirectly, an equity interest possessing more than 50% of the combined voting power of the total outstanding equity interests of such entity.

“Substitute Award” shall mean an award granted under this Plan upon the assumption of, or in substitution for, outstanding equity awards previously granted by a company or other entity in connection with a corporate transaction, including a merger, combination, consolidation or acquisition of property or stock; provided, however, that in no event shall the term “Substitute Award” be construed to refer to an award made in connection with the cancellation and repricing of an option or SAR.

“Tandem SAR” shall mean an SAR which is granted in tandem with, or by reference to, an option (including a Nonqualified Stock Option granted prior to the date of grant of the SAR), which entitles the holder thereof to receive, upon exercise of such SAR and surrender for cancellation of all or a portion of such option, shares of Common Stock (which may be Restricted Stock) or, to the extent set forth in the applicable Agreement, cash or a combination thereof, with an aggregate value equal to the excess of the Fair Market Value of one share of Common Stock on the date of exercise over the base price of such SAR, multiplied by the number of shares of Common Stock subject to such option, or portion thereof, which is surrendered.

“Tax Date” shall have the meaning set forth in Section 5.5.

“Ten Percent Holder” shall have the meaning set forth in Section 2.1(a).

“Termination” shall have the meaning set forth in Section 5.13.

1.3 Administration. This Plan shall be administered by the Committee. Any one or a combination of the following awards may be made under this Plan to eligible persons: (i) options to purchase shares of Common Stock in the form of Incentive Stock Options or Nonqualified Stock Options; (ii) SARs in the form of Tandem SARs or Free-Standing SARs; (iii) Stock Awards in the form of Restricted Stock, Restricted Stock Units or Other Stock Awards; and (iv) Performance Awards. The Committee shall, subject to the terms of this Plan, select eligible persons for participation in this Plan and determine the form, amount and timing of each award to such persons and, if applicable, the number of shares of Common Stock subject to an award, the number of SARs, the number of Restricted Stock Units, the dollar value subject to a Performance Award, the purchase price or base price associated with the award, the time and conditions of exercise or settlement of the award and all other terms and conditions of the award, including, without limitation, the form of the Agreement evidencing the award. The Committee may, in its sole discretion and for any reason at any time, take action such that (i) any or all outstanding options and SARs shall become exercisable in part or in full, (ii) all or a portion of the Restriction Period applicable to any outstanding awards shall lapse, (iii) all or a portion of the Performance Period applicable to any outstanding awards shall lapse and (iv) the Performance Measures (if any) applicable to any outstanding awards shall be deemed to be satisfied at the target, maximum or any other level. The Committee shall, subject to the terms of this Plan, interpret this Plan and the application thereof, establish rules and regulations it deems necessary or desirable for the administration of this Plan and may impose, incidental to the grant of an award, conditions with respect to the award, such as limiting competitive employment or other activities. All such interpretations, rules, regulations and conditions shall be conclusive and binding on all parties.

The Committee may delegate some or all of its power and authority hereunder to the Board (or any members thereof) or, subject to applicable law, to a subcommittee of the Board, a member of the Board, the Chief Executive Officer or other executive officer of the Company as the Committee deems appropriate; provided, however, that the Committee may not delegate its power and authority to a member of the Board, the Chief Executive Officer or other executive officer of the Company with regard to the selection for participation in this Plan of an officer, director or other person subject to Section 16 of the Exchange Act or decisions concerning the timing, pricing or amount of an award to such an officer, director or other person.

No member of the Board or Committee, and neither the Chief Executive Officer nor any other executive officer to whom the Committee delegates any of its power and authority hereunder, shall be liable for any act, omission, interpretation, construction or determination made in connection with this Plan in good faith, and the members of the Board and the Committee and the Chief Executive Officer or other executive officer shall be entitled to indemnification and reimbursement by the Company in respect of any claim, loss, damage or expense (including attorneys’ fees) arising therefrom to the full extent permitted by law (except as otherwise

may be provided in the Company's Certificate of Incorporation and/or By-laws) and under any directors' and officers' liability insurance that may be in effect from time to time.

1.4 Eligibility. Participants in this Plan shall consist of such officers, other employees, Non-Employee Directors, consultants, independent contractors, agents, and persons expected to become officers, other employees, Non-Employee Directors, consultants, independent contractors and agents of the Company and its Subsidiaries as the Committee in its sole discretion may select from time to time. The Committee's selection of a person to participate in this Plan at any time shall not require the Committee to select such person to participate in this Plan at any other time. Except as otherwise provided for in an Agreement, for purposes of this Plan, references to employment by the Company shall also mean employment by a Subsidiary, and references to employment shall include service as a Non-Employee Director, consultant, independent contractor or agent. The Committee shall determine, in its sole discretion, the extent to which a participant shall be considered employed during an approved leave of absence. The aggregate value of cash compensation and the grant date fair value of shares of Common Stock that may be awarded or granted during any fiscal year of the Company to any Non-Employee Director shall not exceed \$400,000.

1.5 Shares Available. Subject to adjustment as provided in Section 5.7 and to all other limits set forth in this Plan, 8,000,000 shares of Common Stock plus the number of shares of Common Stock available for grant under the Prior Plan as of the Effective Date shall initially be available for all awards under this Plan, other than Substitute Awards. Subject to adjustment as provided in Section 5.7, no more than 8,000,000 shares of Common Stock in the aggregate may be issued under the Plan in connection with Incentive Stock Options. The number of shares of Common Stock that remain available for future grants under the Plan shall be reduced by the sum of the aggregate number of shares of Common Stock which become subject to outstanding options, outstanding Free-Standing SARs, outstanding Stock Awards and outstanding Performance Awards denominated in shares of Common Stock.

To the extent that shares of Common Stock subject to an outstanding option, SAR, Stock Award or Performance Award granted under the Plan or a Prior Plan, other than Substitute Awards, are not issued or delivered by reason of (i) the expiration, termination, cancellation or forfeiture of such award (excluding shares subject to an option cancelled upon settlement in shares of a related Tandem SAR or shares subject to a Tandem SAR cancelled upon exercise of a related option) or (ii) the settlement of such award in cash, then such shares of Common Stock shall again be available under this Plan; provided, however, that shares of Common Stock subject to an award under this Plan or a Prior Plan shall not again be available for issuance under this Plan if such shares are (x) shares that were subject to an option or stock-settled SAR and were not issued or delivered upon the net settlement or net exercise of such option or SAR, (y) shares delivered to or withheld by the Company to pay the purchase price or the withholding taxes related to an outstanding award or (z) shares repurchased by the Company on the open market with the proceeds of an option exercise. At the time this Plan becomes effective, none of the shares of Common Stock available for future grant under the Prior Plan shall be available for grant under such Prior Plan or this Plan.

The number of shares of Common Stock available for awards under this Plan shall not be reduced by (i) the number of shares of Common Stock subject to Substitute Awards or (ii) available shares under a stockholder approved plan of a company or other entity which was a party to a corporate transaction with the Company (as appropriately adjusted to reflect such corporate transaction) which become subject to awards granted under this Plan (subject to applicable stock exchange requirements).

Shares of Common Stock to be delivered under this Plan shall be made available from authorized and unissued shares of Common Stock, or authorized and issued shares of Common Stock reacquired and held as treasury shares or otherwise or a combination thereof.

II. STOCK OPTIONS AND STOCK APPRECIATION RIGHTS

2.1 Stock Options. The Committee may, in its discretion, grant options to purchase shares of Common Stock to such eligible persons as may be selected by the Committee. Each option, or portion thereof, that is not an Incentive Stock Option, shall be a Nonqualified Stock Option. To the extent that the aggregate Fair Market Value (determined as of the date of grant) of shares of Common Stock with respect to which options designated as Incentive Stock Options are exercisable for the first time by a participant during any calendar year (under this Plan or any other plan of the Company, or any parent or Subsidiary) exceeds the amount (currently \$100,000) established by the Code, such options shall constitute Nonqualified Stock Options.

Options shall be subject to the following terms and conditions and shall contain such additional terms and conditions, not inconsistent with the terms of this Plan, as the Committee shall deem advisable:

(a) Number of Shares and Purchase Price. The number of shares of Common Stock subject to an option and the purchase price per share of Common Stock purchasable upon exercise of the option shall be determined by the Committee; provided, however, that the purchase price per share of Common Stock purchasable upon exercise of an option shall not be less than 100% of the Fair Market Value of a share of Common Stock on the date of grant of such option; provided further, that if an Incentive Stock Option shall be granted to any person who, at the time such option is granted, owns capital stock possessing more than 10 percent of the total combined voting power of all classes of capital stock of the Company (or of any parent or Subsidiary) (a "Ten Percent

Holder”), the purchase price per share of Common Stock shall not be less than the price (currently 110% of Fair Market Value) required by the Code in order to constitute an Incentive Stock Option.

Notwithstanding the foregoing, in the case of an option that is a Substitute Award, the purchase price per share of the shares subject to such option may be less than 100% of the Fair Market Value per share on the date of grant, provided, that the excess of: (a) the aggregate Fair Market Value (as of the date such Substitute Award is granted) of the shares subject to the Substitute Award, over (b) the aggregate purchase price thereof does not exceed the excess of: (x) the aggregate fair market value (as of the time immediately preceding the transaction giving rise to the Substitute Award, such fair market value to be determined by the Committee) of the shares of the predecessor company or other entity that were subject to the grant assumed or substituted for by the Company, over (y) the aggregate purchase price of such shares.

(b) Option Period and Exercisability. The period during which an option may be exercised shall be determined by the Committee; provided, however, that no option shall be exercised later than ten years after its date of grant; provided further, that if an Incentive Stock Option shall be granted to a Ten Percent Holder, such option shall not be exercised later than five years after its date of grant. The Committee may, in its discretion, establish Performance Measures which shall be satisfied or met as a condition to the grant of an option or to the exercisability of all or a portion of an option. The Committee shall determine whether an option shall become exercisable in cumulative or non-cumulative installments and in part or in full at any time. An exercisable option, or portion thereof, may be exercised only with respect to whole shares of Common Stock.

(c) Method of Exercise. An option may be exercised (i) by giving written notice to the Company specifying the number of whole shares of Common Stock to be purchased and accompanying such notice with payment therefor in full (or arrangement made for such payment to the Company’s satisfaction) either (A) in cash, (B) by delivery (either actual delivery or by attestation procedures established by the Company) of shares of Common Stock having a Fair Market Value, determined as of the date of exercise, equal to the aggregate purchase price payable by reason of such exercise, (C) authorizing the Company to withhold whole shares of Common Stock which would otherwise be delivered having an aggregate Fair Market Value, determined as of the date of exercise, equal to the amount necessary to satisfy such obligation, (D) in cash by a broker-dealer acceptable to the Company to whom the participant has submitted an irrevocable notice of exercise or (E) a combination of (A), (B) and (C), in each case to the extent set forth in the Agreement relating to the option, (ii) if applicable, by surrendering to the Company any Tandem SARs which are cancelled by reason of the exercise of the option and (iii) by executing such documents as the Company may reasonably request. Any fraction of a share of Common Stock which would be required to pay such purchase price shall be disregarded and the remaining amount due shall be paid in cash by the participant. No shares of Common Stock shall be issued and no certificate representing Common Stock shall be delivered until the full purchase price therefor and any withholding taxes thereon, as described in Section 5.5, have been paid (or arrangement made for such payment to the Company’s satisfaction).

2.2 Stock Appreciation Rights. The Committee may, in its discretion, grant SARs to such eligible persons as may be selected by the Committee. The Agreement relating to an SAR shall specify whether the SAR is a Tandem SAR or a Free-Standing SAR.

SARs shall be subject to the following terms and conditions and shall contain such additional terms and conditions, not inconsistent with the terms of this Plan, as the Committee shall deem advisable:

(a) Number of SARs and Base Price. The number of SARs subject to an award shall be determined by the Committee. Any Tandem SAR related to an Incentive Stock Option shall be granted at the same time that such Incentive Stock Option is granted. The base price of a Tandem SAR shall be the purchase price per share of Common Stock of the related option. The base price of a Free-Standing SAR shall be determined by the Committee; provided, however, that such base price shall not be less than 100% of the Fair Market Value of a share of Common Stock on the date of grant of such SAR (or, if earlier, the date of grant of the option for which the SAR is exchanged or substituted).

Notwithstanding the foregoing, in the case of an SAR that is a Substitute Award, the base price per share of the shares subject to such SAR may be less than 100% of the Fair Market Value per share on the date of grant, provided, that the excess of: (a) the aggregate Fair Market Value (as of the date such Substitute Award is granted) of the shares subject to the Substitute Award, over (b) the aggregate base price thereof does not exceed the excess of: (x) the aggregate fair market value (as of the time immediately preceding the transaction giving rise to the Substitute Award, such fair market value to be determined by the Committee) of the shares of the predecessor company or other entity that were subject to the grant assumed or substituted for by the Company, over (y) the aggregate base price of such shares.

(b) Exercise Period and Exercisability. The period for the exercise of an SAR shall be determined by the Committee; provided, however, that (i) no Tandem SAR shall be exercised later than the expiration, cancellation, forfeiture or other termination of the related option and (ii) no Free-Standing SAR shall be exercised later than ten years after its date of grant. The Committee may, in its discretion, establish Performance Measures which shall be satisfied or met as a condition to the grant of an SAR or to the exercisability of all or a portion of an SAR. The Committee shall determine whether an SAR may be exercised in cumulative or non-cumulative installments and in part or in full at any time. An exercisable SAR, or portion thereof, may be exercised, in the case of a Tandem SAR, only with respect to whole shares of Common Stock and, in the case of a Free-Standing SAR, only with respect

to a whole number of SARs. If an SAR is exercised for shares of Restricted Stock, a certificate or certificates representing such Restricted Stock shall be issued in accordance with Section 3.2(c), or such shares shall be transferred to the holder in book entry form with restrictions on the shares duly noted, and the holder of such Restricted Stock shall have such rights of a stockholder of the Company as determined pursuant to Section 3.2(d). Prior to the exercise of a stock-settled SAR, the holder of such SAR shall have no rights as a stockholder of the Company with respect to the shares of Common Stock subject to such SAR.

(c) Method of Exercise. A Tandem SAR may be exercised (i) by giving written notice to the Company specifying the number of whole SARs which are being exercised, (ii) by surrendering to the Company any options which are cancelled by reason of the exercise of the Tandem SAR and (iii) by executing such documents as the Company may reasonably request. A Free-Standing SAR may be exercised (A) by giving written notice to the Company specifying the whole number of SARs which are being exercised and (B) by executing such documents as the Company may reasonably request. No shares of Common Stock shall be issued and no certificate representing Common Stock shall be delivered until any withholding taxes thereon, as described in Section 5.5, have been paid (or arrangement made for such payment to the Company's satisfaction).

2.3 Termination of Employment or Service. All of the terms relating to the exercise, cancellation or other disposition of an option or SAR (i) upon a termination of employment with or service to the Company of the holder of such option or SAR, as the case may be, whether by reason of disability, retirement, death or any other reason, or (ii) during a paid or unpaid leave of absence, shall be determined by the Committee and set forth in the applicable award Agreement.

2.4 No Repricing. The Committee shall not, without the approval of the stockholders of the Company, (i) reduce the purchase price or base price of any previously granted option or SAR, (ii) cancel any previously granted option or SAR in exchange for another option or SAR with a lower purchase price or base price or (iii) cancel any previously granted option or SAR in exchange for cash or another award if the purchase price of such option or the base price of such SAR exceeds the Fair Market Value of a share of Common Stock on the date of such cancellation, in each case, other than in connection with a Change in Control or the adjustment provisions set forth in Section 5.7.

2.5 No Dividend Equivalents. Notwithstanding anything in an Agreement to the contrary, the holder of an option or SAR shall not be entitled to receive dividend equivalents with respect to the number of shares of Common Stock subject to such option or SAR.

III. STOCK AWARDS

3.1 Stock Awards. The Committee may, in its discretion, grant Stock Awards to such eligible persons as may be selected by the Committee. The Agreement relating to a Stock Award shall specify whether the Stock Award is a Restricted Stock Award, a Restricted Stock Unit Award or, in the case of an Other Stock Award, the type of award being granted.

3.2 Terms of Restricted Stock Awards. Restricted Stock Awards shall be subject to the following terms and conditions and shall contain such additional terms and conditions, not inconsistent with the terms of this Plan, as the Committee shall deem advisable.

(a) Number of Shares and Other Terms. The number of shares of Common Stock subject to a Restricted Stock Award and the Restriction Period, Performance Period (if any) and Performance Measures (if any) applicable to a Restricted Stock Award shall be determined by the Committee.

(b) Vesting and Forfeiture. The Agreement relating to a Restricted Stock Award shall provide, in the manner determined by the Committee, in its discretion, and subject to the provisions of this Plan, for the vesting of the shares of Common Stock subject to such award (i) if the holder of such award remains continuously in the employment of the Company during the specified Restriction Period or (ii) if specified Performance Measures (if any) are satisfied or met during a specified Performance Period, and for the forfeiture of the shares of Common Stock subject to such award (x) if the holder of such award does not remain continuously in the employment of the Company during the specified Restriction Period or (y) if specified Performance Measures (if any) are not satisfied or met during a specified Performance Period.

(c) Stock Issuance. During the Restriction Period, the shares of Restricted Stock shall be held by a custodian in book entry form with restrictions on such shares duly noted or, alternatively, a certificate or certificates representing a Restricted Stock Award shall be registered in the holder's name and may bear a legend, in addition to any legend which may be required pursuant to Section 5.6, indicating that the ownership of the shares of Common Stock represented by such certificate is subject to the restrictions, terms and conditions of this Plan and the Agreement relating to the Restricted Stock Award. All such certificates shall be deposited with the Company, together with stock powers or other instruments of assignment (including a power of attorney), each endorsed in blank with a guarantee of signature if deemed necessary or appropriate, which would permit transfer to the Company of all or a portion of the shares of Common Stock subject to the Restricted Stock Award in the event such award is forfeited in whole or in part. Upon termination of any applicable Restriction Period (and the satisfaction or attainment of applicable Performance Measures), subject to the Company's right to require payment of any taxes in accordance with Section 5.5, the restrictions shall be removed from the requisite number of any shares of Common Stock that are held in book entry form, and all certificates evidencing ownership of the requisite number of shares of Common Stock shall be delivered to the holder of such award.

(d) Rights with Respect to Restricted Stock Awards. Unless otherwise set forth in the Agreement relating to a Restricted Stock Award, and subject to the terms and conditions of a Restricted Stock Award, the holder of such award shall have all rights as a stockholder of the Company, including, but not limited to, voting rights, the right to receive dividends and the right to participate in any capital adjustment applicable to all holders of Common Stock; provided, however, that a distribution or dividend with respect to shares of Common Stock, including a regular cash dividend, shall be deposited with the Company and shall be subject to the same restrictions as the shares of Common Stock with respect to which such distribution was made.

3.3 Terms of Restricted Stock Unit Awards. Restricted Stock Unit Awards shall be subject to the following terms and conditions and shall contain such additional terms and conditions, not inconsistent with the terms of this Plan, as the Committee shall deem advisable.

(a) Number of Shares and Other Terms. The number of shares of Common Stock subject to a Restricted Stock Unit Award, including the number of shares that are earned upon the attainment of any specified Performance Measures, and the Restriction Period, Performance Period (if any) and Performance Measures (if any) applicable to a Restricted Stock Unit Award shall be determined by the Committee.

(b) Vesting and Forfeiture. The Agreement relating to a Restricted Stock Unit Award shall provide, in the manner determined by the Committee, in its discretion, and subject to the provisions of this Plan, for the vesting of such Restricted Stock Unit Award (i) if the holder of such award remains continuously in the employment of the Company during the specified Restriction Period or (ii) if specified Performance Measures (if any) are satisfied or met during a specified Performance Period, and for the forfeiture of the shares of Common Stock subject to such award (x) if the holder of such award does not remain continuously in the employment of the Company during the specified Restriction Period or (y) if specified Performance Measures (if any) are not satisfied or met during a specified Performance Period.

(c) Settlement of Vested Restricted Stock Unit Awards. The Agreement relating to a Restricted Stock Unit Award shall specify (i) whether such award may be settled in shares of Common Stock or cash or a combination thereof and (ii) whether the holder thereof shall be entitled to receive, on a current or deferred basis, dividend equivalents, and, if determined by the Committee, interest on, or the deemed reinvestment of, any deferred dividend equivalents, with respect to the number of shares of Common Stock subject to such award. Any dividend equivalents with respect to Restricted Stock Units that are subject to vesting conditions shall be subject to the same vesting conditions as the underlying awards. Prior to the settlement of a Restricted Stock Unit Award, the holder of such award shall have no rights as a stockholder of the Company with respect to the shares of Common Stock subject to such award.

3.4 Other Stock Awards. Subject to the limitations set forth in the Plan, the Committee is authorized to grant other awards that may be denominated or payable in, valued in whole or in part by reference to, or otherwise based on, or related to, shares of Common Stock, including without limitation shares of Common Stock granted as a bonus and not subject to any vesting conditions, dividend equivalents, deferred stock units, stock purchase rights and shares of Common Stock issued in lieu of obligations of the Company to pay cash under any compensatory plan or arrangement, subject to such terms as shall be determined by the Committee. The Committee shall determine the terms and conditions of such awards, which may include the right to elective deferral thereof, subject to such terms and conditions as the Committee may specify in its discretion. Any distribution, dividend or dividend equivalents with respect to Other Stock Awards that are subject to vesting conditions shall be subject to the same vesting conditions as the underlying awards.

3.5 Termination of Employment or Service. All of the terms relating to the satisfaction of Performance Measures and the termination of the Restriction Period or Performance Period relating to a Stock Award, or any forfeiture and cancellation of such award (i) upon a termination of employment with or service to the Company of the holder of such award, whether by reason of disability, retirement, death or any other reason, or (ii) during a paid or unpaid leave of absence, shall be determined by the Committee and set forth in the applicable award Agreement.

IV. PERFORMANCE AWARDS

4.1 Performance Awards. The Committee may, in its discretion, grant Performance Awards to such eligible persons as may be selected by the Committee.

4.2 Terms of Performance Awards. Performance Awards shall be subject to the following terms and conditions and shall contain such additional terms and conditions, not inconsistent with the terms of this Plan, as the Committee shall deem advisable.

(a) Value of Performance Awards and Performance Measures. The method of determining the value of the Performance Award and the Performance Measures and Performance Period applicable to a Performance Award shall be determined by the Committee.

(b) Vesting and Forfeiture. The Agreement relating to a Performance Award shall provide, in the manner determined by the Committee, in its discretion, and subject to the provisions of this Plan, for the vesting of such Performance Award if the

specified Performance Measures are satisfied or met during the specified Performance Period and for the forfeiture of such award if the specified Performance Measures are not satisfied or met during the specified Performance Period.

(c) Settlement of Vested Performance Awards. The Agreement relating to a Performance Award shall specify whether such award may be settled in shares of Common Stock (including shares of Restricted Stock) or cash or a combination thereof. If a Performance Award is settled in shares of Restricted Stock, such shares of Restricted Stock shall be issued to the holder in book entry form or a certificate or certificates representing such Restricted Stock shall be issued in accordance with Section 3.2(c) and the holder of such Restricted Stock shall have such rights as a stockholder of the Company as determined pursuant to Section 3.2(d). Any dividends or dividend equivalents with respect to a Performance Award shall be subject to the same restrictions as such Performance Award. Prior to the settlement of a Performance Award in shares of Common Stock, including Restricted Stock, the holder of such award shall have no rights as a stockholder of the Company.

4.3 Termination of Employment or Service. All of the terms relating to the satisfaction of Performance Measures and the termination of the Performance Period relating to a Performance Award, or any forfeiture and cancellation of such award (i) upon a termination of employment with or service to the Company of the holder of such award, whether by reason of disability, retirement, death or any other reason, or (ii) during a paid or unpaid leave of absence, shall be determined by the Committee and set forth in the applicable award Agreement.

V. GENERAL

5.1 Effective Date and Term of Plan. This Plan shall be submitted to the stockholders of the Company for approval at the Company's 2019 annual meeting of stockholders and, if approved by the affirmative vote of a majority of the shares of Common Stock present in person or represented by proxy at such annual meeting of stockholders, shall become effective as of the date on which the Plan was approved by stockholders (the "Effective Date"). This Plan shall terminate as of the first annual meeting of the Company's stockholders to occur on or after the tenth anniversary of its effective date, unless terminated earlier by the Board. Termination of this Plan shall not affect the terms or conditions of any award granted prior to termination.

Awards hereunder may be made at any time prior to the termination of this Plan, provided that no Incentive Stock Option may be granted later than ten years after the date on which the Plan was approved by the Board. In the event that this Plan is not approved by the stockholders of the Company, this Plan and any awards hereunder shall be void and of no force or effect.

5.2 Amendments. The Board may amend this Plan as it shall deem advisable; provided, however, that no amendment to the Plan shall be effective without the approval of the Company's stockholders if (i) stockholder approval is required by applicable law, rule or regulation, including any rule of The NASDQ Stock Market, or any other stock exchange on which the Common Stock is then traded, or (ii) such amendment seeks to modify the Non-Employee Director compensation limit set forth in Section 1.3 or the prohibition on repricing set forth in Section 2.4 hereof; provided further, that no amendment may materially impair the rights of a holder of an outstanding award without the consent of such holder.

5.3 Agreement. Each award under this Plan shall be evidenced by an Agreement setting forth the terms and conditions applicable to such award. No award shall be valid until an Agreement is executed by the Company and, to the extent required by the Company, executed or electronically accepted by the recipient of such award. Upon such execution or acceptance and delivery of the Agreement to the Company within the time period specified by the Company, such award shall be effective as of the effective date set forth in the Agreement.

5.4 Non-Transferability. No award shall be transferable other than by will, the laws of descent and distribution or pursuant to beneficiary designation procedures approved by the Company or, to the extent expressly permitted in the Agreement relating to such award, to the holder's family members, a trust or entity established by the holder for estate planning purposes, a charitable organization designated by the holder or pursuant to a domestic relations order, in each case, without consideration. Except to the extent permitted by the foregoing sentence or the Agreement relating to an award, each award may be exercised or settled during the holder's lifetime only by the holder or the holder's legal representative or similar person. Except as permitted by the second preceding sentence, no award may be sold, transferred, assigned, pledged, hypothecated, encumbered or otherwise disposed of (whether by operation of law or otherwise) or be subject to execution, attachment or similar process. Upon any attempt to so sell, transfer, assign, pledge, hypothecate, encumber or otherwise dispose of any award, such award and all rights thereunder shall immediately become null and void.

5.5 Tax Withholding. The Company shall have the right to require, prior to the issuance or delivery of any shares of Common Stock or the payment of any cash pursuant to an award made hereunder, payment by the holder of such award of any federal, state, local or other taxes which may be required to be withheld or paid in connection with such award. An Agreement may provide that (i) the Company shall withhold whole shares of Common Stock which would otherwise be delivered to a holder, having an aggregate Fair Market Value determined as of the date the obligation to withhold or pay taxes arises in connection with an award (the "Tax Date"), or withhold an amount of cash which would otherwise be payable to a holder, in the amount necessary to satisfy any such obligation or (ii) the holder may satisfy any such obligation by any of the following means: (A) a cash payment to the Company; (B) delivery (either actual delivery or by attestation procedures established by the Company) to the Company of

previously owned whole shares of Common Stock having an aggregate Fair Market Value, determined as of the Tax Date, equal to the amount necessary to satisfy any such obligation; (C) authorizing the Company to withhold whole shares of Common Stock which would otherwise be delivered having an aggregate Fair Market Value, determined as of the Tax Date, or withhold an amount of cash which would otherwise be payable to a holder, in either case equal to the amount necessary to satisfy any such obligation; (D) in the case of the exercise of an option, a cash payment by a broker-dealer acceptable to the Company to whom the participant has submitted an irrevocable notice of exercise or (E) any combination of (A), (B) and (C), in each case to the extent set forth in the Agreement relating to the award. Shares of Common Stock to be delivered or withheld may not have an aggregate Fair Market Value in excess of the amount determined by applying the minimum statutory withholding rate (or, if permitted by the Company, such other rate as will not cause adverse accounting consequences under the accounting rules then in effect, and is permitted under applicable IRS withholding rules). Any fraction of a share of Common Stock which would be required to satisfy such an obligation shall be disregarded and the remaining amount due shall be paid in cash by the holder.

5.6 Restrictions on Shares. Each award made hereunder shall be subject to the requirement that if at any time the Company determines that the listing, registration or qualification of the shares of Common Stock subject to such award upon any securities exchange or under any law, or the consent or approval of any governmental body, or the taking of any other action is necessary or desirable as a condition of, or in connection with, the delivery of shares thereunder, such shares shall not be delivered unless such listing, registration, qualification, consent, approval or other action shall have been effected or obtained, free of any conditions not acceptable to the Company. The Company may require that certificates evidencing shares of Common Stock delivered pursuant to any award made hereunder bear a legend indicating that the sale, transfer or other disposition thereof by the holder is prohibited except in compliance with the Securities Act of 1933, as amended, and the rules and regulations thereunder.

5.7 Adjustment. In the event of any equity restructuring (within the meaning of Financial Accounting Standards Board Accounting Standards Codification Topic 718, Compensation—Stock Compensation or any successor or replacement accounting standard) that causes the per share value of shares of Common Stock to change, such as a stock dividend, stock split, spinoff, rights offering or recapitalization through an extraordinary cash dividend, the number and class of securities available under this Plan, the terms of each outstanding option and SAR (including the number and class of securities subject to each outstanding option or SAR and the purchase price or base price per share), the terms of each outstanding Stock Award (including the number and class of securities subject thereto), and the terms of each outstanding Performance Award (including the number and class of securities subject thereto, if applicable), shall be appropriately adjusted by the Committee, such adjustments to be made in the case of outstanding options and SARs in accordance with Section 409A of the Code. In the event of any other change in corporate capitalization, including a merger, consolidation, reorganization, or partial or complete liquidation of the Company, such equitable adjustments described in the foregoing sentence may be made as determined to be appropriate and equitable by the Committee to prevent dilution or enlargement of rights of participants. In either case, the decision of the Committee regarding any such adjustment shall be final, binding and conclusive.

5.8 Change in Control.

(a) Subject to the terms of the applicable award Agreements, in the event of a “Change in Control,” the Board, as constituted prior to the Change in Control, may, in its discretion:

(1) *require that (i) some or all outstanding options and SARs shall become exercisable in full or in part, either immediately or upon a subsequent termination of employment, (ii) the Restriction Period applicable to some or all outstanding Stock Awards shall lapse in full or in part, either immediately or upon a subsequent termination of employment, (iii) the Performance Period applicable to some or all outstanding awards shall lapse in full or in part, and (iv) the Performance Measures applicable to some or all outstanding awards shall be deemed to be satisfied at the target, maximum or any other level;*

(2) *require that shares of capital stock of the corporation resulting from or succeeding to the business of the Company pursuant to such Change in Control, or a parent corporation thereof, be substituted for some or all of the shares of Common Stock subject to an outstanding award, with an appropriate and equitable adjustment to such award as determined by the Board in accordance with Section 5.7; and/or*

(3) *require outstanding awards, in whole or in part, to be surrendered to the Company by the holder, and to be immediately cancelled by the Company, and to provide for the holder to receive (i) a cash payment in an amount equal to (A) in the case of an option or an SAR, the aggregate number of shares of Common Stock then subject to the portion of such option or SAR surrendered, whether or not vested or exercisable, multiplied by the excess, if any, of the Fair Market Value of a share of Common Stock as of the date of the Change in Control, over the purchase price or base price per share of Common Stock subject to such option or SAR, (B) in the case of a Stock Award or a Performance Award denominated in shares of Common Stock, the number of shares of Common Stock then subject to the portion of such award surrendered to the extent the Performance Measures applicable to such award have been satisfied or are deemed satisfied pursuant to Section 5.8(a)(i), whether or not vested, multiplied by the Fair Market Value of a share of Common Stock as of the date of the Change in Control, and (C) in the case of a Performance Award denominated in cash, the value of the Performance Award then subject to the portion of such award surrendered to the extent the Performance Measures applicable to such award have been satisfied or are deemed satisfied pursuant to Section 5.8(a)(i); (ii) shares of capital stock of the corporation resulting from or succeeding to the business of the Company pursuant to such Change in*

Control, or a parent corporation thereof, having a fair market value not less than the amount determined under clause (i) above; or (iii) a combination of the payment of cash pursuant to clause (i) above and the issuance of shares pursuant to clause (ii) above.

(b) For purposes of this Plan, a “Change in Control” shall be deemed to have occurred if:

(1) *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 Persons who are employees at any time more than one year before a transaction) becomes the beneficial owner (within the meaning of Rule 13d-3 promulgated under the Exchange Act), directly or indirectly, of securities of the Company representing 50% or more of the combined voting power of the Company’s then outstanding securities;*

(2) *The sale or disposition by the Company of all, or substantially all, of the Company’s assets;*

(3) *Individuals who, as of the date hereof, constitute the Board (the “Incumbent Board”) cease for any reason to constitute at least a majority of such Board; provided that any individual who becomes a director of the Company subsequent to the date hereof whose election, or nomination for election by the Company’s shareholders, was approved by the vote of at least a majority of the directors then comprising the Incumbent Board shall be deemed a member of the Incumbent Board; and provided further, that any individual who was initially elected as a director of the Company as a result of an actual or threatened solicitation by a Person other than the Board for the purpose of opposing a solicitation by any other Person with respect to the election or removal of directors, or any other actual or threatened solicitation of proxies or consents by or on behalf of any Person other than the Board shall not be deemed a member of the Incumbent Board; or*

(4) *The consummation of a plan of complete liquidation or dissolution of the Company.*

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 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.

5.9 Deferrals. The Committee may determine that the delivery of shares of Common Stock or the payment of cash, or a combination thereof, upon the settlement of all or a portion of any award made hereunder shall be deferred, or the Committee may, in its sole discretion, approve deferral elections made by holders of awards. Deferrals shall be for such periods and upon such terms as the Committee may determine in its sole discretion, subject to the requirements of Section 409A of the Code.

5.10 No Right of Participation, Employment or Service. Unless otherwise set forth in an employment agreement, no person shall have any right to participate in this Plan. Neither this Plan nor any award made hereunder shall confer upon any person any right to continued employment by or service with the Company, any Subsidiary or any affiliate of the Company or affect in any manner the right of the Company, any Subsidiary or any affiliate of the Company to terminate the employment or service of any person at any time without liability hereunder.

5.11 Rights as Stockholder. No person shall have any right as a stockholder of the Company with respect to any shares of Common Stock or other equity security of the Company which is subject to an award hereunder unless and until such person becomes a stockholder of record with respect to such shares of Common Stock or equity security.

5.12 Designation of Beneficiary. To the extent permitted by the Company, a holder of an award may file with the Company a written designation of one or more persons as such holder’s beneficiary or beneficiaries (both primary and contingent) in the event of the holder’s death or incapacity. To the extent an outstanding option or SAR granted hereunder is exercisable, such beneficiary or beneficiaries shall be entitled to exercise such option or SAR pursuant to procedures prescribed by the Company. Each beneficiary designation shall become effective only when filed in writing with the Company during the holder’s lifetime on a form prescribed by the Company. The spouse of a married holder domiciled in a community property jurisdiction shall join in any designation of a beneficiary other than such spouse. The filing with the Company of a new beneficiary designation shall cancel all previously filed beneficiary designations. If a holder fails to designate a beneficiary, or if all designated beneficiaries of a holder predecease the holder, then each outstanding award held by such holder, to the extent vested or exercisable, shall be payable to or may be exercised by such holder’s executor, administrator, legal representative or similar person.

5.13 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 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 of Common Stock (whether restricted or unrestricted) or proceeds from the participant’s sale

of shares of Common Stock 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 Common 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 service with the Company, 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 (iii) during his or her service with the Company, 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 5.13(e) above, the participant shall deliver to the Company the shares of Common Stock acquired pursuant to the award, or, if participant has sold the shares of Common Stock, the gain realized, or payment received as a result of the rescinded exercise, payment, or delivery; provided, that if the participant returns shares of Common Stock that the participant purchased pursuant to the exercise of an option (or the gains realized from the sale of such Common Stock), the Company shall promptly refund the exercise price, without earnings, that the participant paid for such 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 of Common Stock 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) 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.

(i) Nothing contained in this Section 5.13 is intended to limit the participant’s ability to (i) report possible violations of law or regulation to, or file a charge or complaint with, the Securities and Exchange Commission, the Equal Employment Opportunity Commission, the National Labor Relations Board, the Occupational Safety and Health Administration, the Department of Justice, the Congress, any Inspector General, or any other federal, state or local governmental agency or commission (“Government Agencies”), (ii) communicate with any Government Agencies or otherwise participate in any investigation or proceeding that may be conducted by any Government Agency, including providing documents or other information, without notice to the Company or (iii) under applicable United States federal law to (x) disclose in confidence trade secrets to federal, state, and local government officials, or to an attorney, for the sole purpose of reporting or investigating a suspected violation of law or (y) disclose trade secrets in a document filed in a lawsuit or other proceeding, but only if the filing is made under seal and protected from public disclosure.

5.14 Recoupment of Awards. Unless otherwise specifically provided in an 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 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.

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.

5.15 Governing Law. This Plan, each award hereunder and the related Agreement, and all determinations made and actions taken pursuant thereto, to the extent not otherwise governed by the Code or the laws of the United States, shall be governed by the laws of the State of Delaware and construed in accordance therewith without giving effect to principles of conflicts of laws.

5.16 Foreign Employees. Without amending this Plan, the Committee may grant awards to eligible persons who are foreign nationals and/or reside outside of the United States on such terms and conditions different from those specified in this Plan as may in the judgment of the Committee be necessary or desirable to foster and promote achievement of the purposes of this Plan and, in furtherance of such purposes the Committee may make such modifications, amendments, procedures, subplans and the like as may be necessary or advisable to comply with provisions of laws in other countries or jurisdictions in which the Company or its Subsidiaries operates or has employees.



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.**

⇩ *Please detach here* ⇩

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

- 1. Election of directors:

01 James S. Burns, D.L.S.	05 Valerie B. Palmieri
02 Nancy G. Cocozza	06 David R. Schreiber
03 Veronica G.H. Jordan, Ph.D.	
04 James T. LaFrance	

FOR ALL
(except as marked to the contrary below). **WITHHOLD ALL**

(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. Advisory vote to approve the compensation of the Company's named executive officers.
- 3. Proposal to approve the Vermillion, Inc. 2019 Stock Incentive Plan.
- 4. Proposal to ratify the selection of BDO USA, LLP as the Company's independent registered public accounting firm for the year ending December 31, 2019.

<input type="checkbox"/> For	<input type="checkbox"/> Against	<input type="checkbox"/> Abstain
<input type="checkbox"/> For	<input type="checkbox"/> Against	<input type="checkbox"/> Abstain
<input type="checkbox"/> For	<input type="checkbox"/> Against	<input type="checkbox"/> Abstain

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 AND 4.

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

VERMILLION, INC.
ANNUAL MEETING OF STOCKHOLDERS

Tuesday, June 18, 2019
8:00 a.m. (Eastern Daylight Time)

Trumbull Marriott
180 Hawley Ln.
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 18, 2019, 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 AND 4 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)*