

VERMILLION, INC.

FORM 10-K/A (Amended Annual Report)

Filed 04/29/19 for the Period Ending 12/31/18

Address	12117 BEE CAVES ROAD BUILDING THREE SUITE 100 AUSTIN, TX, 78738
Telephone	512-519-0400
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Sector	Healthcare
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UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D. C. 20549

FORM 10-K/A
(Amendment No. 1)

- ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**
For the fiscal year ended December 31, 2018 or
- TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**
For the transition period from _____ to _____

Commission file number: 001-34810

Vermillion, Inc.

(Exact name of registrant as specified in its charter)

Delaware

(State or Other Jurisdiction of Incorporation or Organization)

33-0595156

(I.R.S. Employer Identification No.)

12117 Bee Caves Road, Building Three, Suite 100

Austin, Texas

(Address of Principal Executive Offices)

78738

(Zip Code)

Registrant's telephone number, including area code: (512) 519-0400

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

Title of each class
Common Stock, par value \$0.001 per share

Name of each exchange on which registered
The Nasdaq Stock Market

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

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

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

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes No

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§ 232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes No

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K (§ 229.405) is not contained herein, and will not be contained, to the best of registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K.

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

Large accelerated filer

Accelerated filer

Non-accelerated filer

Smaller reporting company

Emerging growth company

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

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

The aggregate market value of voting common stock held by non-affiliates of the registrant is \$33,929,264 and is based upon the last sales price as quoted on The Nasdaq Capital Market as of June 29, 2018. As of April 22, 2019, the registrant had 75,580,474 shares of common stock, par value \$0.001 per share, outstanding.

Explanatory Note

This Amendment No. 1 on Form 10-K/A (this “Amendment”) amends the Annual Report on Form 10-K of Vermillion, Inc., a Delaware corporation (“Vermillion” and, together with its subsidiaries, the “Company”, “we”, “our” or “us”), for the fiscal year ended December 31, 2018, which was originally filed with the Securities Exchange Commission (“SEC”) on March 28, 2019 (the “Original Filing”).

This Amendment is being filed to amend Part III of the Original Filing to include the information required by and not included in Part III of the Original Filing because the Company no longer intends to file a definitive proxy statement for an annual meeting of stockholders within 120 days of the end of its fiscal year ended December 31, 2018. This Amendment amends and restates in their entirety Items 10, 11, 12, 13 and 14 of Part III of the Original Filing.

In addition, pursuant to the rules of the SEC, the Company has also included as exhibits currently dated certifications required under Section 302 of the Sarbanes-Oxley Act of 2002. As such, this Amendment also updates, amends and supplements Part IV, Item 15(b) of the Original Filing to include the filing of new Exhibits 31.1 and 31.2, certifications of our Chief Executive Officer and Chief Financial Officer, pursuant to Section 302 of the Sarbanes-Oxley Act of 2002. We are amending and refiling Item 15(b) of Part IV solely to reflect the inclusion of those certifications. Because no financial statements are contained within this Amendment and this Amendment does not contain or amend any disclosure with respect to Items 307 and 308 of Regulation S-K, paragraphs 3, 4 and 5 of the certifications have been omitted. Because no financial statements are contained within this Amendment, we are not including certifications pursuant to Section 906 of the Sarbanes-Oxley Act of 2002. The cover page of the Original Filing is also amended to delete the reference to the incorporation by reference of the Company's definitive proxy statement.

Except as described above, no other changes have been made to the Original Filing. The Original Filing continues to speak as of the date of the Original Filing, and the Company has not updated the disclosures contained therein to reflect any events which occurred at a date subsequent to the filing of the Original Filing other than as expressly indicated in this Amendment. Accordingly, this Amendment should be read in conjunction with the Original Filing and the Company's other filings made with the SEC on or subsequent to March 28, 2019.

VERMILLION, INC.

FORM 10-K/A

For the Fiscal Year Ended December 31, 2018

Table of Contents

	<u>Page No.</u>
<u>PART III</u>	1
<u>ITEM 10.</u> <u>Directors, Executive Officers and Corporate Governance</u>	1
<u>ITEM 11.</u> <u>Executive Compensation</u>	5
<u>ITEM 12.</u> <u>Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters</u>	14
<u>ITEM 13.</u> <u>Certain Relationships and Related Transactions, and Director Independence</u>	15
<u>ITEM 14.</u> <u>Principal Accountant Fees and Services</u>	17
<u>PART IV</u>	18
<u>ITEM 15.</u> <u>Exhibits and Financial Statement Schedules</u>	18
<u>SIGNATURES</u>	19

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PART III

ITEM 10 . DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE

Board of Directors

Our Board of Directors (the “Board”) 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 (the “Annual Meeting”) and until their successors are elected and qualified.

Information regarding the current Board is set forth below.

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
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

Director Biographies and Qualifications

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. Cocozza'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, member of our Audit Committee and member of our Compensation 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 Item 13 below. He also served as our President and Chief Executive Officer from April 2014 to December 2014. Mr. LaFrance has almost thirty years of diagnostic industry experience. From May 2012 to September 2013, Mr. LaFrance was head of digital pathology and acting Chief Executive Officer of Omnyx, LLC for GE Healthcare, a medical technology provider. From 2009 to 2011, Mr. LaFrance was the President and Chief Executive Officer of LaFrance Consulting, an independent consulting firm. Prior to that, Mr. LaFrance held a series of commercial, strategic marketing and business development leadership roles at Ventana Medical Systems, Inc. (now Roche Tissue Diagnostics), a provider of tissue-based diagnostic solutions, including general manager of their North American and International commercial organizations from 2001 to 2009. Prior to Ventana, Mr. LaFrance served in leadership roles in strategic marketing and business development at Bayer Diagnostics. He currently serves as a member of the boards of HTG Molecular, Inc., BioArray Genetics, Inc. 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.

Board Committees

Our Board has established the following committees: an Audit Committee, a Compensation Committee, a Nominating and Governance Committee and a Strategy Committee.

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 Item 11 below.

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.

Strategy Committee

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

Management

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

Name	Age	Positions
Valerie B. Palmieri	57	President and Chief Executive Officer
Robert Beechey	56	Chief Financial Officer

Valerie B. Palmieri - Biographical information about Ms. Palmieri can be found under " Director Biographies and Qualifications ."

Robert Beechey joined Vermillion in December 2017 as our Chief Financial Officer. Prior to joining the Company, Mr. Beechey spent three years with Q2 Solutions, a Quintiles Quest joint venture that provides clinical trial laboratory services. From 2016 to 2017, he served as Vice President and General Manager and, from 2015 to 2016, he served as Chief Financial Officer. From 2011 to 2015, Mr. Beechey served as Vice President of Quintiles Transnational Corporation, a research, clinical trial and pharmaceutical consulting services company that was acquired by Quintiles IMS Inc. in 2016. He also spent four years with Thermo Fisher Scientific and over ten years with Eastman Kodak Company. Mr. Beechey received his Bachelors of Science in Economics from the Wharton School of the University of Pennsylvania, and his M.B.A. from Insead.

Section 16(a) Beneficial Ownership Reporting Compliance

Section 16(a) of the Exchange Act requires our executive officers and directors, and persons who own more than 10% of a registered class of our equity securities, to file reports of ownership and changes in ownership with the SEC and with any national securities exchange on which such securities are traded or quoted. Executive officers, directors and such stockholders are required by SEC regulations to furnish us with copies of all Section 16(a) forms they file. As a practical matter, we assist our executive officers and directors by completing and filing Section 16 reports on their behalf. Based solely on a review of the copies of such reports furnished to us, and the written representations of our executive officers and directors, we believe that our executive officers and directors, and persons who own more than 10% of a registered class of our equity securities, complied with all applicable filing requirements for the year ended December 31, 2018.

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.

ITEM 11. EXECUTIVE COMPENSATION

Director 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, the elimination of the cash component, as well as increased frequency of meetings from quarterly to monthly, 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 common 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 shareholders of the Company and his 2018 compensation was prorated to reflect his service during 2018.

(5) Dr. Varma waived his compensation for 2018.

Compensation Discussion and Analysis

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 key employees other than the Chief Executive Officer.

On June 23, 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 payout targets for 2017 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.

Compensation Committee Interlocks and Insider Participation

There were no compensation committee interlocks during 2018.

Method for Determining Compensation Amounts

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

The Compensation Committee reviews both current pay and the opportunity for future compensation to achieve an appropriate mix between equity incentive awards and cash payments in order to meet our objectives. However, prior stock

compensation gains are not considered in setting future compensation levels. The mix of compensation elements is designed to reward recent results and motivate long-term performance through a combination of cash and equity incentive awards.

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

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 year 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 ⁽³⁾	Total
Valerie B. Palmieri President and Chief Executive Officer	2018	\$ 375,000	\$ —	\$ —	\$ 261,900	\$ 46,875	\$ —	\$ 682	\$ 684,457
	2017	\$ 375,000	\$ —	\$ —	\$ 611,456	\$ 121,875	\$ —	\$ 682	\$ 1,109,013
Robert Beechey Chief Financial Officer (effective December 18, 2017)	2018	\$ 280,000	\$ —	\$ —	\$ 87,300	\$ 28,000	\$ —	\$ 426	\$ 395,726
	2017	\$ 11,667	\$ —	\$ —	\$ 159,600	\$ 2,593	\$ —	\$ —	\$ 173,860
Fred Ferrara Former Chief Operating Officer	2018	\$ 130,359	\$ —	\$ —	\$ 58,200	\$ —	\$ —	\$ 274,910 ⁽⁴⁾	\$ 463,469
	2017	\$ 310,000	\$ —	\$ —	\$ 138,814	\$ 40,300	\$ —	\$ 682	\$ 489,796

- (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 Original Filing.
- (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	— 1	— 187,500	— 281,250	450,000 —	1.11 —	261,900 —
Robert Beechey	4/13/2018	— 1	— 112,000	— 168,000	150,000 —	1.11 —	87,300 —
Fred Ferrara	4/13/2018	— 1	— 124,000	— 186,000	100,000 —	1.11 —	58,200 —

- (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 Original Filing.

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 Securities Underlying Unearned Options	Option Exercise Price	Option Expiration Date	Number of Shares or Units of Stock that have not Vested	Market Value of Shares or Units of Stock that have not Vested	Equity Incentive Plan Awards: Number of 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⁾	—	—	—	—
	—	450,000	—	\$ 1.11	4/13/2028 ⁽²⁾	—	—	—	—
Robert Beechey	37,500	112,500	—	\$ 2.05	12/17/2027 ⁽²⁾	—	—	—	—
	—	150,000	—	\$ 1.11	4/13/2028 ⁽²⁾	—	—	—	—
Fred Ferrara	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).

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

Security Ownership Of Certain Beneficial Owners And Management

The following table sets forth certain information regarding beneficial ownership of our common stock as of April 22, 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 April 22, 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 April 22, 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 April 22, 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 Coccozza ⁽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%

- (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 April 22, 2019.
- (7) Includes 8,854 RSUs and 46,472 shares issuable upon exercise of stock options vesting within 60 days of April 22, 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 April 22, 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 April 22, 2019.
- (10) Includes 9,375 RSUs vesting within 60 days of April 22, 2019.
- (11) Includes 7,531 common stock warrants and 1,350,000 shares issuable upon exercise of stock options vesting within 60 days of April 22, 2019.
- (12) Includes 75,000 shares issuable upon exercise of stock options vesting within 60 days of April 22, 2019.
- (13) Includes 5,021 common stock warrants.

Equity Compensation Plan Information

See Part II Item 5 on page 25 of the Original Filing, which is incorporated into this Item by reference.

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

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. 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.

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 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.

ITEM 14. PRINCIPAL ACCOUNTANT FEES AND SERVICES

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

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

PART IV

ITEM 15. EXHIBITS, FINANCIAL STATEMENT SCHEDULES

(a)

Financial Statements

See Index to Consolidated Financial Statements on the page immediately following page 37 of the Original Filing, which is incorporated into this Item by reference.

All schedules are omitted because the required information was shown in the financial statements or the notes thereto in our Original Filing.

(b) EXHIBITS

Exhibit Number	Exhibit Description	Incorporated by Reference			Filed Herewith
		Form	File No.	Filing Date	
3.1	<u>Fourth Amended and Restated Certificate of Incorporation of Vermillion, Inc. dated January 22, 2010</u>	8-K	000-31617	3.1 January 25, 2010	

<u>3.2</u>	<u>Certificate of Amendment of Fourth Amended and Restated Certificate of Incorporation, effective June 19, 2014</u>	10-Q	001-34810	3.2	August 14, 2014
<u>3.3</u>	<u>Certificate of Designations, Preferences and Rights of Series B Convertible Preferred Stock</u>	8-K	001-34810	4.1	April 17, 2018
<u>3.4</u>	<u>Fifth Amended and Restated Bylaws of Vermillion, Inc., effective June 19, 2014</u>	10-Q	001-34810	3.3	August 14, 2014
<u>4.1</u>	<u>Form of Vermillion, Inc.'s (formerly CIPHERGEN Biosystems, Inc.) Common Stock Certificate</u>	S-1/A	333-32812	4.1	August 24, 2000
<u>4.2</u>	<u>Securities Purchase Agreement dated May 8, 2013, by and among Vermillion, Inc. and the purchasers identified therein</u>	8-K	001-34810	10.1	May 14, 2013
<u>4.3</u>	<u>Stockholders Agreement dated May 13, 2013, by and among Vermillion, Inc., Oracle Partners, LP, Oracle Ten Fund Master, LP, Jack W. Schuler and other purchasers named therein.</u>	8-K	001-34810	10.2	May 14, 2013
<u>4.4</u>	<u>Promissory Note by Vermillion, Inc. in favor of the State of Connecticut, acting by and through the Department of Economic and Community Development, effective March 14, 2016</u>	10-Q	001-34810	10.2	May 16, 2016
<u>4.5</u>	<u>Securities Purchase Agreement, dated February 13, 2017, among Vermillion, Inc. and the investors listed on Schedule I thereto</u>	8-K	001-34810	99.1	February 17, 2017
<u>4.6</u>	<u>Form of Warrant, issued February 13, 2017</u>	8-K	001-34810	99.1	February 17, 2017
<u>4.7</u>	<u>Form of Letter Agreement, by and between Vermillion, Inc. and certain warrant holders</u>	8-K	001-34810	4.1	August 28, 2017
<u>4.8</u>	<u>Form of Indenture</u>	S-3	333-221092	4.6	October 24, 2017
<u>10.1</u>	<u>Vermillion, Inc. 2010 Stock Incentive Plan #</u>	8-K	000-31617	10.1	February 12, 2010
<u>10.2</u>	<u>CIPHERGEN Biosystems, Inc. 401(k) Plan #</u>	10-K	000-31617	10.7	March 22, 2005
<u>10.3</u>	<u>Form of Proprietary Information Agreement between Vermillion, Inc. (formerly CIPHERGEN Biosystems, Inc.) and certain of its employees #</u>	S-1/A	333-32812	10.9	August 24, 2000
<u>10.4</u>	<u>Vermillion, Inc. Amended and Restated 2010 Stock Incentive Plan #</u>	8-K	001-34810	10.1	December 17, 2013
<u>10.5</u>	<u>Vermillion, Inc. Second Amended and Restated 2010 Stock Incentive Plan #</u>	8-K	001-34810	10.1	June 22, 2015
<u>10.6</u>	<u>Vermillion Inc. Second Amended and Restated 2010 Stock Incentive Plan (as amended effective June 21, 2018) #</u>	8-K	001-34810	10.1	June 27, 2018
<u>10.7</u>	<u>Form of Vermillion, Inc.'s Stock Option Award #</u>	10-K	001-34810	10.7	March 28, 2019

<u>10.8</u>	<u>Form of Vermillion Inc.'s Restricted Stock Award #</u>	10-K	001-34810	10.8	March 28, 2019
<u>10.9</u>	<u>Employment Agreement between Vermillion, Inc. and Fred Ferrara dated April 1, 2015 #</u>	8-K	001-34810	10.1	April 6, 2015
<u>10.10</u>	<u>Employment Agreement between Vermillion, Inc. and Valerie B. Palmieri effective January 1, 2015 #</u>	8-K	001-34810	99.1	December 17, 2014
<u>10.11</u>	<u>Testing and Services Agreement between Vermillion, Inc., ASPiRA LABS, Inc. and Quest Diagnostics Incorporated, dated as of March 11, 2015</u>	10-Q	001-34810	10.5	May 12, 2015
<u>10.12</u>	<u>Amendment No. 1 to the Testing Services Agreement dated March 11, 2015 among Vermillion, Inc., ASPiRA LABS, Inc. and Quest Diagnostics Incorporated dated April 10, 2015</u>	10-Q	001-34810	10.6	May 12, 2015
<u>10.13</u>	<u>Amendment No. 2 to Testing and Services Agreement, executed as of March 7, 2017 and effective as of March 11, 2017, by and among Vermillion, Inc., ASPiRA LABS, Inc. and Quest Diagnostics Incorporated</u>	8-K	001-34810	10.1	March 13, 2017
<u>10.14</u>	<u>Amendment No. 3 to Testing and Services Agreement, executed as of March 1, 2018 by and among Vermillion, Inc., ASPiRA LABS, Inc. and Quest Diagnostics Incorporated</u>	8-K	001-34810	10.1	March 6, 2018
<u>10.15</u>	<u>Assistance Agreement by and between the State of Connecticut, acting by and through the Department of Economic and Community Development and Vermillion, Inc. effective March 22, 2016</u>	10-Q	001-34810	10.1	May 16, 2016
<u>10.16</u>	<u>Patent Security Agreement by Vermillion, Inc. in favor of the State of Connecticut, acting by and through the Department of Economic and Community Development, effective March 22, 2016</u>	10-Q	001-34810	10.3	May 16, 2016
<u>10.17</u>	<u>Security Agreement by Vermillion, Inc. in favor of the State of Connecticut, acting by and through the Department of Economic and Community Development, effective March 22, 2016</u>	10-Q	001-34810	10.4	May 16, 2016
<u>10.18</u>	<u>Employment Agreement between Vermillion, Inc. and Robert Beechey dated December 18, 2017 #</u>	8-K	001-34810	10.1	December 20, 2017

10.19	<u>First Amendment to the Assistance Agreement by and between the State of Connecticut, acting by and through the Department of Economic and Community Development and Vermillion, Inc. dated March 7, 2018</u>	10-K	001-34810	10.21	March 13, 2018	
14.1	<u>Code of Ethics</u>	8-K	001-34810	14.1	December 7, 2010	
21.0	<u>Subsidiaries of Registrant</u>					*
23.1	<u>Consent of BDO USA, LLP, Independent Registered Public Accounting Firm</u>					*
31.1	<u>Certification of the Chief Executive Officer Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002</u>					✓
31.2	<u>Certification of the Chief Financial Officer Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002</u>					✓
32.0	<u>Certification of the Chief Executive Officer and Chief Financial Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002</u>					*
101	Interactive Data Files					*

* Filed or furnished with Original Filing.

✓ Filed herewith.

Management contract or compensatory plan or arrangement.

† Confidential treatment has been granted with respect to certain provisions of this agreement. Omitted portions have been filed separately with the SEC.

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

Vermillion, Inc.

Date: April 29, 2019

/s/ Valerie B. Palmieri

Valerie B. Palmieri

President and Chief Executive Officer (Principal Executive Officer)

Date: April 29, 2019

/s/ Robert Beechey

Robert Beechey

Chief Financial Officer (Principal Financial Officer and Principal Accounting Officer)

CERTIFICATION

I, Valerie B. Palmieri, certify that:

1. I have reviewed this Amendment No. 1 to the annual report on Form 10-K for the year ended December 31, 2018 of Vermillion, Inc.; and
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report.

Date: April 24 , 2019 /s/ Valerie B. Palmieri_____

Valerie B. Palmieri
President and Chief Executive Officer
(Principal Executive Officer)

CERTIFICATION

I, Robert Beechey, certify that:

1. I have reviewed this Amendment No. 1 to the annual report on Form 10-K for the year ended December 31, 2018 of Vermillion, Inc.; and
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report.

Date: April 24 , 2019 /s/ Robert Beechey

Robert Beechey
Chief Financial Officer
(Principal Financial Officer and Principal Accounting Officer)
