

[Table of Contents](#)

Filed Pursuant to Rule 424(b)(5)
Registration No. 333-221092

The information in this preliminary prospectus supplement and the accompanying prospectus is not complete and may be changed. Neither this prospectus supplement nor the accompanying prospectus is an offer to sell these securities, and we are not soliciting an offer to buy these securities, in any jurisdiction where the offer or sale is not permitted.

SUBJECT TO COMPLETION, DATED JUNE 25, 2019

PRELIMINARY PROSPECTUS SUPPLEMENT
(to Prospectus dated November 7, 2017)

Shares



Vermillion, Inc.

Common Stock

We are offering _____ shares of our common stock pursuant to this prospectus supplement and the accompanying prospectus.

Our common stock is traded on The Nasdaq Capital Market under the symbol "VRML". On June 24, 2019, the last reported sale price for our common stock on The Nasdaq Capital Market was \$1.01 per share.

As of June 24, 2019, the aggregate market value of our common stock held by our non-affiliates, or "public float," as calculated pursuant to the rules of the Securities and Exchange Commission, was approximately \$57,817,086, based on approximately 43,147,079 shares of our common stock held on such date by our non-affiliates, at a price of \$1.34 per share, which was the last reported sale price for our common stock on The Nasdaq Stock Market on May 14, 2019 (a date within 60 days of the date of this prospectus supplement). We have not sold any securities in reliance on General Instruction I.B.6 of Form S-3 during the 12 calendar months prior to and including the date of this prospectus supplement.

Investing in our common stock involves significant risk. Please read carefully the section entitled "[Risk Factors](#)" beginning on page S-4 of this prospectus supplement.

	Per Share	Total
Public Offering Price	\$	\$
Underwriting Discounts and Commissions ¹	\$	\$
Proceeds to Vermillion, Inc. before expenses	\$	\$

(1) See "Underwriting" for additional information regarding underwriting compensation.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or determined if this prospectus supplement or the accompanying prospectus is truthful or complete. Any representation to the contrary is a criminal offense.

The underwriter may also purchase up to an additional _____ shares of common stock from us, at the public offering price, less the underwriting discount, within 30 days from the date of this prospectus supplement.

Delivery of the shares is expected to be made on or about _____, 2019.

Book-Running Manager

William Blair

The date of this prospectus supplement is _____, 2019

Table of Contents

TABLE OF CONTENTS

Prospectus Supplement

	<u>Page</u>
About This Prospectus Supplement	S-i
Prospectus Supplement Summary	S-1
The Offering	S-3
Risk Factors	S-4
Disclosure Regarding Forward-Looking Statements	S-8
Use of Proceeds	S-11
Dilution	S-11
Dividend Policy	S-11
Participation Rights of Certain Investors	S-12
Material U.S. Federal Income Tax Consequences to Non-U.S. Holders	S-13
Underwriting	S-16
Legal Matters	S-23
Experts	S-23
Where You Can Find More Information	S-24
Important Information Incorporated by Reference	S-24

Prospectus

	<u>Page</u>
About This Prospectus	1
Summary	2
Risk Factors	3
Disclosure Regarding Forward-Looking Statements	4
Use of Proceeds	7
Description of Capital Stock	8
Description of Debt Securities	13
Plan of Distribution	16
Legal Matters	20
Experts	20
Where You Can Find More Information	20
Important Information Incorporated By Reference	20

ABOUT THIS PROSPECTUS SUPPLEMENT

This prospectus supplement and the accompanying prospectus form a part of a registration statement on Form S-3 that we filed with the Securities and Exchange Commission (the “SEC”) utilizing a “shelf” registration process. This document contains two parts. The first part is this prospectus supplement, which describes the terms of the offering being made pursuant to this prospectus supplement and also adds to and updates information contained in the accompanying prospectus and the documents incorporated herein and therein by reference. The second part is the accompanying prospectus, which provides more general information, some of which may not apply to the offering being made pursuant to this prospectus supplement. If the information contained in this prospectus supplement differs or varies from the information contained in the accompanying prospectus, you should rely on the information set forth in this prospectus supplement.

You should rely only on the information contained or incorporated by reference in this prospectus supplement, the accompanying prospectus, any related free writing prospectus provided or approved by us and the other information to which we refer you. We have not, and the underwriter has not, authorized any person to provide you with other or additional information.

You should assume that the information appearing in this prospectus supplement, the accompanying prospectus, any related free writing prospectus and the documents incorporated by reference herein or therein are accurate only as of the respective dates of those documents. Our business, financial condition, results of operations and prospects may have changed since those dates, and neither the delivery of this prospectus supplement and the accompanying prospectus nor any sale hereunder shall, under any circumstances, create any implication to the contrary.

Before you invest in our common stock, you should carefully read this prospectus supplement, the accompanying prospectus, the registration statement of which this prospectus and the accompanying prospectus forms a part (including the exhibits thereto) and the documents incorporated by reference into this prospectus supplement and the accompanying prospectus. See “Where You Can Find More Information” and “Important Information Incorporated by Reference” in this prospectus supplement.

Table of Contents

We are offering to sell, and seeking offers to buy, shares of our common stock only in jurisdictions where offers and sales are permitted. The distribution of this prospectus supplement and the accompanying prospectus and the offering of our common stock in certain jurisdictions may be restricted by law. Persons outside the United States who come into possession of this prospectus supplement and the accompanying prospectus must inform themselves about, and observe any restrictions relating to, the offering of our common stock and the distribution of this prospectus supplement and the accompanying prospectus outside the United States. This prospectus supplement and the accompanying prospectus do not constitute, and may not be used in connection with, an offer to sell, or a solicitation of an offer to buy, any shares of common stock by any person in any jurisdiction in which it is unlawful for such person to make such an offer or solicitation.

PROSPECTUS SUPPLEMENT SUMMARY

This summary highlights certain information contained in greater detail elsewhere in this prospectus supplement or the accompanying prospectus or incorporated by reference herein or therein. This summary is not complete and does not contain all of the information that you should consider before deciding whether to invest in our common stock. Accordingly, you should read the information contained or incorporated by reference in this prospectus supplement, the accompanying prospectus, any related free writing prospectus provided or approved by us and the other information to which we refer you, before you invest in our common stock. Unless the context requires otherwise, all references in this prospectus to “Vermillion,” “the Company,” “we,” “us,” “our” or similar references mean Vermillion, Inc. together with its consolidated subsidiaries.

Our Company

Our vision is to drive the advancement of women's health by providing innovative methods to detect, monitor and manage the treatment of both benign and malignant gynecologic disease. We are dedicated to the discovery, development and commercialization of novel high-value diagnostic and bio-analytical solutions that help physicians diagnose, treat and improve outcomes for women. Our tests are designed to help guide decisions regarding patient treatment, which may include decisions to refer patients to specialists, to perform additional testing, or to assist in monitoring response to therapy. A distinctive feature of our approach is the combination of multi-modal diagnostics and data. Our goal is to combine multiple biomarkers, other modalities and diagnostics, clinical risk factors and patient data into a single, reportable index score that has higher diagnostic accuracy than its constituents. We concentrate our development of novel diagnostic tests for gynecologic disease, with an initial focus on ovarian cancer. We also intend to address clinical questions related to early disease detection, treatment response, monitoring of disease progression, prognosis, genetics testing and others through collaborations with leading academic and research institutions.

Core Products

Our initial product, OVA1, is a blood test designed to, in addition to a physician's clinical and imaging assessment of a woman with a pelvic mass, identify women who are at high risk of having a malignant ovarian tumor prior to planned surgery when the physician's independent clinical and radiological evaluation does not indicate malignancy. The Food and Drug Administration (“FDA”) cleared OVA1 in September 2009, and we commercially launched OVA1 in March 2010.

In March 2016, we received FDA clearance for a second-generation biomarker panel known as Overa, which is intended to maintain our product's high sensitivity while improving specificity.

In the fourth quarter of 2018, we launched our new generation of technology, OVA1+. OVA1+ was designed to improve accuracy and reduce false elevations in the intermediate risk area by nearly 40% by leveraging the strengths of OVA1's sensitivity and Overa's specificity. It is a combination of OVA1 and Overa, where Overa is used as a second test for those samples that fall in the intermediate risk zone based on the OVA1 test results. These complimentary tests help drive earlier detection, which in turn lowers overall healthcare costs and reduces inefficiencies in the care pathway. OVA1+ is available through a decentralized platform structure, which will allow other facilities, including hospital networks and super groups, to perform OVA1 locally and upload raw data to us and receive the OVA1 score, enabling increased reach and access in the markets we serve. We plan to eventually pursue larger-scale partnerships to leverage this decentralized platform.

In the first quarter of 2019, Cigna added OVA1®(MIA) to its national preferred coverage list, adding 15 million lives and bringing the Company's total number of covered lives to 167 million as of March 31, 2019.

Table of Contents

Commercialization Strategy

In June 2014, Vermillion launched ASPIRA LABS, Inc. ("ASPIRA LABS"), a Clinical Laboratory Improvement Amendments of 1988 ("CLIA") certified national laboratory based in Austin, Texas, which specializes in applying biomarker-based technologies to address critical needs in the management of gynecologic cancers and disease. ASPIRA LABS provides expert diagnostic services using a state-of-the-art biomarker-based diagnostic algorithm to aid in clinical decision making and advance personalized treatment plans. The lab currently processes our OVA1 and Overa tests, and we plan to expand the testing to other gynecologic conditions with high unmet need.

In March 2015, we entered into a commercial agreement with Quest Diagnostics Incorporated ("Quest Diagnostics"). Pursuant to this agreement, all OVA1 U.S. testing services for Quest Diagnostics customers were transferred to Vermillion's wholly owned subsidiary, ASPIRA LABS. Pursuant to this agreement as amended in March 2018, Quest Diagnostics had agreed to continue providing blood draw and logistics support by transporting specimens to ASPIRA LABS for testing in exchange for a market value fee through March 2019. Per the terms of the agreement, we may not offer to existing or future Quest Diagnostics customers CA 125-II or other tests that Quest Diagnostics offers. We are in the process of renewing this agreement.

Outside the U.S., we have studies in process to validate Overa and OVA1 on local high-risk populations.

We plan to expand the scope of our solutions within the large and growing total addressable market for women's health and gynecologic disease. Currently, we estimate that our solutions in pelvic mass detection, including OVA1+, have a potential market of approximately 300,000 to 400,000 patients in the U.S. In the near-term, our plan is to broaden our commercial focus from ovarian cancer to differential diagnosis of women with a range of gynecological disorders. We estimate that solutions to address benign masses, non-ovarian cancer, non-gynecological mass monitoring and high risk BRCA screening and monitoring have a total addressable market of approximately 1 million to 1.3 million U.S. patients. Our long-term commercialization goals focus around endometriosis, polycystic ovarian syndrome ("PCOS"), functional cyst detection and ovarian cancer recurring monitoring, which we estimate have a U.S. market of up to 17 million patients.

Recent Developments

We are currently in the market expansion and commercial growth phase of our strategy. During the fourth quarter of 2018 and first quarter of 2019, we added additional sales territories to focus on driving adoption of our products. We experienced accelerated growth in April and May 2019, having achieved in excess of 60% year-on-year sales growth following these investments.

Corporate Information

We were originally incorporated in 1993, and we had our initial public offering in 2000. Our executive offices are located at 12117 Bee Caves Road, Building Three, Suite 100, Austin, Texas 78738, and our telephone number is (512) 519-0400. We maintain websites at www.vermillion.com and www.aspiralab.com where general information about us is available. Our websites, and the information contained therein, are not incorporated by reference into this prospectus supplement or the accompanying prospectus, and you should not consider information contained on our websites to form any part of this prospectus supplement or the accompanying prospectus.

Table of Contents

THE OFFERING

Common stock offered by us, excluding underwriter's option to purchase additional shares	shares
Underwriter's option to purchase additional shares	We have granted the underwriter an option to purchase up to an additional shares of common stock from us, at the public offering price, less the underwriting discount, within 30 days from the date of this prospectus supplement.
Common stock outstanding immediately after the offering	shares (or shares if the underwriter exercises its option to purchase additional shares in full)
Use of proceeds	We estimate that the net proceeds to us from the offering will be approximately \$ million, or approximately \$ million if the underwriter exercises its option to purchase additional shares in full, after deducting underwriting discounts and commissions and estimated offering expenses payable by us. We intend to use the net proceeds of the offering for working capital, general corporate purposes and additional commercial investment, including investing in sales and marketing capabilities, additional key strategic hires and product portfolio expansion. See "Use of Proceeds."
Nasdaq Stock Market symbol	VRML
Transfer agent	EQ Shareowner Services
Risk factors	Investing in our common stock involves significant risk. You should consider the risk factors beginning on page S-4 of this prospectus supplement and the "Risk Factors" section contained in the accompanying prospectus before buying any shares of our common stock.
Participation rights	In connection with a private placement in May 2013, we entered into a stockholders agreement with the investors named therein (the "Stockholders Agreement"). Pursuant to, and subject to, the terms of the Stockholders Agreement, certain of the investors received rights to participate in any future equity offerings, including the offering of common stock being made by this prospectus supplement, on the same price and terms as other investors. See "Participation Rights of Certain Investors."
The number of shares of our common stock that will be outstanding immediately after the offering is based on 75,628,200 shares outstanding as of June 25, 2019, and excludes as of that date the following:	
3,140,858 shares of our common stock issuable upon the exercise of outstanding stock options at a weighted average exercise price of \$1.82 per share;	
7,900,000 shares of our common stock reserved for future issuance to employees, directors and consultants pursuant to our stock incentive plans; and	
2,810,338 shares of our common stock issuable upon the exercise of outstanding warrants at an exercise price of \$1.80 per share.	
Except as otherwise indicated, all information in this prospectus supplement assumes no exercise by the underwriter of its option to purchase additional shares.	

Table of Contents

RISK FACTORS

Investing in our common stock involves substantial risks. Please carefully consider the risk factors discussed below, as well as the risk factors described in our [Annual Report on Form 10-K for the year ended December 31, 2018](#), incorporated by reference in this prospectus supplement, and the matters discussed under “Disclosure Regarding Forward-Looking Statements” below, before making an investment decision. The occurrence of any of those risks could materially and adversely affect our business, prospects, financial condition, results of operations or cash flow. Other risks and uncertainties that we do not now consider to be material or of which we are not now aware may become important factors that affect us in the future and could result in a complete loss of your investment.

Management will have broad discretion as to the use of the proceeds that we will receive from the offering and may not use the proceeds effectively.

We have not designated the net proceeds from the offering to be used for any particular purpose. As a result, our management will have broad discretion as to the application of the net proceeds from the offering and you will not have the opportunity as part of your investment decision to assess whether the net proceeds are being used appropriately. Because of the number and variability of factors that will determine our use of the net proceeds from the offering, our management could use them for purposes other than those contemplated at the time of the offering. Our management may use the net proceeds for corporate purposes that may not improve our financial condition or market value.

There is substantial doubt about our ability to continue as a going concern, and this may adversely affect our stock price and our ability to raise capital.

We have incurred significant losses and negative cash flows from operations since inception and have an accumulated deficit of over \$407 million as of December 31, 2018. We also expect to incur a net loss and negative cash flows from operations in 2019. Given these conditions, there is substantial doubt about our ability to continue as a going concern and our independent registered public accounting firm’s report on our financial statements for the year ended December 31, 2018 includes an explanatory paragraph expressing substantial doubt about our ability to continue as a going concern and our independent registered public accounting firm’s report on our financial statements for the year ended December 31, 2018 includes an explanatory paragraph expressing substantial doubt about our ability to continue as a going concern given our recurring net losses and negative cash flows from operations. The substantial doubt about our ability to continue as a going concern may adversely affect our stock price and our ability to raise capital.

We believe that successful achievement of our business objectives may require additional financing in the future. However, additional financing may not be available when needed or on terms acceptable to us. If we are unable to obtain additional capital, we may not be able to continue sales and marketing, research and development, distribution or other operations on the scope or scale of current activity, and that could have a material adverse effect on our business, results of operations and financial condition.

If you purchase our common stock in the offering, you will experience immediate dilution in your investment and you will experience further dilution if we issue additional equity or convertible debt securities in future offerings.

Since the public offering price per share of our common stock is substantially higher than the net tangible book value per share of our common stock, you will suffer immediate and substantial dilution in the net tangible book value of the common stock you purchase in the offering.

In addition, we have a significant number of stock options and warrants outstanding. To the extent that outstanding stock options or warrants have been or may be exercised, investors purchasing our common stock in the offering may experience further dilution.

We may also choose to raise additional capital from time to time, even if we believe we have sufficient funds for our current or future operating plans. To the extent that we raise additional funds through the sale of equity or convertible debt securities, the issuance of such securities will result in dilution to our stockholders. Investors purchasing shares or other securities in the future could have rights superior to existing stockholders. The

Table of Contents

price per share at which we sell additional shares of our common stock, or securities convertible or exchangeable into common stock, in future transactions may be higher or lower than the price per share paid by investors in the offering.

Sales of a significant number of shares of our common stock in the public markets, or the perception that such sales could occur, could depress the market price of our common stock.

Sales of a substantial number of shares of our common stock in the public markets could depress the market price of our common stock and impair our ability to raise capital through the sale of additional equity securities. Pursuant to registration rights agreements with certain existing stockholders, we have registered for resale over 38 million shares of our common stock pursuant to effective shelf registration statements. Other than our directors and executive officers, who beneficially own in the aggregate approximately 3.4 million shares of our outstanding common stock, none of those stockholders have signed a lock-up agreement in connection with the offering. We cannot predict the effect that future sales of our common stock would have on the market price of our common stock.

The liquidity and trading volume of our common stock may be low, and our ownership is concentrated.

The liquidity and trading volume of our common stock has at times been low in the past and may again be low in the future. If the liquidity and trading volume of our common stock is low, this could adversely impact the trading price of our common stock and our stockholders' ability to obtain liquidity in their shares of our common stock. Our stock issuances since May 2013 have primarily involved a significant issuance of stock to a limited number of investors, significantly increasing the concentration of our share ownership in a few holders.

According to publicly available information, we estimate that a total of five persons beneficially own approximately 63% of our outstanding common stock before giving effect to the offering. Under the Stockholders Agreement, two of these persons have the right to designate a director to be nominated by us to serve on our Board of Directors, and one of these persons has exercised this right. As a result, these stockholders will be able to affect the outcome of, or exert significant influence over, all matters requiring stockholder approval, including the election and removal of directors and any change in control involving us. In addition, this concentration of ownership of our common stock could have the effect of delaying or preventing a change in control of us or otherwise discouraging or preventing a potential acquirer from attempting to obtain control of us. This, in turn, could have a negative effect on the market price of our common stock. It could also prevent our stockholders from realizing a premium over the market prices for their shares of common stock. Moreover, the interests of this concentration of ownership may not always coincide with our interests or the interests of other stockholders. The concentration of ownership also contributes to the low trading volume and volatility of our common stock.

Our stock price has been, and may continue to be, highly volatile.

The trading price of our common stock has been highly volatile. During the year ended December 31, 2018, the trading price of our common stock ranged from a high of \$1.99 per share to a low of \$0.27 per share. During the three months ended March 31, 2019, the trading price of our common stock ranged from a high of \$1.40 per share to a low of \$0.30 per share. The trading price of our common stock could continue to be subject to wide fluctuations in price in response to various factors, many of which are beyond our control, including:

failure to significantly increase revenue and volumes of OVA1, OVA1+ or Overa;

actual or anticipated period-to-period fluctuations in financial results;

failure to achieve, or changes in, financial estimates by securities analysts;

announcements or introductions of new products or services or technological innovations by us or our competitors;

publicity regarding actual or potential discoveries of biomarkers by others;

comments or opinions by securities analysts or stockholders;

conditions or trends in the pharmaceutical, biotechnology or life science industries;

Table of Contents

announcements by us of significant acquisitions and divestitures, strategic partnerships, joint ventures or capital commitments;

developments regarding our patents or other intellectual property or that of our competitors;

litigation or threat of litigation;

additions or departures of key personnel;

limited daily trading volume;

our ability to continue as a going concern;

economic and other external factors, disasters or crises; and

our announcement of the offering and future fundraisings.

In addition, the stock market in general and the market for diagnostic technology companies, in particular, have experienced significant price and volume fluctuations that have often been unrelated or disproportionate to the operating performance of those companies. These broad market and industry factors may adversely affect the market price of our common stock, regardless of our operating performance. In the past, following periods of volatility in the market price of a company's securities, securities class action litigation has often been instituted. A securities class action suit against us could result in substantial costs, potential liabilities and the diversion of our attention and our resources.

Failure to meet Nasdaq's continued listing requirements could result in the delisting of our common stock, negatively impact the price of our common stock and negatively impact our ability to raise additional capital.

On July 24, 2018, we received a deficiency letter from the Listing Qualifications Department of The Nasdaq Stock Market stating that, for the preceding 30 consecutive business days, the closing bid price for our common stock was below the minimum \$1.00 per share requirement for continued inclusion on The Nasdaq Capital Market pursuant to Nasdaq Listing Rule 5550(a)(2). On January 22, 2019, we were granted an additional 180-calendar day compliance period to regain compliance with the minimum bid price requirement, and in March 2019, we regained compliance. There is no assurance that we will maintain compliance with this or any of the other Nasdaq continued listing requirements.

If, in the future, we fail to comply with Nasdaq's continued listing requirements, our common stock will be subject to delisting. If that were to occur, our common stock would be subject to rules that impose additional sales practice requirements on broker-dealers who sell our securities. The additional burdens imposed upon broker-dealers by these requirements could discourage broker-dealers from effecting transactions in our common stock. This would adversely affect the ability of investors to trade our securities and would adversely affect the value and liquidity of our common stock. These factors could contribute to lower prices and larger spreads in the bid and ask prices for our common stock. In addition, the failure to use reasonable best efforts to maintain the listing of our common stock would constitute a breach of the Stockholders Agreement. If we seek to implement a reverse stock split in order to remain listed on The Nasdaq Capital Market, the announcement or implementation of such a reverse stock split could negatively affect the price of our common stock.

Our ability to utilize our net operating loss carryforwards and certain other tax attributes may be limited.

We have significant net operating loss ("NOL") carryforwards as of March 31, 2019 for which a full valuation allowance has been provided due to our history of operating losses. Section 382 of the Internal Revenue Code of 1986, as amended (the "Code"), as well as similar state provisions may restrict our ability to use our NOL carryforwards to offset taxable income due to ownership change limitations occurring in the past or that could occur in the future. These ownership changes may also limit the amount of tax credit carryforwards that can be utilized annually to offset future tax liabilities.

Legislation commonly referred to as the Tax Cuts and Jobs Act (H.R. 1) was enacted on December 22, 2017. As a result of the Tax Cuts and Jobs Act, NOLs arising before January 1, 2018 and NOLs arising after January 1, 2018 are subject to different rules. The Company's pre-2018 NOL

Table of Contents

carryforwards will expire in varying amounts from 2023 through 2037, if not utilized, and can offset 100% of future taxable income for regular tax purposes. Any NOLs arising after January 1, 2018 can generally be carried forward indefinitely and can offset up to 80% of future taxable income. The Company's ability to use its NOL carryforwards during this period will be dependent on its ability to generate taxable income, and the pre-2018 NOL carryforwards could expire before the Company generates sufficient taxable income.

We believe we have experienced ownership changes in the past for purposes of these limitations, and we estimate that a substantial portion of our existing federal NOL and tax credit carryforwards are subject to annual limitation. Additional issuances or sales of our common stock, including pursuant to this offering, or certain other transactions involving our stock that are outside of our control, could cause additional ownership changes. Any current or future limitation on the use of our NOL or tax credit carryforwards could, depending on the extent of such limitation, result in us retaining less cash during any year in which have taxable income than we would be entitled to retain if such limitations did not apply, which could adversely impact our operating results or liquidity.

DISCLOSURE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus supplement, the accompanying prospectus and the documents incorporated by reference herein and therein contain forward-looking statements, as defined in the Private Securities Litigation Reform Act of 1995. These statements involve a number of risks and uncertainties. Words such as “may,” “expects,” “intends,” “anticipates,” “believes,” “estimates,” “plans,” “seeks,” “could,” “should,” “continue,” “will,” “potential,” “projects” and similar expressions are intended to identify such forward-looking statements. Readers are cautioned that these forward-looking statements speak only as of the date on which the document in which they appear is filed with the SEC, and, except as required by law, we do not assume any obligation to update, amend or clarify them to reflect events, new information or circumstances occurring after such dates.

Examples of forward-looking statements include the following:

- projections or expectations regarding our future test volumes, revenue, cost of revenue, operating expenses, cash flow, results of operations and financial condition;
- our plan to broaden our commercial focus from ovarian cancer to differential diagnosis of women with a range of gynecological disorders;
- our planned business strategy and the anticipated timing of the implementation thereof;
- plans with respect to our market expansion and growth, including plans to market OVA1, OVA1+ and Overa outside the United States;
- plans to develop new algorithms and molecular diagnostic tests;
- plans to develop a product or tool combining an OVA1 with results of a symptom index;
- plans to establish our own payer coverage for Overa and expand coverage for OVA1;
- intentions to address clinical questions related to early disease detection, treatment response, monitoring of disease progression, prognosis and other issues in the fields of oncology and women’s health;
- plans with respect to ASPIRA IVD, Inc. (“ASPIRA IVD”);
- our planned focus on the execution of four core strategic business drivers in ovarian cancer diagnostics and specialized laboratory services to address unmet medical needs for women faced with gynecologic disease and other conditions and the continued development of our business;
- expectations to increase research and development expenses;
- anticipated efficacy of our products, product development activities and product innovations;
- expected competition in the markets in which we compete;
- plans with respect to ASPIRA LABS, Inc.;
- expectations regarding future services provided by Quest Diagnostics;
- plans to expand our product offerings to additional pelvic disease conditions;
- plans to develop an ethnicity-specific pelvic mass risk assessment;
- plans to launch an offering to detect hereditary breast and ovarian cancer syndrome and carriers of the gene;
- plans regarding the commercialization of Overa;

Table of Contents

plans to develop informatics products and develop and perform LDTs;

plans with respect to the Company's pelvic mass registry, including anticipated sources of funding;

our ability to improve sensitivity and specificity over traditional diagnostic biomarkers;

expectations regarding existing and future collaborations and partnerships, including OVA1, OVA1+ and Overa distribution agreements;

plans regarding future publications;

our continued ability to comply with applicable governmental regulations, expectations regarding pending regulatory submissions and plans to seek regulatory approvals for our tests outside the United States;

our ability to obtain and maintain the regulatory approvals required to market OVA1, OVA1+ and Overa in other countries;

our continued ability to expand and protect our intellectual property portfolio;

anticipated liquidity and capital requirements;

anticipated future losses and our ability to continue as a going concern;

expectations regarding the second disbursement from our financing arrangement, as amended, with the State of Connecticut Department of Economic and Community Development;

expected expenditures, including the expected increase in expenses related to sales and marketing of OVA1, OVA1+ and Overa in 2019;

our ability to use our net operating loss carryforwards;

anticipated future tax liability under U.S. federal and state income tax legislation;

expected market adoption of our diagnostic tests, including OVA1, OVA1+ and Overa;

expectations regarding our ability to launch new products we develop, license, co-market or acquire;

expectations regarding the size of the markets for our products;

expectations regarding raising capital and the amount of financing anticipated to be required to fund our planned operations;

expectations regarding reimbursement for our products, and our ability to obtain such reimbursement, from third-party payers such as private insurance companies and government insurance plans; and

the anticipated use of proceeds from the offering.

These statements involve estimates, assumptions and uncertainties that could cause actual results to differ materially from those expressed in them. Any forward-looking statements are qualified in their entirety by reference to the risk factors described in this prospectus supplement, the accompanying prospectus or in any document incorporated by reference herein or therein.

These factors include, among others: our ability to continue as a going concern; ability to increase the volume of OVA1 or Overa sales; failures by third-party payers to reimburse OVA1 or Overa or changes or variances in reimbursement rates; our ability to secure additional capital on acceptable

Table of Contents

terms to execute our business plan; our ability to comply with Nasdaq's continued listing requirements to remain publicly traded; in the event that we succeed in commercializing OVA1 and Overa outside the United States, the political, economic and other conditions affecting other countries; our ability to continue developing existing technologies; our ability to develop and commercialize additional diagnostic products and achieve market acceptance with respect to these products; our ability to compete successfully; our ability to obtain any regulatory approval required for our future diagnostic products; our or our suppliers' ability to comply with FDA requirements for production, marketing and post-market monitoring of our products; additional costs that may be required to make further improvements to our manufacturing operations; our ability to maintain sufficient or acceptable supplies of immunoassay kits from our suppliers; our ability to continue to develop, protect and promote our proprietary technologies; our ability to use intellectual property directed to diagnose biomarkers; our ability to successfully defend our proprietary technology against third parties; future litigation against us, including infringement of intellectual property and product liability exposure; our ability to retain key employees; business interruptions; changes in healthcare policy; our ability to comply with environmental laws; our ability to comply with the additional laws and regulations that apply to us in connection with the operation of ASPIRA LABS; our ability to comply with FDA regulations that relate to our products and to obtain any FDA clearance or approval required to develop and perform LDTs; ASPIRA IVD's ability to enter into profitable contracts; ASPIRA IVD's ability to maintain effective information systems without significant interruption; and our ability to integrate and achieve anticipated results from any acquisitions or strategic alliances.

You should read this prospectus supplement, the accompanying prospectus, any related free writing prospectus and the documents that we incorporate by reference herein and therein completely and with the understanding that our actual future results may be materially different from what we currently expect. You should not put undue reliance on any forward-looking statement. We believe it is important to communicate our expectations to our investors. However, there may be events in the future that we are not able to accurately predict or that we do not fully control that could cause actual results to differ materially from those expressed or implied in our forward-looking statements.

Table of Contents

USE OF PROCEEDS

We estimate that the net proceeds to us from the offering of common stock being made pursuant to this prospectus supplement, after deducting underwriting discounts and commissions and estimated offering expenses payable by us, will be approximately \$ million (or approximately \$ million if the underwriter exercises its option to purchase additional shares in full).

We intend to use the net proceeds of the offering for working capital, general corporate purposes, and additional commercial investment, including investing in sales and marketing capabilities, additional key strategic hires and product portfolio expansion. The timing and amount of our actual expenditures will be based on many factors, including cash flows from operations and the anticipated growth of our business. As a result, our management will have broad discretion to allocate the net proceeds of the offering. Pending their ultimate use, we intend to invest the net proceeds in short-term, investment-grade, interest-bearing instruments.

DILUTION

If you purchase shares of our common stock in the offering, you will experience immediate dilution to the extent of the difference between the public offering price per share in the offering and our net tangible book value per share immediately after this offering. Net tangible book value per share is equal to the amount of our total tangible assets, less total liabilities, divided by the number of outstanding shares of our common stock. As of March 31, 2019, our net tangible book value was approximately \$3.6 million, or approximately \$0.05 per share.

After giving effect to the sale by us of shares of our common stock in the offering at a public offering price of \$ per share, after deducting underwriter discounts and commissions and estimated offering expenses payable by us, our as adjusted net tangible book value as of March 31, 2019 would have been approximately \$ million, or approximately \$ per share. This represents an immediate increase in net tangible book value of \$ per share to existing stockholders and an immediate dilution of \$ per share to new investors purchasing shares of our common stock in this offering.

The following table illustrates this dilution on a per-share basis (unaudited):

Public offering price per share of common stock	\$
Net tangible book value per share as of March 31, 2019	\$ 0.05
Increase per share attributable to the offering	\$
As adjusted net tangible book value per share after the offering	\$
Dilution per share to new investors participating in the offering	\$

The foregoing table is based on 75,628,200 shares outstanding as of June 25, 2019, and excludes as of that date the following:

3,140,858 shares of our common stock issuable upon the exercise of outstanding stock options at a weighted average exercise price of \$1.82 per share;

7,900,000 shares of our common stock reserved for future issuance to employees, directors and consultants pursuant to our stock incentive plans; and

2,810,338 shares of our common stock issuable upon the exercise of outstanding warrants at an exercise price of \$1.80 per share.

To the extent that any of our outstanding stock options or warrants are exercised, we grant additional stock options or other awards under our stock incentive plans or issue additional warrants, or we issue additional shares of common stock in the future, you will experience further dilution.

DIVIDEND POLICY

We have never declared or paid any cash dividends on our common stock. We currently intend to retain our future earnings, if any, to finance the expansion of our business and do not expect to pay any cash dividends in the foreseeable future. As a result, the success of an investment in our

[Table of Contents](#)

common stock will depend entirely upon any future appreciation. There is no guarantee that our common stock will appreciate in value or even maintain the price at which our stockholders purchased their shares.

PARTICIPATION RIGHTS OF CERTAIN INVESTORS

Pursuant to and subject to the terms of the Stockholders Agreement, certain of the investors party thereto, who beneficially own approximately 42.2% of the outstanding shares of our common stock before giving effect to the offering, have the right to participate in any future offerings of our equity securities, including the offering being made by this prospectus supplement, at the same price and on the same terms as such securities are offered to other investors, subject to certain limitations and exceptions.

[Table of Contents](#)

MATERIAL U.S. FEDERAL INCOME TAX CONSEQUENCES TO NON-U.S. HOLDERS

The following is a summary of material U.S. federal income tax consequences of the purchase, ownership and disposition of shares of our common stock issued pursuant to this offering as of the date hereof. Except where noted, this summary deals only with common stock that is held as a capital asset by a non-U.S. holder (as defined below).

A “non-U.S. holder” means a beneficial owner of shares of our common stock (other than an entity treated as a partnership for U.S. federal income tax purposes) that is not, for U.S. federal income tax purposes, any of the following:

an individual citizen or resident of the United States;

a corporation (or any other entity treated as a corporation for U.S. federal income tax purposes) created or organized in or under the laws of the United States, any state thereof or the District of Columbia;

an estate the income of which is subject to U.S. federal income taxation regardless of its source; or

a trust if it (1) is subject to the primary supervision of a court within the United States and one or more United States persons as defined under the Code have the authority to control all substantial decisions of the trust or (2) has a valid election in effect under applicable U.S. Treasury regulations to be treated as a United States person.

This summary is based upon provisions of the Internal Revenue Code of 1986, as amended (the “Code”), and regulations, rulings, administrative pronouncements of the Internal Revenue Service (the “IRS”) and judicial decisions as of the date hereof. Those authorities may be changed, perhaps with retroactive effect, so as to result in U.S. federal income consequences different from those summarized below. This summary does not address all aspects of U.S. federal income taxes and does not deal with foreign, state, local or other tax considerations that may be relevant to non-U.S. holders in light of their particular circumstances, including the impact of the Medicare contribution tax on net investment income. In addition, it does not represent a detailed description of the U.S. federal income tax consequences applicable to you if you are subject to special treatment under the U.S. federal income tax laws (including if you are a U.S. expatriate, foreign pension fund, financial institution, holding our common stock as part of a hedge, straddle, or other risk reduction strategy or as part of a conversion transaction or other integrated investment, subject to special tax accounting rules as a result of any item of gross income with respect to stock being taken into account in an applicable financial statement, “controlled foreign corporation,” “passive foreign investment company” or a partnership or other pass-through entity for U.S. federal income tax purposes). We cannot assure you that a change in law or a contrary position taken by the IRS or a court will not alter significantly the tax considerations that we describe in this summary.

If a partnership (or other entity treated as a partnership for U.S. federal income tax purposes) holds shares of our common stock, the tax treatment of a partner will generally depend upon the status of the partner (including certain determinations made at the partners level) and the activities of the partnership. If you are a partnership, or a partner of a partnership, holding our common stock, you should consult your tax advisors.

If you are considering the purchase of our common stock, you should consult your own tax advisors concerning the particular U.S. federal income tax consequences to you of the purchase, ownership and disposition of our common stock, as well as the consequences to you arising under other U.S. federal tax laws and the laws of any other taxing jurisdiction.

Dividends

We have never paid cash dividends on our common stock and we do not anticipate paying any cash dividends in the foreseeable future. See “Dividend Policy.” If we make a distribution of cash or other property (other than certain pro rata distributions of our stock) in respect of shares of our common stock, the distribution generally will be treated as a dividend for U.S. federal income tax purposes to the extent it is paid from our current

Table of Contents

or accumulated earnings and profits, as determined under U.S. federal income tax principles. Any portion of a distribution that exceeds our current and accumulated earnings and profits generally will be treated first as a tax-free return of capital, causing a reduction in the adjusted tax basis of a non-U.S. holder's common stock, and to the extent the amount of the distribution exceeds a non-U.S. holder's adjusted tax basis in shares of our common stock, the excess will be treated as gain from the taxable disposition of shares of our common stock (the tax treatment of which is discussed below under "—Gain on Disposition of Common Stock").

Dividends paid to a non-U.S. holder generally will be subject to withholding of U.S. federal income tax at a 30% rate or such lower rate as may be specified by an applicable income tax treaty. However, dividends that are effectively connected with the conduct of a trade or business by the non-U.S. holder within the United States (and, if required by an applicable income tax treaty, are attributable to a U.S. permanent establishment) are not subject to the withholding tax, provided certain certification (on IRS Form W-8ECI) and disclosure requirements are satisfied. Instead, such dividends are subject to U.S. federal income tax on a net income basis in the same manner as if the non-U.S. holder were a United States person as defined under the Code. Any such effectively connected dividends received by a foreign corporation may be subject to an additional "branch profits tax" at a 30% rate or such lower rate as may be specified by an applicable income tax treaty.

A non-U.S. holder who wishes to claim the benefit of an applicable treaty rate and avoid backup withholding, as discussed below, for dividends will be required (a) to provide the applicable withholding agent with a properly executed IRS Form W-BEN or Form W-8BEN-E (or other applicable form) certifying under penalty of perjury that such holder is not a United States person as defined under the Code and is eligible for treaty benefits or (b) if our common stock is held through certain intermediaries, to satisfy the relevant certification requirements of applicable Treasury regulations. Special certification and other requirements apply to certain non-U.S. holders that are pass-through entities rather than corporations or individuals.

A non-U.S. holder eligible for a reduced rate of U.S. federal withholding tax pursuant to an income tax treaty may obtain a refund of any excess amounts withheld by timely filing an appropriate claim for refund with the IRS. Non-U.S. holders should consult their tax advisors regarding their entitlement to benefits under any applicable income tax treaty.

Gain on Taxable Disposition of Common Stock

Subject to the discussion of backup withholding and FATCA below, any gain realized by a non-U.S. holder on the sale or other taxable disposition of our common stock generally will not be subject to U.S. federal income tax unless:

the gain is effectively connected with a trade or business of the non-U.S. holder in the United States (and, if required by an applicable income tax treaty, is attributable to a U.S. permanent establishment of the non-U.S. holder);

the non-U.S. holder is an individual who is present in the United States for 183 days or more in the taxable year of that disposition, and certain other conditions are met; or

we are or have been a "United States real property holding corporation" for U.S. federal income tax purposes and certain other conditions are met.

A non-U.S. holder described in the first bullet point immediately above will be subject to tax on the gain derived from the sale or other taxable disposition on a net income basis in the same manner as if the non-U.S. holder were a United States person as defined under the Code. In addition, if any non-U.S. holder described in the first bullet point immediately above is a foreign corporation, the gain realized by such non-U.S. holder may be subject to an additional "branch profits tax" at a 30% rate or such lower rate as may be specified by an applicable income tax treaty. An individual non-U.S. holder described in the second bullet point immediately above will be subject to a 30% (or such lower rate as may be specified by an applicable income tax treaty) tax on the gain derived from the sale or other taxable disposition, which gain may be offset by U.S. source capital losses even though the individual is not considered a resident of the United States, provided the non-U.S. holder has timely filed U.S. federal income tax returns with respect to such losses.

Table of Contents

Generally, a corporation is a “United States real property holding corporation” if the fair market value of its U.S. real property interests equals or exceeds 50% of the sum of the fair market value of its worldwide real property interests and its other assets used or held for use in a trade or business (all as determined for U.S. federal income tax purposes). We believe we currently are not, and do not anticipate becoming, a “United States real property holding corporation. Because the determination of whether we are a “United States real property holding corporation” depends, however, on the fair market value of our U.S. real property interests relative to the fair market value of our non-U.S. real property interests and our other business assets, there can be no assurance we currently are not a “United States real property holding corporation” or will not become one in the future. If we are or become a “United States real property holding corporation,” however, so long as our common stock is “regularly traded” (as defined in applicable Treasury regulations) on an established securities market during the calendar year in which the sale or other taxable disposition occurs, gain arising from a non-U.S. holder’s sale or other taxable disposition of our common stock will be subject to U.S. federal income tax only if such non-U.S. holder holds or held, actually or constructively, more than 5% of our common stock at any time during the shorter of the five-year period preceding the date of disposition or the holder’s holding period.

Non-U.S. holders should consult their tax advisors regarding potentially applicable income tax treaties that may provide for different rules.

Information Reporting and Backup Withholding

Distributions of dividends paid to a non-U.S. holder and the amount of any tax withheld with respect to such distributions generally will be reported to the IRS. Copies of the information returns reporting such distributions and any withholding may also be made available to the tax authorities in the country in which the non-U.S. holder resides under the provisions of an applicable income tax treaty.

A non-U.S. holder will not be subject to backup withholding on dividends received if such holder certifies under penalty of perjury that it is a non-U.S. holder (and the payor does not have actual knowledge or reason to know that such holder is a United States person as defined under the Code), or such holder otherwise establishes an exemption.

Information reporting and, depending on the circumstances, backup withholding will apply to the proceeds of a sale or other disposition of our common stock made within the United States or conducted through certain U.S.-related financial intermediaries, unless the beneficial owner certifies under penalty of perjury that it is a non-U.S. holder (and the payor does not have actual knowledge or reason to know that the beneficial owner is a United States person as defined under the Code), or such owner otherwise establishes an exemption.

Backup withholding is not an additional tax and any amounts withheld under the backup withholding rules will be allowed as a refund or a credit against a non-U.S. holder’s U.S. federal income tax liability provided the required information is timely furnished to the IRS.

Additional Withholding Requirements under FATCA

Under Sections 1471 through 1474 of the Code (such Sections commonly referred to as “FATCA”), a 30% U.S. federal withholding tax may apply to any dividends paid on our common stock paid to (i) a “foreign financial institution” (as specifically defined in the Code) which does not provide sufficient documentation, typically on IRS Form W-8BEN-E, evidencing either (x) an exemption from FATCA or (y) its compliance (or deemed compliance) with FATCA (which may alternatively be in the form of compliance with an intergovernmental agreement with the United States) in a manner which avoids withholding, or (ii) a “non-financial foreign entity” (as specifically defined in the Code) which does not provide sufficient documentation, typically on IRS Form W-8BEN-E, evidencing either (x) an exemption from FATCA or (y) adequate information regarding certain substantial U.S. beneficial owners of such entity (if any). If a dividend payment is both subject to withholding under FATCA and subject to the withholding tax discussed above under “—Dividends,” the withholding under FATCA may be credited against, and therefore reduce, such other withholding tax. Current provisions of the Code and Treasury Regulations that govern FATCA treat gross proceeds from the sale or other disposition of instruments that can produce U.S.-source interest (such as our common stock) as subject to FATCA withholding after December 31, 2018. However, under recently proposed Treasury Regulations (the preamble to which specifies that taxpayers are permitted to rely on them pending finalization), such gross proceeds are not subject to FATCA withholding. You should consult your own tax advisors regarding these requirements and whether they may be relevant to your ownership and disposition of our common stock.

[Table of Contents](#)

UNDERWRITING

William Blair & Company, L.L.C. is acting as sole underwriter for the offering. Subject to the terms and conditions set forth in an underwriting agreement between us and the underwriter, we have agreed to sell to the underwriter, and the underwriter has agreed to purchase from us, _____ shares of our common stock. The underwriter has agreed to purchase all of the shares sold under the underwriting agreement if any of these shares are purchased.

We have granted to the underwriter an option, exercisable for 30 calendar days from the date of this prospectus, to purchase up to _____ additional shares of common stock at the public offering price listed on the cover of this prospectus supplement, less underwriting discounts and commissions. Any shares issued or sold under the option will be issued and sold on the same terms and conditions as the other shares that are the subject of this offering.

We have agreed to indemnify the underwriter against certain liabilities, including liabilities under the Securities Act of 1933, as amended (the "Securities Act"), relating to losses or claims resulting from material misstatements in or omissions from this prospectus supplement, the registration statement of which this prospectus supplement is a part, certain free writing prospectuses that may be used in the offering and in any marketing materials used in connection with this offering and to contribute to payments the underwriter may be required to make in respect of those liabilities.

Commissions and Discounts

The underwriter has advised us that it proposes initially to offer the shares to the public at the public offering price set forth on the cover page of this prospectus supplement and to dealers at that price less a concession not in excess of \$ _____ per share. After the public offering, the public offering price, concession or any other term of this offering may be changed.

The following table shows the public offering price, underwriting discount and proceeds before expenses to us. The information assumes either no exercise or full exercise by the underwriter of its option to purchase additional shares.

	Per Share	Without Option	With Option
Public offering price	\$	\$	\$
Underwriting discount			
Proceeds, before expenses, to us			

The underwriting agreement provides that the obligation of the underwriter to pay for and accept delivery of the shares of common stock offered by this prospectus supplement are subject to the approval of certain legal matters by its counsel and to certain other conditions. The underwriter is obligated to take and pay for all of the shares of common stock offered by this prospectus supplement if any such shares are taken. However, the underwriter is not required to take or pay for the shares covered by the underwriter's option to purchase additional shares described above. The underwriter reserves the right to withdraw, cancel or modify offers to the public and to reject orders in whole or in part.

The estimated offering expenses payable by us, exclusive of the underwriting discounts and commissions, are approximately \$ _____ million, which includes legal, accounting and printing costs and various other fees associated with the registration and listing of our common stock. We have agreed to reimburse the underwriter for certain additional expenses incurred in connection with this offering in an amount up to \$150,000.

No Sales of Similar Securities

We have agreed with the underwriter, subject to specified exceptions not to (i) offer, sell, contract to sell, pledge, grant any option to purchase, make any short sale or otherwise transfer or dispose of, directly or indirectly, or file with the SEC a registration statement under the Securities Act

Table of Contents

relating to, any shares of our common stock or any securities that are substantially similar to our common stock, including but not limited to any options or warrants to purchase shares of our common stock or any securities that are convertible into or exchangeable for, or that represent the right to receive, common stock or any such substantially similar securities, or publicly disclose the intention to make any offer, sale, pledge, disposition or filing or (ii) enter into any swap or other agreement that transfers, in whole or in part, any of the economic consequences of ownership of our common stock, or any such other securities, whether any such transaction described in clause (i) or (ii) above is to be settled by delivery of our common stock or such other securities, in cash or otherwise, without the prior written consent of the underwriter.

Our directors and executive officers have agreed with the underwriter, subject to specified exceptions, not to (i) offer, pledge, announce the intention to sell, sell, contract to sell, sell any option or contract to purchase, purchase any option or contract to sell, grant any option, right or warrant to purchase, make any short sale or otherwise transfer or dispose of, directly or indirectly, any shares of our common stock or any securities convertible into, exercisable or exchangeable for or that represent the right to receive our common stock (including without limitation, our common stock which may be deemed to be beneficially owned in accordance with the rules and regulations of the SEC and securities which may be issued upon exercise of a stock option or warrant), whether now owned or hereafter acquired, or (ii) enter into any swap or other agreement that transfers, in whole or in part, any of the economic consequences of ownership of our common stock, whether any such transaction is to be settled by delivery of our common stock or such other securities, in cash or otherwise. These restrictions will apply through and including the date that is 90 days after the date of this prospectus supplement.

Listing

Our common stock is listed on the Nasdaq Capital Market under the symbol "VRML."

Price Stabilization, Short Positions and Penalty Bids

Until the distribution of the shares is completed, SEC rules may limit the underwriter and selling group members from bidding for and purchasing shares of our common stock. However, the underwriter may engage in transactions that stabilize the price of our common stock, such as bids or purchases to peg, fix or maintain that price.

In connection with this offering, the underwriter may purchase and sell shares of our common stock in the open market. These transactions may include short sales, purchases on the open market to cover positions created by short sales and stabilizing transactions. Short sales involve the sale by the underwriter of a greater number of shares than it is required to purchase in this offering. "Covered" short sales are sales made in an amount not greater than the underwriter's option to purchase additional shares described above. The underwriter may close out any covered short position by either exercising this option or purchasing shares in the open market. In determining the source of shares to close out the covered short position, the underwriter will consider, among other things, the price of shares available for purchase in the open market as compared to the price at which it may purchase shares through this option. "Naked" short sales are sales in excess of this option. The underwriter must close out any naked short position by purchasing shares in the open market. A naked short position is more likely to be created if the underwriter is concerned that there may be downward pressure on the price of our common stock in the open market after pricing that could adversely affect investors who purchase in this offering. Stabilizing transactions consist of various bids for or purchases of shares of our common stock made by the underwriter in the open market prior to the closing of this offering.

Similar to other purchase transactions, the underwriter's purchases to cover short sales may have the effect of raising or maintaining the market price of our common stock or preventing or retarding a decline in the market price of our common stock. As a result, the price of our common stock may be higher than the price that might otherwise exist in the open market. The underwriter may conduct these transactions on the Nasdaq Capital Market, in the over-the-counter market or otherwise.

Neither we nor the underwriter make any representation or prediction as to the direction or magnitude of any effect that the transactions described above may have on the price of our common stock. In addition, neither we nor the underwriter make any representation that the underwriter will engage in these transactions or that these transactions, once commenced, will not be discontinued without notice.

Table of Contents

Electronic Offer, Sale and Distribution of Shares

In connection with this offering, the underwriter or securities dealers may distribute prospectuses by electronic means, such as e-mail. In addition, the underwriter may facilitate Internet distribution for this offering to certain of its Internet subscription customers. The underwriter may allocate a limited number of shares for sale to its online brokerage customers. An electronic prospectus is available on the Internet website maintained by the underwriter. The information on the website of such underwriter is not part of this prospectus.

Other Relationships

The underwriter and its affiliates are full service financial institutions engaged in various activities, which may include securities trading, commercial and investment banking, financial advisory, investment management, investment research, principal investment, hedging, financing and brokerage activities. The underwriter and its affiliates may engage in from time to time in the future certain investment banking and other commercial dealings in the ordinary course of business with us or our affiliates, for which they have received and may continue to receive customary fees and commissions. In addition, William Blair & Company, L.L.C. is acting as our financial advisor and we have granted them a right to participate in any public or private offering of securities by us, subject to certain limitations.

In the ordinary course of their various business activities, the underwriter and its affiliates may make or hold a broad array of investments and actively trade debt and equity securities (or related derivative securities) and financial instruments (including bank loans) for their own account and for the accounts of their customers, and such investment and securities activities may involve securities and/or instruments of the issuer. The underwriter and its affiliates may also make investment recommendations and/or publish or express independent research views in respect of such securities or instruments and may at any time hold, or recommend to clients that they acquire, long and/or short positions in such securities and instruments.

Selling Restrictions

Canada

Resale Restrictions

The distribution of shares of our common stock in Canada is being made only in the provinces of Ontario, Quebec, Alberta and British Columbia on a private placement basis exempt from the requirement that we prepare and file a prospectus with the securities regulatory authorities in each province where trades of these securities are made. Any resale of shares of our common stock in Canada must be made under applicable securities laws which may vary depending on the relevant jurisdiction, and which may require resales to be made under available statutory exemptions or under a discretionary exemption granted by the applicable Canadian securities regulatory authority. Purchasers are advised to seek legal advice prior to any resale of the securities.

Representations of Canadian Purchasers

By purchasing shares of our common stock in Canada and accepting delivery of a purchase confirmation, a purchaser is representing to us and the dealer from whom the purchase confirmation is received that:

the purchaser is entitled under applicable provincial securities laws to purchase the shares of common stock without the benefit of a prospectus qualified under those securities laws as it is an “accredited investor” as defined under National Instrument 45-106—Prospectus Exemptions,

Table of Contents

the purchaser is a “permitted client” as defined in National Instrument 31-103—Registration Requirements, Exemptions and Ongoing Registrant Obligations,

where required by law, the purchaser is purchasing as principal and not as agent, and

the purchaser has reviewed the text above under Resale Restrictions.

Conflicts of Interest

Canadian purchasers are hereby notified that the underwriter is relying on the exemption set out in section 3A.3 or 3A.4, if applicable, of National Instrument 33-105—*Underwriting Conflicts* from having to provide certain conflict of interest disclosure in this document.

Statutory Rights of Action

Securities legislation in certain provinces or territories of Canada may provide a purchaser with remedies for rescission or damages if the offering memorandum (including any amendment thereto) such as this document contains a misrepresentation, provided that the remedies for rescission or damages are exercised by the purchaser within the time limit prescribed by the securities legislation of the purchaser’s province or territory. The purchaser of these securities in Canada should refer to any applicable provisions of the securities legislation of the purchaser’s province or territory for particulars of these rights or consult with a legal advisor.

Enforcement of Legal Rights

All of our directors and officers as well as the experts named herein may be located outside of Canada and, as a result, it may not be possible for Canadian purchasers to effect service of process within Canada upon us or those persons. All or a substantial portion of our assets and the assets of those persons may be located outside of Canada and, as a result, it may not be possible to satisfy a judgment against us or those persons in Canada or to enforce a judgment obtained in Canadian courts against us or those persons outside of Canada.

Taxation and Eligibility for Investment

Canadian purchasers of shares of our common stock should consult their own legal and tax advisors with respect to the tax consequences of an investment in the shares of common stock in their particular circumstances and about the eligibility of shares of our common stock for investment by the purchaser under relevant Canadian legislation.

European Economic Area

In relation to each Member State of the European Economic Area that has implemented the Prospectus Directive, each referred to as a Relevant Member State, an offer to the public of any shares of our common stock may not be made in that Relevant Member State, except that an offer to the public in that Relevant Member State of any shares of our common stock may be made at any time under the following exemptions under the Prospectus Directive, if they have been implemented in that Relevant Member State:

- (a) to any legal entity which is a “qualified investor” as defined in the Prospectus Directive;
- (b) to fewer than 150 natural or legal persons (other than qualified investors as defined in the Prospectus Directive), subject to obtaining the prior consent of the underwriter for any such
- (c) in any other circumstances falling within Article 3(2) of the Prospectus Directive,

provided that no such offer of shares of our common stock shall result in a requirement for the publication by us or any underwriter of a prospectus pursuant to Article 3 of the Prospectus Directive.

Table of Contents

For the purposes of this provision, the expression an “offer to the public” in relation to any shares of our common stock in any Relevant Member State means the communication in any form and by any means of sufficient information on the terms of the offer and any shares of our common stock to be offered so as to enable an investor to decide to purchase any shares of our common stock, as the same may be varied in that Relevant Member State by any measure implementing the Prospectus Directive in that Relevant Member State and the expression “Prospectus Directive” means Directive 2003/71/EC (and amendments thereto, including by Directive 2010/73/EU) and includes any relevant implementing measure in each Relevant Member State.

United Kingdom

The underwriter has represented and agreed that:

- (a) it has not made or will not make an offer of shares of our common stock to the public in the United Kingdom within the meaning of section 102B of the Financial Services and Markets Act 2000 (as amended) (FSMA) except to legal entities which are authorized or regulated to operate in the financial markets or, if not so authorized or regulated, whose corporate purpose is solely to invest in securities or otherwise in circumstances which do not require the publication by us of a prospectus pursuant to the Prospectus Rules of the Financial Services Authority;
- (b) it has only communicated or caused to be communicated and will only communicate or cause to be communicated an invitation or inducement to engage in investment activity (within the meaning of section 21 of FSMA) to persons who have professional experience in matters relating to investments falling within Article 19(5) of the Financial Services and Markets Act 2000 (Financial Promotion) Order 2005 or in circumstances in which section 21 of FSMA does not apply to us; and
- (c) it has complied and will comply with all applicable provisions of the FSMA with respect to anything done by it in relation to the securities in, from or otherwise involving the United Kingdom.

Hong Kong

No securities have been offered or sold, and no securities may be offered or sold, in Hong Kong, by means of any document, other than to persons whose ordinary business is to buy or sell shares or debentures, whether as principal or agent; or to “professional investors” as defined in the Securities and Futures Ordinance (Cap. 571) of Hong Kong and any rules made under that Ordinance; or in other circumstances which do not result in the document being a “prospectus” as defined in the Companies Ordinance (Cap. 32) of Hong Kong or which do not constitute an offer to the public within the meaning of the Companies Ordinance (Cap. 32) of Hong Kong. No document, invitation or advertisement relating to the securities has been issued or may be issued or may be in the possession of any person for the purpose of issue (in each case whether in Hong Kong or elsewhere), which is directed at, or the contents of which are likely to be accessed or read by, the public of Hong Kong (except if permitted under the securities laws of Hong Kong) other than with respect to securities which are or are intended to be disposed of only to persons outside Hong Kong or only to “professional investors” as defined in the Securities and Futures Ordinance (Cap. 571) of Hong Kong and any rules made under that Ordinance.

This prospectus has not been registered with the Registrar of Companies in Hong Kong. Accordingly, this prospectus may not be issued, circulated or distributed in Hong Kong, and the securities may not be offered for subscription to members of the public in Hong Kong. Each person acquiring the securities will be required, and is deemed by the acquisition of the securities, to confirm that he is aware of the restriction on offers of the securities described in this prospectus and the relevant offering documents and that he is not acquiring, and has not been offered any securities in circumstances that contravene any such restrictions.

Singapore

This prospectus has not been, and will not be, registered as a prospectus with the Monetary Authority of Singapore. Accordingly, this prospectus and any other document or material in connection with the offer or sale, or invitation for subscription or purchase, of the shares of common stock may not be circulated or distributed, nor may the shares of common stock be offered or sold, or be made the subject of an invitation for subscription or purchase, whether directly or indirectly, to persons in Singapore other than (i) to an institutional investor (as defined in Section 4A of the Securities and Futures Act, Chapter 289 of Singapore (the “SFA”)) pursuant to Section 274 of the SFA, (ii) to a relevant person (as defined in Section 275(2) of the SFA) pursuant to Section 275(1), or any person pursuant to Section 275(1A), and in accordance with the conditions specified in Section 275 of the SFA or (iii) otherwise pursuant to, and in accordance with the conditions of, any other applicable provision of the SFA, in each case subject to compliance with conditions set forth in the SFA.

Table of Contents

Where the common stock is subscribed or purchased under Section 275 of the SFA by a relevant person which is:

- (a) a corporation (which is not an accredited investor (as defined in Section 4A of the SFA)) the sole business of which is to hold investments and the entire share capital of which is owned by one or more individuals, each of whom is an accredited investor; or
- (b) a trust (where the trustee is not an accredited investor) whose sole purpose is to hold investments and each beneficiary of the trust is an individual who is an accredited investor,

securities (as defined in Section 239(1) of the SFA) of that corporation or the beneficiaries' rights and interest (howsoever described) in that trust shall not be transferred within six months after that corporation or that trust has acquired the common stock pursuant to an offer made under Section 275 of the SFA except:

- (a) to an institutional investor pursuant to Section 274 of the SFA or to a relevant person pursuant to Section 275(1) of the SFA, or to any person arising from an offer referred to in Section 275(1A) or Section 276(4)(i)(B) of the SFA;
- (b) where no consideration is or will be given for the transfer;
- (c) where the transfer is by operation of law;
- (d) as specified in Section 276(7) of the SFA; or
- (e) as specified in Regulation 32 of the Securities and Futures (Offers of Investments) (Shares and Debentures) Regulations 2005 of Singapore.

Switzerland

The shares of common stock may not be publicly offered in Switzerland and will not be listed on the SIX Swiss Exchange, or the SIX, or on any other stock exchange or regulated trading facility in Switzerland. This document has been prepared without regard to the disclosure standards for issuance prospectuses under art. 652a or art. 1156 of the Swiss Code of Obligations or the disclosure standards for listing prospectuses under art. 27 ff. of the SIX Listing Rules or the listing rules of any other stock exchange or regulated trading facility in Switzerland. Neither this document nor any other offering or marketing material relating to the shares of common stock or the offering may be publicly distributed or otherwise made publicly available in Switzerland.

Neither this document nor any other offering or marketing material relating to the offering, or the shares of common stock have been or will be filed with or approved by any Swiss regulatory authority. In particular, this document will not be filed with, and the offer of common stock will not be supervised by, the Swiss Financial Market Supervisory Authority FINMA, and the offer of common stock has not been and will not be authorized under the Swiss Federal Act on Collective Investment Schemes, or CISA. Accordingly, no public distribution, offering or advertising, as defined in CISA, its implementing ordinances and notices, and no distribution to any non-qualified investor, as defined in CISA, its implementing ordinances and notices, shall be undertaken in or from Switzerland, and the investor protection afforded to acquirers of interests in collective investment schemes under CISA does not extend to acquirers of common stock.

Table of Contents

United Arab Emirates

This offering has not been reviewed, approved or licensed by the Central Bank of the United Arab Emirates (the “UAE”), the Emirates Securities and Commodities Authority of the UAE (the “SCA”) and/or any other relevant licensing authority in the UAE including any licensing authority incorporated under the laws and regulations of any of the free zones established and operating in the territory of the UAE (the “Free Zones”), in particular the Dubai Financial Services Authority (the “DFSA”), a regulatory authority of the Dubai International Financial Centre (the “DIFC”) or the Financial Services Regulatory Authority (the “FSRA”), a regulatory authority of Abu Dhabi Global Market (“ADGM”).

This offering is not intended to, and does not, constitute an offer, sale or delivery of shares or other securities under the laws of the UAE. The common stock has not been and will not be registered with or licensed by the SCA or with the UAE Central Bank, the Dubai Financial Market, the Abu Dhabi Securities Exchange or with any other UAE regulatory authority or exchange.

The issue and/or sale of the common stock has not been approved or licensed by the SCA, the UAE Central Bank or any other relevant licensing authority in the UAE, and does not constitute a public offer of securities in the UAE, DIFC, ADGM and/or any other Free Zone in accordance with the Commercial Companies Law, Federal Law No 2 of 2015 (as amended), the Markets Rules of the DFSA, (the “DFSA Markets Rules”), the Markets Rules of the FSRA (the “FSRA Markets Rules”) and/or Nasdaq Dubai Listing Rules or under any other law of the UAE. The common stock may not be offered to the public in the UAE and/or any of the Free Zones.

No marketing or promotion of the common stock has been or will be made from within the UAE and no sale of or subscription for the common stock may or will be consummated within the UAE. It should not be assumed that Vermillion, Inc., Vermillion, Inc.’s advisors, their advisors or any other person is a licensed broker, dealer or investment adviser under the laws of the UAE or that they advise as to the appropriateness of investing in or purchasing or selling securities or other financial products.

This offering is not intended to constitute a financial promotion, an offer, sale or delivery of shares or other securities under the DIFC Markets Law (DIFC Law No. 1 of 2012, as amended) (the “Markets Law”), the DFSA Markets Rules, the Collective Investment Law 2010 (DIFC Law No. 2 of 2010) (the “Collective Investment Law”), the ADGM Financial Services and Markets Regulations 2015 (the “FSMR”), the FSRA Markets Rules, the Funds Rules of the FSRA (“FSRA Funds Rules”), or any other laws and regulations of the DIFC, the DFSA, ADGM or the FSRA.

This offering and the issue or transfer of any securities related to it have not been approved or licensed by the DFSA, and do not constitute an offer of securities in the DIFC in accordance with the Markets Law or the DFSA Markets Rules or the Collective Investment Law or any other laws and regulations of the DIFC or the DFSA. This offering and the issue or transfer of any securities related to it have not been approved or licensed by the FSRA, and do not constitute an offer of securities in ADGM in accordance with the FSMR or the FSRA Markets Rules or the FSRA Funds Rules or any other laws and regulations of ADGM or the FSRA.

Notice to Prospective Investors in Israel

The securities offered by this prospectus supplement and the accompanying prospectus have not been approved or disapproved by the Israeli Securities Authority (the “ISA”), nor have such securities been registered for sale in Israel. The ISA has not issued permits, approvals or licenses in connection with the offering or publishing this prospectus supplement and the accompanying prospectus; nor has it authenticated the details included herein, confirmed their reliability or completeness, or rendered an opinion as to the quality of the securities being offered. The ordinary shares will not be offered or sold, directly or indirectly, to the public in Israel, except that the underwriter may offer and sell such shares to Israeli investors who qualify, in accordance with the Israeli Securities Law as “qualified investors” (as defined in the First Appendix to the Israeli Securities Law) and completed and signed a questionnaire regarding such qualification and delivered it to the underwriter. Any resale in Israel, directly or indirectly, to the public of the securities offered by this prospectus supplement and the accompanying prospectus is subject to restrictions on transferability and must be effected only in compliance with the Israeli securities laws and regulations.

LEGAL MATTERS

Certain legal matters relating to the validity of the shares of common stock offered hereby will be passed upon by Sidley Austin LLP, Chicago, Illinois. Michael A. Gordon, a stockholder of the Company, is a partner in such firm. As of the date of this prospectus supplement, Mr. Gordon beneficially owned less than 1% of the outstanding shares of our common stock. Certain legal matters in connection with the offering will be passed upon for the underwriter by Latham & Watkins LLP, Chicago, Illinois.

EXPERTS

The consolidated financial statements as of December 31, 2018 and 2017 and for the years then ended incorporated by reference in this prospectus supplement and the accompanying prospectus have been so incorporated in reliance on the report of BDO USA, LLP, an independent registered public accounting firm (the report on the consolidated financial statements contains an explanatory paragraph regarding the Company's ability to continue as a going concern), incorporated herein and therein by reference, given on the authority of said firm as experts in auditing and accounting.

Table of Contents

WHERE YOU CAN FIND MORE INFORMATION

We file annual, quarterly and current reports, proxy statements and other information with the SEC. We have filed with the SEC a registration statement on Form S-3 under the Securities Act with respect to the shares of common stock we are offering under this prospectus supplement. This prospectus supplement and the accompanying prospectus do not contain all of the information set forth in the registration statement and the exhibits to the registration statement. For further information with respect to us and the shares of common stock we are offering under this prospectus supplement, we refer you to the registration statement and the exhibits filed as a part of the registration statement. You may read any document we file with the SEC, including reports, proxy statements and information statements, on the SEC's website at www.sec.gov. Our SEC filings are also available to the public at our website at www.vermillion.com.

Information on any Vermillion website, any subsection, page or other subdivision of any Vermillion website or any website linked to by content on any Vermillion website is not part of this prospectus, and you should not rely on that information unless that information is also in this prospectus supplement or the accompanying prospectus or incorporated by reference herein or therein.

IMPORTANT INFORMATION INCORPORATED BY REFERENCE

The SEC allows us to incorporate by reference into this prospectus supplement the information contained in other documents we file with the SEC, which means that we can disclose important information to you by referring you to those documents. Any statement contained in any document incorporated or deemed to be incorporated by reference into this prospectus supplement shall be deemed to be modified or superseded, for purposes of this prospectus supplement, to the extent that a statement contained in or omitted from this prospectus supplement, or in any other subsequently filed document that also is or is deemed to be incorporated by reference into this prospectus supplement, modifies or supersedes such statement. Any such statement so modified or superseded shall not be deemed, except as so modified or superseded, to constitute a part of this prospectus supplement. We incorporate by reference the documents listed below, which have been filed by us and any future filings we make with the SEC under Section 13(a), 13(c), 14 or 15(d) of the Securities Exchange Act of 1934, as amended (other than current reports furnished under Item 2.02 or Item 7.01 of Form 8-K and exhibits filed on such form that are related to such items unless such Form 8-K expressly provides to the contrary) until the offering is completed:

- (a) Our [Annual Report on Form 10-K for the fiscal year ended December 31, 2018](#), filed with the SEC on March 28, 2019, as amended by the [Form 10-K/A, filed with the SEC on April 29, 2019](#);
- (b) The [Quarterly Report on Form 10-Q for the quarterly period ended March 31, 2019](#), filed with the SEC on May 14, 2019;
- (c) Our [Current Report on Form 8-K filed with the SEC on June 24, 2019](#); and
- (d) The description of our common stock set forth in the [Registration Statement on Form 8-A filed with the SEC on July 6, 2010](#) (File No. 001-34810), including any amendments or reports filed for the purpose of updating such description.

Upon written or oral request, we will provide without charge to each person, including any beneficial owner, to whom a copy of the prospectus is delivered a copy of the documents incorporated by reference into this prospectus supplement (other than exhibits to such documents unless such exhibits are specifically incorporated by reference herein). You may request a copy of these filings, at no cost, by writing or telephoning us at the following address:

Vermillion, Inc.
12117 Bee Caves Road, Building Three, Suite 100
Austin, Texas 78738
(512) 519-0400
Attn: Corporate Secretary

[Table of Contents](#)

PROSPECTUS



\$50,000,000 Aggregate Offering Price of

COMMON STOCK, PREFERRED STOCK, DEBT SECURITIES, WARRANTS, RIGHTS AND UNITS

Vermillion, Inc., a Delaware corporation ("Vermillion"), may offer and sell from time to time, in one or more offerings, common stock, preferred stock, debt securities, warrants, rights and units for an aggregate initial offering price up to \$50,000,000 in amounts, at prices and on terms that Vermillion will determine at the time of the offering.

This prospectus describes general terms that apply to these securities. When we decide to sell a particular class or series of these securities, we will provide specific terms of the securities, including the initial offering price and the aggregate amount of the offering, in one or more supplements to this prospectus. Any prospectus supplement may also add, update or change information contained in this prospectus. You should carefully read this prospectus and the applicable prospectus supplement, as well as the documents incorporated or deemed to be incorporated by reference in this prospectus before you invest in our securities.

We may offer and sell these securities in the same offering or in separate offerings; to or through underwriters, dealers or agents; or directly to purchasers. The names of any underwriters, dealers or agents involved in the sale of our securities, their compensation and any over-allotment options held by them will be described in the applicable prospectus supplement. For a more complete description of the plan of distribution with respect to the securities covered by this prospectus, see the section entitled "Plan of Distribution" beginning on page 14 of this prospectus.

Our common stock is traded on The NASDAQ Stock Market under the symbol "VRML." On October 23, 2017, the last reported sale price for our common stock on The NASDAQ Stock Market was \$1.42 per share. As of October 23, 2017, the aggregate market value of our common stock held by our non-affiliates, as calculated pursuant to the rules of the Securities and Exchange Commission, was \$ 47,382,510 . Pursuant to General Instruction I.B.6 of Form S-3, in no event will we sell securities in a public offering with a value exceeding more than one-third of our "public float" (the market value of our common stock held by our non-affiliates) in any 12-month period so long as our public float remains below \$75,000,000. We have not sold any securities in reliance on General Instruction I.B.6 of Form S-3 during the 12 calendar months prior to and including the date of this prospectus.

INVESTING IN OUR SECURITIES INVOLVES SUBSTANTIAL RISKS. YOU SHOULD CONSIDER THE "[RISK FACTORS](#)" ON PAGE 3 OF THIS PROSPECTUS, IN THE DOCUMENTS THAT ARE INCORPORATED BY REFERENCE INTO THIS PROSPECTUS AND, IF APPLICABLE, IN RISK FACTORS DESCRIBED IN ANY ACCOMPANYING PROSPECTUS SUPPLEMENT BEFORE BUYING ANY OF OUR SECURITIES.

NEITHER THE SECURITIES AND EXCHANGE COMMISSION NOR ANY STATE SECURITIES COMMISSION HAS APPROVED OR DISAPPROVED OF THESE SECURITIES OR PASSED UPON THE ADEQUACY OR ACCURACY OF THIS PROSPECTUS. ANY REPRESENTATION TO THE CONTRARY IS A CRIMINAL OFFENSE.

The date of this prospectus is November 7, 2017.

Table of Contents

TABLE OF CONTENTS

	Page
<u>About This Prospectus</u>	1
<u>Summary</u>	2
<u>Risk Factors</u>	3
<u>Disclosure Regarding Forward-Looking Statements</u>	4
<u>Use of Proceeds</u>	7
<u>Description of Capital Stock</u>	8
<u>Description of Debt Securities</u>	13
<u>Plan of Distribution</u>	16
<u>Legal Matters</u>	20
<u>Experts</u>	20
<u>Where You Can Find More Information</u>	20
<u>Important Information Incorporated by Reference</u>	20

ABOUT THIS PROSPECTUS

This prospectus is part of a registration statement on Form S-3 that we filed with the Securities and Exchange Commission (the "SEC") using a "shelf" registration process. Under this shelf registration process, we may, from time to time, sell any combination of the securities described in this prospectus in one or more offerings up to the aggregate amount of \$50,000,000 .

This prospectus provides you with a general description of the securities we may offer. A prospectus supplement may add to, update or change information contained in this prospectus, and, accordingly, to the extent inconsistent, information in this prospectus is superseded by the information in any prospectus supplement.

A prospectus supplement may describe, as applicable: the terms of the securities; the initial public offering price; the price paid for the securities; net proceeds; and the other specific terms related to the offering of the securities.

You should rely only on the information that we have provided or incorporated by reference in this prospectus, any applicable prospectus supplement, any related free writing prospectus that we may authorize to be provided to you and the other information to which we refer you. We have not authorized anyone to provide you with different information. No dealer, salesperson or other person is authorized to give any information or to represent anything not contained in this prospectus or any applicable prospectus supplement or any related free writing prospectus that we may authorize to be provided to you. If anyone provides you with different or inconsistent information, you should not rely on it. You should assume that the information in this prospectus, any applicable prospectus supplement or any related free writing prospectus is accurate only as of the date on the cover of the document and that any information we have incorporated by reference is accurate only as of the date of the document incorporated by reference, regardless of the time of delivery of this prospectus, any applicable prospectus supplement or any related free writing prospectus, or any sale of a security. Our business, financial condition, results of operations and prospects may have changed since those dates.

We urge you to carefully read this prospectus and any applicable prospectus supplement, together with the information incorporated herein by reference as described under the heading "Where You Can Find Additional Information."

Table of Contents

SUMMARY

This summary highlights certain information contained in greater detail elsewhere in this prospectus or incorporated by reference into this prospectus. This summary is not complete and does not contain all of the information that you should consider before deciding whether to invest in our securities. You should carefully read this prospectus, any accompanying prospectus supplements, any related free writing prospectus that we have authorized for use in connection with the offering and the documents incorporated by reference herein and in any accompanying prospectus supplement, including the information referred to under the heading "Risk Factors" in this prospectus, under the heading "Risk Factors" contained in the applicable prospectus supplement and in the documents incorporated by reference into this prospectus and any prospectus supplement. Unless the context requires otherwise, all references in this prospectus to "Vermillion," "the Company," "we," "us," "our" or similar references mean Vermillion, Inc. together with its consolidated subsidiaries.

Our Company

Our vision is to drive the advancement of women's health by providing innovative methods to detect, monitor and manage the treatment of both benign and malignant gynecologic disease, with our primary focus being diseases of the female pelvic cavity.

We are dedicated to the discovery, development and commercialization of novel high-value diagnostic and bio-analytical solutions that help physicians diagnose, treat and improve outcomes for women. Our tests are intended to detect, characterize and stage disease, and to help guide decisions regarding patient treatment, which may include decisions to refer patients to specialists, to perform additional testing, or to assist in monitoring response to therapy. A distinctive feature of our approach is to combine multiple biomarkers, other modalities and diagnostics, clinical risk factors and patient data into a single, reportable index score that has higher diagnostic accuracy than its constituents. We concentrate on our development of novel diagnostic tests for gynecologic disease, with an initial focus on ovarian cancer. We also intend to address clinical questions related to early disease detection, treatment response, monitoring of disease progression, prognosis and others through collaborations with leading academic and research institutions.

The Company also offers in-vitro diagnostic ("IVD") trial services to third-party customers through its wholly-owned subsidiary, ASPIRA IVD, Inc. ("ASPIRA IVD"), which commenced operations in June 2016. ASPIRA IVD is a specialized, CLIA certified, laboratory provider dedicated to meeting the unique testing needs of IVD manufacturers seeking to commercialize high-complexity assays.

Corporate Information

We were originally incorporated in 1993, and we had our initial public offering in 2000. Our executive offices are located at 12117 Bee Caves Road, Building Three, Suite 100, Austin, Texas 78738, and our telephone number is (512) 519-0400. We maintain a website at www.vermillion.com and www.aspiralab.com where general information about us is available. Our websites, and the information contained therein, are not a part of this prospectus.

RISK FACTORS

Investing in our securities involves a high degree of risk. Please carefully consider the risk factors described in our most recent Annual Report on Form 10-K, any subsequent updates in our Quarterly Reports on Form 10-Q and any other filings we make with the SEC pursuant to Section 13(a), 13(c), 14 or 15(d) of the Securities Exchange Act of 1934, as amended (the “Exchange Act”), incorporated by reference herein, before making an investment decision. Additional risk factors may be included in any prospectus supplements relating to securities described in this prospectus. The occurrence of any of those risks could materially and adversely affect our business, prospects, financial condition, results of operations or cash flow. Other risks and uncertainties that we do not now consider to be material or of which we are not now aware may become important factors that affect us in the future and could result in a complete loss of your investment.

DISCLOSURE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus, any prospectus supplement and the documents that we incorporate herein or therein by reference contain forward-looking statements, as defined in the Private Securities Litigation Reform Act of 1995. These statements involve a number of risks and uncertainties. Words such as “may,” “expects,” “intends,” “anticipates,” “believes,” “estimates,” “plans,” “seeks,” “could,” “should,” “continue,” “will,” “potential,” “projects” and similar expressions are intended to identify such forward-looking statements. Readers are cautioned that these forward-looking statements speak only as of the date on which the document in which they appear is filed with the SEC, and, except as required by law, we do not assume any obligation to update, amend or clarify them to reflect events, new information or circumstances occurring after such dates.

Examples of forward-looking statements regarding our business include the following:

- projections or expectations regarding our future test volumes, revenue, cost of revenue, operating expenses, cash flow, results of operations and financial condition;
- our plan to broaden our commercial focus from ovarian cancer to differential diagnosis of women with a range of gynecological disorders;
- our planned business strategy and the anticipated timing of the implementation thereof;
- plans with respect to our market expansion and growth, including plans to market Overa outside the United States;
- plans to develop new algorithms and molecular diagnostic tests;
- plans to develop a product or tool combining an OVA1 with results of a symptom index;
- plans to establish our own payer coverage for OVA1 and Overa;
- intentions to address clinical questions related to early disease detection, treatment response, monitoring of disease progression, prognosis and other issues in the fields of oncology and women's health;
- plans to leverage infrastructure and enhance our pipeline of future technologies by fostering relationships with in vitro diagnostic companies;
- plans with respect to ASPIRA IVD;
- expected service revenue growth based on ASPIRA IVD;
- expected license revenue in future periods;
- our planned focus on the execution of five core strategic business drivers in ovarian cancer diagnostics and specialized laboratory services to address unmet medical needs for women faced with gynecologic disease and other conditions and the continued development of our business;
- anticipated efficacy of our products, product development activities and product innovations;
- expected competition in the markets in which we compete;
- plans with respect to ASPIRA LABS, Inc. (“ASPIRA LABS”);
- expectations regarding future services provided by Quest Diagnostics Incorporated (“Quest Diagnostics”);
- plans to expand our ovarian cancer franchise beyond OVA1, including with respect to Overa and OvaX;
- plans regarding the commercialization of Overa;
- plans to develop and perform laboratory development tests (“LDTs”);
- plans with respect to the Company's pelvic mass registry, including anticipated sources of funding;

Table of Contents

anticipated effects on reimbursement for OVA1 from changes to Novitas Solutions' administrative requirements;
expectations regarding the Company's monitoring and combining multiple protein biomarkers to create diagnostic tests to aid physicians considering treatment options for patients with complex diseases, and the Company's future development of new In Vitro Diagnostic Multivariate Index Assays;
expectations regarding existing and future collaborations and partnerships, including OVA1 and Overa distribution agreements;
plans regarding future publications;
our continued ability to comply with applicable governmental regulations, expectations regarding pending regulatory submissions and plans to seek regulatory approvals for our tests outside the United States;
our ability to obtain and maintain the regulatory approvals required to market Overa in other countries;
our continued ability to expand and protect our intellectual property portfolio;
anticipated liquidity and capital requirements ;
anticipated future losses and our ability to continue as a going concern;
expectations regarding the second disbursement from our financing arrangement with the State of Connecticut Department of Economic and Community Development;
expected expenditures, including the expected decrease in expenses related to research and development in 2017;
our ability to use our net operating loss carryforwards;
expected market adoption of our diagnostic tests, including OVA1 and Overa;
expectations regarding our ability to launch new products developed, licensed, co-marketed or acquired;
expectations regarding raising capital and the amount of financing anticipated to be required to fund our planned operations;
and
expectations regarding reimbursement for our products, and our ability to obtain such reimbursement, from third-party payers such as private insurance companies and government insurance plans.

These statements involve estimates, assumptions and uncertainties that could cause actual results to differ materially from those expressed in them. Any forward-looking statements are qualified in their entirety by reference to the risk factors described in any accompanying prospectus supplement or in any document incorporated by reference into this prospectus.

These factors include, among others:

our ability to increase the volume of OVA1 or Overa sales;
our ability to market our test through sales channels other than Quest Diagnostics, including ASPIRA LABS;
failures by third-party payers to reimburse OVA1 or Overa or changes or variances in reimbursement rates;
our ability to secure additional capital on acceptable terms to execute our business plan;
our ability to commercialize OVA1 and/or Overa both within and outside the United States;
in the event that we succeed in commercializing OVA1 and/or Overa outside the United States, the political, economic and other conditions affecting other countries (including foreign exchange rates);

Table of Contents

our ability to develop and commercialize additional diagnostic products and achieve market acceptance with respect to these products;

our ability to compete successfully;

our ability to obtain any regulatory approval required for our future diagnostic products;

our or our suppliers' ability to comply with United States Food and Drug Administration ("FDA") requirements for production, marketing and post-market monitoring of our products;

additional costs that may be required to make further improvements to our manufacturing operations;

our ability to maintain sufficient or acceptable supplies of immunoassay kits from our suppliers;

our ability to continue to develop, protect and promote our proprietary technologies;

future litigation against us, including infringement of intellectual property and product liability exposure;

our ability to retain key employees;

business interruptions;

legislative actions resulting in higher compliance costs;

changes in healthcare policy;

our ability to comply with environmental laws;

our ability to generate sufficient demand for ASPIRA LABS' services to cover its operating costs;

our ability to comply with the additional laws and regulations that apply to us in connection with the operation of ASPIRA LABS;

our ability to comply with FDA regulations that relate to our products and to obtain any FDA clearance or approval required to develop and perform LDTs;

ASPIRA IVD's lack of operating history;

ASPIRA IVD's ability to generate and maintain business;

fluctuations over time with respect to ASPIRA IVD's operating results;

ASPIRA IVD's ability to enter into profitable contracts;

ASPIRA IVD's ability to maintain effective information systems without significant interruption;

ASPIRA IVD's ability to perform its services in compliance with contractual requirements, regulatory standards and ethical considerations; and

our ability to continue as a going concern.

You should read this prospectus, any accompanying prospectus supplement, any related free writing prospectus and the documents that we incorporate by reference herein and therein completely and with the understanding that our actual future results may be materially different from what we currently expect. You should not put undue reliance on any forward-looking statement. We believe it is important to communicate our expectations to our investors. However, there may be events in the future that we are not able to accurately predict or that we do not fully control that could cause actual results to differ materially from those expressed or implied in our forward-looking statements.

USE OF PROCEEDS

Unless otherwise indicated in the prospectus supplement, we will use the net proceeds from the sale of securities offered by this prospectus for general corporate purposes, including working capital, for further research and development and ongoing sales and marketing expenses, and, potentially, capital expenditures and licensing of additional technologies. We may also use a portion of the net proceeds from any offering to acquire or invest in complimentary businesses, technologies, product candidates or other intellectual property, although we have no present commitments or agreements to do so. The timing and amount of our actual expenditures will be based on many factors, including cash flows from operations and the anticipated growth of our business. As a result, unless otherwise indicated in the prospectus supplement, our management will have broad discretion to allocate the net proceeds of the offerings. Pending their ultimate use, we intend to invest the net proceeds in short-term, investment-grade, interest-bearing instruments .

Table of Contents

DESCRIPTION OF CAPITAL STOCK

The following summary description of our capital stock is based on the applicable provisions of the Delaware General Corporation Law (the "DGCL"), and on the provisions of our [Fourth Amended and Restated Certificate of Incorporation, dated January 22, 2010, as amended effective June 19, 2014](#) (our "Certificate of Incorporation"), and our [Fifth Amended and Restated Bylaws, effective June 19, 2014](#) (our "Bylaws"). This information is qualified entirely by reference to the applicable provisions of the DGCL, our Certificate of Incorporation, and our Bylaws. For information on how to obtain copies of our Certificate of Incorporation and our Bylaws, please refer to the heading "Where You Can Find More Information" in this prospectus.

Our Authorized Capital Stock

Under our Certificate of Incorporation, our authorized capital stock consists of 150,000,000 shares of common stock, par value \$0.001 per share, and 5,000,000 shares of preferred stock, par value \$0.001 per share.

Common Stock

As of October 23, 2017, 59,998,748 shares of our common stock were outstanding, 4,753,443 shares of our common stock were subject to outstanding options (assuming, in the case of performance-based options, full attainment of the respective performance measures) and 1,525,212 shares of our common stock were reserved for future issuance to employees, directors and consultants pursuant to our stock incentive plans. In addition, as of October 23, 2017, warrants to purchase 3,180,179 shares of our common stock were outstanding. The rights, preferences and privileges of the holders of common stock are subject to, and may be adversely affected by, the rights of the holders of shares of any series of preferred stock which we may designate in the future.

Voting Rights

Each holder of common stock is entitled to one vote for each share on all matters to be voted upon by the stockholders, and there are no cumulative voting rights.

Dividend Rights

Subject to preferences to which holders of preferred stock may be entitled and the rights of certain of our stockholders set forth in the Stockholders Agreement (as defined below), holders of common stock are entitled to receive ratably such dividends, if any, as may be declared from time to time by our Board of Directors out of funds legally available therefor. We have never paid or declared any dividend on our common stock, and we do not anticipate paying cash dividends on any common stock in the foreseeable future. We intend to retain all available funds and any future earnings to fund the development and expansion of our business.

No Preemptive or Similar Rights

Holders of our common stock do not have preemptive rights, and our common stock is not convertible or redeemable. As described under "Stockholders Agreement," certain holders of our common stock have the right to purchase shares in connection with most equity offerings made by the Company.

Right to Receive Liquidation Distributions

In the event of our liquidation, dissolution or winding up, holders of common stock would be entitled to share in our assets remaining after the payment of liabilities and the satisfaction of any liquidation preference granted the holders of any outstanding shares of any senior class of securities. The rights, preferences and privileges of the holders of common stock are subject to, and may be adversely affected by, the rights of the holders of shares of any series of preferred stock which we may designate in the future.

Table of Contents

Preferred Stock

As of October 23, 2017, there were no shares of our preferred stock outstanding.

Our Board of Directors is authorized, subject to any limitations prescribed by law, without stockholder approval, to issue from time to time up to an aggregate of 5,000,000 shares of preferred stock, in one or more series, each of such series to have such rights and preferences, including voting rights, dividend rights, conversion rights, redemption terms and liquidation preferences as shall be determined by our Board of Directors. Any issuance of shares of preferred stock could adversely affect the voting power of holders of common stock, and the likelihood that the holders of preferred stock will receive dividend payments and payments upon liquidation could have the effect of delaying, deferring or preventing a change in control.

Warrants

We may issue warrants to purchase shares of common stock or shares of preferred stock. We will issue warrants under one or more warrant agreements between us and a warrant agent we will name in the prospectus supplement.

The prospectus supplement relating to any warrants we are offering will include specific terms relating to the offering. These terms will include some or all of the following:

- the aggregate number of warrants offered;
- the title of the warrants;
- the designation, number and terms of the shares of common stock or shares of preferred stock purchasable upon exercise of the warrants and procedures by which those numbers may be adjusted;
- the exercise price of the warrants;
- the dates or periods during which the warrants are exercisable;
- the designation and terms of any securities with which the warrants are issued;
- if the warrants are issued as a unit with another security, the date on and after which the warrants and the other security will be separately transferable;
- if the exercise price is not payable in U.S. dollars, the foreign currency, currency unit or composite currency in which the exercise price is denominated;
- any minimum or maximum amount of warrants that may be exercised at any one time;
- any terms relating to the modification of the warrants; and
- any terms, procedures and limitations relating to the transferability, exchange or exercise of the warrants.

Rights

We may issue rights for the purchase of shares of our common stock or shares of our preferred stock. Each series of rights will be issued under a separate rights agreement which we will enter into with a bank or trust company, as rights agent, all as set forth in the applicable prospectus supplement. The rights agent will act solely as our agent in connection with the certificates relating to the rights and will not assume any obligation or relationship of agency or trust with any holders of rights certificates or beneficial owners of rights. We will file the rights agreement and the rights certificates relating to each series of rights with the SEC and incorporate them by reference as an exhibit to the registration statement of which this prospectus is a part on or before the time we issue a series of rights.

Table of Contents

The applicable prospectus supplement will describe the terms of any rights we issue, including as applicable:

- the date for determining the persons entitled to participate in the rights distribution;
- the aggregate number or amount of underlying securities purchasable upon exercise of the rights and the exercise price;
- the aggregate number of rights being issued;
- the date, if any, on and after which the rights may be transferable separately;
- the date on which the right to exercise the rights commences and the date on which such right expires;
- the designation and terms of any securities with which the warrants are issued;
- a discussion of any material or special U.S. federal income tax considerations applicable to the rights; and
- any other terms of the rights, including the terms, procedures and limitations relating to the distribution, exchange and exercise of the rights.

Rights will be exercisable for U.S. dollars only and will be in registered form only.

Units

We may issue securities in units, each consisting of two or more types of securities. For example, we might issue units consisting of a combination of common stock and warrants to purchase common stock. If we issue units, the prospectus supplement relating to the units will contain information with regard to each of the securities that is a component of the units. In addition, the prospectus supplement relating to the units will describe the terms of any units we issue, including as applicable:

- the date, if any, on and after which the units may be transferable separately;
- whether we will apply to have the units traded on a securities exchange or securities quotation system;
- a discussion of any material or special U.S. federal income tax considerations applicable to the units; and
- how, for U.S. federal income tax purposes, the purchase price paid for the units is to be allocated among the component securities.

Stockholders Agreement

In connection with a private placement in May 2013, we entered into a stockholders agreement with the purchasers named therein (the “Stockholders Agreement”). Pursuant to and subject to the terms of the Stockholders Agreement, certain of the investors received rights to participate in any future equity offerings on the same price and terms as other investors, and rights to exercise “piggyback” registration rights for any registration statements that we file prior to May 13, 2018 on our own account or for the account of others with respect to shares of our common stock. Some or all of such investors might participate in one or more of the equity offering under the registration statement of which this prospectus is a part.

Table of Contents

In addition, the Stockholders Agreement prohibits the Company from taking material actions without the consent of at least one of the two primary investors. These material actions include:

- making any acquisition with value greater than \$2 million;
- entering into, or amending the terms of agreements with Quest Diagnostics, provided that such investors' 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 of Directors;
- offering, selling or issuing any securities senior to our common stock or any securities that are convertible into or exchangeable or exercisable for securities ranking senior to our common stock;
- amending our Certificate of Incorporation or our Bylaws in any manner that affects the rights, privileges or economics of our common stock or the warrants purchased in the May 2013 private placement;
- taking any action that would result in a change in control of Vermillion or an insolvency event;
- paying or declaring dividends on any securities of the Company or distributing any assets of the Company other than in the ordinary course of business or repurchasing any outstanding securities of the Company; or
- adopting or amending any stockholder rights plan.

In addition, the two primary investors (Jack W. Schuler, on the one hand, and Oracle Partners, LP and Oracle Ten Fund Master, LP, on the other hand) each received the right to designate a person to serve on our Board of Directors. These rights terminate for each investor when that investor ceases to beneficially own less than 50% of the shares and warrants (taking into account shares issued upon exercise of the warrants), in the aggregate, that it purchased at the closing of our May 2013 private placement .

Section 203 of the Delaware Corporation Law

We are subject to Section 203 of the DGCL, which prevents an "interested stockholder" (defined in Section 203 of the DGCL, generally, as a person owning 15% or more of a corporation's outstanding voting stock), from engaging in a "business combination" (as defined in Section 203 of the DGCL) with a publicly-held Delaware corporation for three years following the date such person became an interested stockholder, unless:

- before such person became an interested stockholder, the board of directors of the corporation approved the transaction in which the interested stockholder became an interested stockholder or approved the business combination;
- upon consummation of the transaction that resulted in the interested stockholders becoming an interested stockholder, the interested stockholder owns at least 85% of the voting stock of the corporation outstanding at the time the transaction commenced (excluding stock held by directors who are also officers of the corporation and by employee stock plans that do not provide employees with the rights to determine confidentially whether shares held subject to the plan will be tendered in a tender or exchange offer); or
- following the transaction in which such person became an interested stockholder, the business combination is approved by the board of directors of the corporation and authorized at a meeting of stockholders by the affirmative vote of the holders of two-thirds of the outstanding voting stock of the corporation not owned by the interested stockholder.

The provisions of Section 203 of the DGCL could make a takeover of the Company difficult.

Table of Contents

Effect of Certain Provisions of Our Certificate of Incorporation and Bylaws

Certain provisions of our Certificate of Incorporation and Bylaws may have the effect of making it more difficult for a third party to acquire, or of discouraging a third party from attempting to acquire, control of us. Such provisions could limit the price that certain investors might be willing to pay in the future for our securities. Our Certificate of Incorporation eliminates the right of stockholders to call special meetings of stockholders or to act by written consent without a meeting, and our Bylaws require advance notice for stockholder proposals and director nominations, which may preclude stockholders from bringing matters before an annual meeting of stockholders or from making nominations for directors at an annual meeting of stockholders. Our Certificate of Incorporation authorizes undesignated preferred stock, which makes it possible for our Board of Directors to issue preferred stock with voting or other rights or preferences that could impede the success of any attempt to change control of us.

These and other provisions may have the effect of deferring hostile takeovers or delaying changes in control or management of us. The amendment of any of the provisions of our Certificate of Incorporation described in the immediately preceding paragraph would require approval by our Board of Directors and the affirmative vote of at least 66 2/3% of our then outstanding voting securities, and the amendment of any of the provisions of our Bylaws described in the immediately preceding paragraph would require approval by our Board of Directors or the affirmative vote of at least 66 2/3% of our then outstanding voting securities.

Transfer Agent

The transfer agent for our common stock is Wells Fargo Shareowner Services.

Listing

Our common stock is listed on The NASDAQ Stock Market under the symbol "VRML."

DESCRIPTION OF DEBT SECURITIES

This section describes the general terms and provisions of the debt securities that we may issue from time to time in the form of one or more series of debt securities. We may offer secured or unsecured debt securities which may be senior or subordinated and which may be convertible. The applicable prospectus supplement and/or other offering materials will describe the specific terms of the debt securities offered through that prospectus supplement as well as any general terms described in this section that will not apply to those debt securities. To the extent the applicable prospectus supplement or other offering materials relating to an offering of debt securities are inconsistent with this prospectus, the terms of that prospectus supplement or other offering materials will supersede the information in this prospectus. In this “Description of Debt Securities,” unless otherwise indicated, “we,” “our,” “the Company” and similar words refer to Vermillion, Inc. and not any of its subsidiaries.

The debt securities will be issued under one or more indentures to be entered into between us and one or more trustees. References herein to the “indenture” and the “trustee” refer to the applicable indenture and the applicable trustee pursuant to which any particular series of debt securities is issued. The terms of any series of debt securities will be those specified in or pursuant to the applicable indenture and in the certificates evidencing that series of debt securities and those made part of the indenture by the Trust Indenture Act of 1939, as amended (the “Trust Indenture Act”). We may issue senior, subordinated and convertible debt securities under the same indenture.

The following summary of selected provisions of the indenture and the debt securities is not complete, and the summary of selected terms of a particular series of debt securities included in the applicable prospectus supplement also will not be complete. You should review the applicable form of indenture and the applicable form of certificate evidencing the debt securities, which forms have been or will be filed as exhibits to the registration statement of which this prospectus is a part or as exhibits to documents which have been or will be incorporated by reference in this prospectus. To obtain a copy of the indenture or the form of certificate for the debt securities, see “Where You Can Find More Information” in this prospectus. The following summary and the summary in any applicable prospectus supplement are qualified in their entirety by reference to all of the provisions of the indenture and the certificates evidencing the debt securities (including any amendments or supplements we may enter into from time to time which are permitted under the debt securities or any indenture), which provisions, including defined terms, are incorporated by reference in this prospectus.

Unless otherwise specified in a prospectus supplement, the debt securities will be direct unsecured obligations of the Company and will rank junior in right of payment to any of our secured indebtedness to the extent of the value of the assets securing such indebtedness, and will be structurally junior to all existing and future indebtedness incurred by our subsidiaries. Any debt securities designated as senior will rank equally with any of our other senior and unsubordinated debt. Any debt securities designated as subordinated will be subordinate and junior in right of payment to any senior indebtedness. There may be subordinated debt securities that are senior or junior to other series of subordinated debt securities.

The applicable prospectus supplement will set forth the terms of the debt securities or any series thereof, including, if applicable:

- the title of the debt securities and whether the debt securities will be senior debt securities or subordinated debt securities;
- any limit on the aggregate principal amount of the debt securities;
- whether the debt securities will be issued as registered securities, bearer securities or both, and any restrictions on the exchange of one form of debt securities for another and on the offer, sale and delivery of the debt securities in either form;
- the date or dates on which the principal amount of the debt securities will mature;
- if the debt securities bear interest, the rate or rates at which the debt securities bear interest, or the method for determining the interest rate, and the date or dates from which interest will accrue;

Table of Contents

if the debt securities bear interest, the dates on which interest will be payable, or the method for determining such dates, and the regular record dates for interest payments;

the place or places where the payment of principal, any premium and interest will be made, where the debt securities may be surrendered for transfer or exchange and where notices or demands to or upon us may be served;

any optional redemption provisions, which would allow us to redeem the debt securities in whole or in part;

any sinking fund or other provisions that would obligate us to redeem, repay or purchase the debt securities;

if the currency in which the debt securities will be issuable is United States dollars, the denominations in which any registered securities will be issuable, if other than denominations of \$1,000 and any integral multiple thereof;

if other than the entire principal amount, the portion of the principal amount of debt securities which will be payable upon a declaration of acceleration of the maturity of the debt securities;

the events of default and covenants relevant to the debt securities, including the inapplicability of any event of default or covenant set forth in the indenture relating to the debt securities, or the applicability of any other events of defaults or covenants in addition to the events of default or covenants set forth in the indenture relating to the debt securities;

the name and location of the corporate trust office of the applicable trustee under the indenture for such series of notes;

if other than United States dollars, the currency in which the debt securities will be paid or denominated;

if the debt securities are to be payable, at our election or the election of a holder of the debt securities, in a currency other than that in which the debt securities are denominated or stated to be payable, the terms and conditions upon which that election may be made, and the time and manner of determining the exchange rate between the currency in which the debt securities are denominated or stated to be payable and the currency in which the debt securities are to be so payable;

the designation of the original currency determination agent, if any;

if the debt securities are issuable as indexed securities, the manner in which the amount of payments of principal, any premium and interest will be determined;

if the debt securities do not bear interest, the dates on which we will furnish to the applicable trustee the names and addresses of the holders of the debt securities;

if other than as set forth in an indenture, provisions for the satisfaction and discharge or defeasance or covenant defeasance of that indenture with respect to the debt securities issued under that indenture;

the date as of which any bearer securities and any global security will be dated if other than the date of original issuance of the first debt security of a particular series to be issued;

whether and under what circumstances we will pay additional amounts to non-United States holders in respect of any tax assessment or government charge;

whether the debt securities will be issued in whole or in part in the form of a global security or securities and, in that case, any depositary and global exchange agent for the global security or securities, whether the global form shall be permanent or temporary and, if applicable, the exchange date;

if debt securities are to be issuable initially in the form of a temporary global security, the circumstances under which the temporary global security can be exchanged for definitive debt securities and whether the definitive debt securities will be registered securities, bearer securities or will be in global form and provisions relating to the payment of interest in respect of any portion of a global security payable in respect of an interest payment date prior to the exchange date;

Table of Contents

the extent and manner to which payment on or in respect of debt securities will be subordinated to the prior payment of our other liabilities and obligations;
whether payment of any amount due under the debt securities will be guaranteed by one or more guarantors, including one or more of our subsidiaries;
whether the debt securities will be convertible and the terms of any conversion provisions;
the forms of the debt securities; and
any other terms of the debt securities, which terms shall not be inconsistent with the requirements of the Trust Indenture Act.

This prospectus is part of a registration statement that provides that we may issue debt securities from time to time in one or more series under one or more indentures, in each case with the same or various maturities, at par or at a discount. Unless otherwise indicated in a prospectus supplement, we may issue additional debt securities of a particular series without the consent of the holders of the debt securities of such series outstanding at the time of the issuance. Any such additional debt securities, together with all other outstanding debt securities of that series, will constitute a single series of debt securities under the applicable indenture.

We intend to disclose any restrictive covenants for any issuance or series of debt securities in the applicable prospectus supplement.

PLAN OF DISTRIBUTION

We may sell the securities offered through this prospectus in one or more of the following ways (or in any combination) from time to time:

- to or through underwriters or dealers;
- directly to purchasers, including our affiliates;
- through agents; or
- a combination of any these methods.

If underwriters or dealers are used in the sale, the securities will be acquired by the underwriters or dealers for their own account and may be resold from time to time in one or more transactions, including:

- in one or more transactions at a fixed price or prices, which may be changed from time to time;
- in “at-the-market offerings,” within the meaning of Rule 415(a)(4) of the Securities Act of 1933, as amended (the “Securities Act”),
- to or through a market maker or into an existing trading market, on an exchange or otherwise;
- through a market maker or into an existing trading market on an exchange or otherwise;
- at prices related to those prevailing market prices; or
- at negotiated prices.

The prospectus supplement will include the following information:

- the terms of the offering;
- the names of any underwriters or agents;
- the name or names of any managing underwriter or underwriters;
- the purchase price of the securities;
- the net proceeds from the sale of the securities;
- any delayed delivery arrangements;
- any underwriting discounts, commissions and other items constituting underwriters’ compensation;
- any initial public offering price;
- any discounts or concessions allowed or reallocated or paid to dealers; and
- any commissions paid to agents.

Sale Through Underwriters or Dealers

If underwriters are used in the sale of any securities, the underwriters will acquire the securities for their own account, including through underwriting, purchase, security lending or repurchase agreements with us. The underwriters may resell the securities from time to time in one or more transactions, including negotiated transactions. Underwriters may sell the securities in order to facilitate transactions in any of our other securities

Table of Contents

(described in this prospectus or otherwise), including other public or private transactions and short sales. Underwriters may offer securities to the public either through underwriting syndicates represented by one or more managing underwriters or directly by one or more firms acting as underwriters. Unless otherwise indicated in the prospectus supplement, the obligations of the underwriters to purchase the securities will be subject to certain conditions, and the underwriters will be obligated to purchase all the offered securities if they purchase any of them. The underwriters may change from time to time any initial public offering price and any discounts or concessions allowed or reallowed or paid to dealers. The prospectus supplement will include the names of the principal underwriters, the respective amount of securities underwritten, the nature of the obligation of the underwriters to take the securities and the nature of any material relationship between an underwriter and us.

If dealers are used in the sale of securities offered through this prospectus, we will sell the securities to them as principals. They may then resell those securities to the public at varying prices determined by the dealers at the time of resale. The prospectus supplement will include the names of the dealers and the terms of the transaction.

We may authorize underwriters, dealers or agents to solicit offers by certain purchasers to purchase our securities from us at the public offering price set forth in the prospectus supplement pursuant to delayed delivery contracts providing for payment and delivery on a specified date in the future. The contracts will be subject to those conditions set forth in the prospectus supplement, and the prospectus supplement will set forth any commissions paid for solicitation of these contracts.

Underwriters, dealers and agents may contract for or otherwise be entitled to indemnification by us against certain civil liabilities, including liabilities under the Securities Act, or to contribution with respect to payments made by the underwriters, dealers or agents, under agreements between us on one hand, and the underwriters, dealers and agents, on the other hand.

We may grant underwriters who participate in the distribution of our securities an option to purchase additional securities to cover over-allotments, if any, in connection with the distribution.

Underwriters, dealers, or agents may receive compensation in the form of discounts, concessions or commissions from us or our purchasers, as their agents in connection with the sale of our securities. These underwriters, dealers or agents may be considered to be underwriters under the Securities Act. As a result, discounts, commissions or profits on resale received by the underwriters, dealers or agents may be treated as underwriting discounts and commissions. The prospectus supplement for any securities offered by us will identify any such underwriter, dealer or agent and describe any compensation received by them from us. Any public offering price and any discounts or concessions allowed or re-allowed or paid to dealers may be changed from time to time.

Underwriters, broker-dealers or agents who may become involved in the sale of our securities may engage in transactions with and perform other services for us for which they receive compensation.

Direct Sales and Sales Through Agents

We may sell the securities offered through this prospectus directly. In this case, no underwriters or agents would be involved. Such securities may also be sold through agents designated from time to time. The prospectus supplement will name any agent involved in the offer or sale of the offered securities and will describe any commissions payable to the agent by us. Unless otherwise indicated in the prospectus supplement, any agent will agree to use its reasonable best efforts to solicit purchases for the period of its appointment.

We may sell the securities directly to institutional investors or others who may be deemed to be underwriters within the meaning of the Securities Act, with respect to any sale of those securities.

At-the-Market Offerings

To the extent that we make sales through one or more underwriters or agents in at-the-market offerings, we will do so pursuant to the terms of a sales agency financing agreement or other at-the-market offering arrangement between us, on one hand, and the underwriters or agents, on the other. If we engage in at-the-market sales pursuant to any such agreement, we will issue and sell our securities through one or more underwriters or agents,

Table of Contents

which may act on an agency basis or a principal basis. During the term of any such agreement, we may sell securities on a daily basis in exchange transactions or otherwise as we agree with the underwriters or agents. Any such agreement will provide that any securities sold will be sold at prices related to the then prevailing market prices for our securities. Therefore, exact figures regarding proceeds that will be raised or commissions to be paid cannot be determined at this time. Pursuant to the terms of the agreement, we may agree to sell, and the relevant underwriters or agents may agree to solicit offers to purchase blocks of our common stock or other securities. The terms of any such agreement will be set forth in more detail in the prospectus supplement.

Market Making, Stabilization and Other Transactions

In connection with an offering through underwriters, an underwriter may, to the extent permitted by applicable rules and regulations, purchase and sell securities in the open market. These transactions, to the extent permitted by applicable rules and regulations, may include short sales, stabilizing transactions and purchases to cover positions created by short sales. Short sales involve the sale by the underwriters of a greater number of securities than they are required to purchase in the offering. "Covered" short sales are short sales made in an amount not greater than the underwriters' option to purchase additional securities from us in the offering, if any. If the underwriters have an over-allotment option to purchase additional securities from us, the underwriters may consider, among other things, the price of securities available for purchase in the open market as compared to the price at which they may purchase securities through the over-allotment option. "Naked" short sales, which may be prohibited or restricted by applicable rules and regulations, are any sales in excess of such option or where the underwriters do not have an over-allotment option. The underwriters must close out any naked short position by purchasing securities in the open market. A naked short position is more likely to be created if the underwriters are concerned that there may be downward pressure on the price of the securities in the open market after pricing that could adversely affect investors who purchase in the offering.

Accordingly, to cover these short positions or to otherwise stabilize or maintain the price of the securities, the underwriters may bid for or purchase securities in the open market and may impose penalty bids. If penalty bids are imposed, selling concessions allowed to syndicate members or other broker-dealers participating in the offering are reclaimed if securities previously distributed in the offering are repurchased, whether in connection with stabilization transactions or otherwise. The effect of these transactions may be to stabilize or maintain the market price of the securities at a level above that which might otherwise prevail in the open market. The imposition of a penalty bid may also affect the price of the securities to the extent that it discourages resale of the securities. The magnitude or effect of any stabilization or other transactions is uncertain.

Derivative Transactions and Hedging

We, the underwriters or other agents may engage in derivative transactions involving the securities. These derivatives may consist of short sale transactions and other hedging activities. The underwriters or agents may acquire a long or short position in the securities, hold or resell securities acquired and purchase options or futures on the securities and other derivative instruments with returns linked to or related to changes in the price of the securities. In order to facilitate these derivative transactions, we may enter into security lending or repurchase agreements with the underwriters or agents. The underwriters or agents may effect the derivative transactions through sales of the securities to the public, including short sales, or by lending the securities in order to facilitate short sale transactions by others. The underwriters or agents may also use the securities purchased or borrowed from us or others (or, in the case of derivatives, securities received from us in settlement of those derivatives) to directly or indirectly settle sales of the securities or close out any related open borrowings of the securities.

Trading Market and Listing of Securities

Any common stock sold or resold pursuant to a prospectus supplement will be listed on The NASDAQ Stock Market or on such other national securities exchange as our common stock may then be listed. The securities other than common stock may or may not be listed on a national securities exchange. It is possible that one or more underwriters may make a market in a class or series of securities, but the underwriters will not be obligated

[Table of Contents](#)

to do so and may discontinue any market making at any time without notice. We cannot give any assurance as to the liquidity of the trading market for any of the securities.

General Information

Agents, underwriters, and dealers may be entitled, under agreements entered into with us, to indemnification by us against certain liabilities, including liabilities under the Securities Act.

Table of Contents

LEGAL MATTERS

Sidley Austin LLP will pass upon the validity of the securities being registered by the registration statement of which this prospectus is a part. Michael A. Gordon, a stockholder of the Company, is a partner at such firm. As of October 23, 2017, Mr. Gordon beneficially owned securities representing less than one percent of the outstanding common stock of the Company. Additional legal matters may be passed upon for us or any underwriters, dealers or agents, by counsel that we will name in the applicable prospectus supplement.

EXPERTS

The consolidated financial statements as of December 31, 2016 and 2015 and for the years then ended incorporated by reference in this prospectus have been so incorporated in reliance on the report of BDO USA, LLP, an independent registered public accounting firm, incorporated herein by reference, given on the authority of said firm as experts in auditing and accounting.

WHERE YOU CAN FIND MORE INFORMATION

We file annual, quarterly and current reports, proxy statements and other information with the SEC. We have filed with the SEC a registration statement on Form S-3 under the Securities Act of which this prospectus forms a part. This prospectus does not contain all of the information set forth in the registration statement and the exhibits to the registration statement. For further information with respect to us and the securities that may be offered under this prospectus, we refer you to the registration statement and the exhibits and schedules filed as a part of the registration statement. You may read and copy, at prescribed rates, any document we file with the SEC at the SEC's Public Reference Room at 100 F Street, N.E., Washington, D.C. 20549. Please call the SEC at 1-800-SEC-0330 for more information about the operation of the Public Reference Room. The SEC maintains an Internet site that contains reports, proxy and information statements, and other information regarding issuers that file electronically with the SEC, including Vermillion, Inc. The SEC's Internet site can be found at <http://www.sec.gov>. Our filings are also available to the public over the Internet at our website, www.vermillion.com.

Information on any Vermillion website, any subsection, page, or other subdivision of any Vermillion website, or any website linked to by content on any Vermillion website, is not part of this prospectus and you should not rely on that information unless that information is also in this prospectus or incorporated by reference in this prospectus.

IMPORTANT INFORMATION INCORPORATED BY REFERENCE

The SEC allows us to incorporate by reference into this prospectus the information contained in other documents we file with the SEC, which means that we can disclose important information to you by referring you to those documents. Any statement contained in any document incorporated or deemed to be incorporated by reference herein shall be deemed to be modified or superseded, for purposes of this prospectus, to the extent that a statement contained in or omitted from this prospectus, or in any other subsequently filed document that also is or is deemed to be incorporated by reference herein, modifies or supersedes such statement. Any such statement so modified or superseded shall not be deemed, except as so modified or superseded, to constitute a part of this prospectus. We incorporate by reference the documents listed below which have been filed by us and any future filings we make with the SEC under Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act (other than current reports furnished under Item 2.02 or Item 7.01 of Form 8-K and exhibits filed on such form that are related to such items unless such Form 8-K expressly provides to the contrary) subsequent to the date of the initial filing of the registration statement of which this prospectus forms a part until the offering of the securities covered by this prospectus is completed:

- (a) Our [Annual Report on Form 10-K for the year ended December 31, 2016](#) filed with the SEC on March 31, 2017 (including those portions of our [Definitive Proxy Statement on Schedule 14A filed with the SEC on April 27, 2017](#) that are incorporated by reference into Part III of such Annual Report on Form 10-K);

Table of Contents

- (b) Our Quarterly Reports on Form 10-Q for the quarters ended [March 31, 2017](#) and [June 30, 2017](#) filed with the SEC on May 11, 2017 and August 11, 2017, respectively;
- (c) Our Current Reports on Form 8-K filed with the SEC on (i) [February 17, 2017](#) (Items 1.01 and 3.02 only), (ii) [March 3, 2017](#), (iii) [March 13, 2017](#), (iv) [June 26, 2017](#) and (v) [August 28, 2017](#); and
- (d) The description of our common stock set forth in the [Registration Statement on Form 8-A filed with the SEC on July 6, 2010](#) (File No. 001-34810), including any amendments or reports filed for the purpose of updating such description.

Upon written or oral request, we will provide without charge to each person, including any beneficial owner, to whom a copy of the prospectus is delivered a copy of the documents incorporated by reference herein (other than exhibits to such documents unless such exhibits are specifically incorporated by reference herein). You may request a copy of these filings, at no cost, by writing or telephoning us at the following address:

Vermillion, Inc.
12117 Bee Caves Road, Building Three, Suite 100
Austin, Texas 78738
(512) 519-0400
Attn: Corporate Secretary

Shares



Vermillion, Inc.

Common Stock

Prospectus Supplement
, 2019

Book-Running Manager

William Blair