

VERACYTE, INC.
Form 424B5
May 01, 2019
Table of Contents

Filed pursuant to Rule 424(b)(5)
Registration No. 333-231153

The information contained in this preliminary prospectus supplement is not complete and may be changed. This preliminary prospectus supplement and the accompanying prospectus are not an offer to sell nor do they seek an offer to buy these securities in any jurisdiction where such offer or sale is not permitted.

Subject to completion, dated May 1, 2019

PRELIMINARY PROSPECTUS SUPPLEMENT

(To Prospectus dated May 1, 2019)

5,000,000 Shares

Veracyte, Inc.

Common Stock

We are offering 5,000,000 shares of our common stock.

Our common stock is listed on The Nasdaq Global Market under the symbol VCYT. On April 30, 2019, the last reported sale price of our shares of common stock on The Nasdaq Global Market was \$22.87 per share.

We are a smaller reporting company under the federal securities laws and are subject to reduced public company reporting requirements.

Investing in our common stock involves a high degree of risk. See **Risk Factors** beginning on page S-6 of this prospectus supplement.

	Per Share	Total
Public offering price	\$	\$
Underwriting discounts and commissions ⁽¹⁾	\$	\$
Proceeds, before expenses, to us	\$	\$

(1) See Underwriting (Conflict of Interest) for a description of compensation payable to the underwriters. We have granted the underwriters the right to purchase up to 750,000 additional shares of our common stock. The underwriters may exercise this right at any time within 30 days after the date of this prospectus supplement.

The underwriters expect to deliver the shares of common stock against payment in New York, New York on or about May 7, 2019.

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 supplement or the accompanying prospectus. Any representation to the contrary is a criminal offense.

Lead Book-Running Managers

Morgan Stanley

SVB Leerink

Book-Running Manager

William Blair

Co-Managers

BTIG

The date of this prospectus supplement is

**Janney Montgomery Scott
, 2019.**

Table of Contents

TABLE OF CONTENTS

Prospectus Supplement

<u>ABOUT THIS PROSPECTUS SUPPLEMENT</u>	S-1
<u>PROSPECTUS SUPPLEMENT SUMMARY</u>	S-2
<u>THE OFFERING</u>	S-4
<u>RISK FACTORS</u>	S-6
<u>FORWARD-LOOKING STATEMENTS</u>	S-8
<u>USE OF PROCEEDS</u>	S-10
<u>DILUTION</u>	S-11
<u>DIVIDEND POLICY</u>	S-13
<u>MATERIAL UNITED STATES FEDERAL INCOME TAX CONSEQUENCES FOR NON-U.S. HOLDERS OF OUR COMMON STOCK</u>	S-14
<u>UNDERWRITING (CONFLICT OF INTEREST)</u>	S-19
<u>LEGAL MATTERS</u>	S-26
<u>EXPERTS</u>	S-26
<u>WHERE YOU CAN FIND MORE INFORMATION</u>	S-26

Prospectus

<u>ABOUT THIS PROSPECTUS</u>	1
<u>PROSPECTUS SUMMARY</u>	2
<u>RISK FACTORS</u>	4
<u>FORWARD-LOOKING STATEMENTS</u>	4
<u>USE OF PROCEEDS</u>	5
<u>SECURITIES WE MAY OFFER</u>	5
<u>DESCRIPTION OF COMMON STOCK</u>	6
<u>DESCRIPTION OF PREFERRED STOCK</u>	8
<u>DESCRIPTION OF DEBT SECURITIES</u>	9
<u>DESCRIPTION OF WARRANTS</u>	17
<u>DESCRIPTION OF SUBSCRIPTION RIGHTS</u>	18
<u>DESCRIPTION OF UNITS</u>	19
<u>SELLING SECURITYHOLDERS</u>	19
<u>PLAN OF DISTRIBUTION</u>	19
<u>LEGAL MATTERS</u>	21
<u>EXPERTS</u>	21
<u>WHERE YOU CAN FIND MORE INFORMATION</u>	21
<u>INCORPORATION OF INFORMATION BY REFERENCE</u>	22

Table of Contents

ABOUT THIS PROSPECTUS SUPPLEMENT

On May 1, 2019, we filed with the Securities and Exchange Commission, or SEC, a registration statement on Form S-3 utilizing a shelf registration process relating to the securities described in this prospectus supplement, which registration statement became automatically effective upon filing. Under this shelf registration process, we may, from time to time, sell common stock and other securities, of which this offering is a part.

This document contains two parts. The first part is this prospectus supplement, which describes the specific terms of this offering and also adds and updates information contained in the accompanying prospectus and the documents incorporated by reference into this prospectus supplement and the accompanying prospectus. The second part is the accompanying prospectus, which provides more general information, some of which may not apply to this offering. 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 and the accompanying prospectus. We have not, and the underwriters have not, authorized anyone else to provide you with information that is in addition to or different from that contained or incorporated by reference in this prospectus supplement and the accompanying prospectus, along with the information contained in any permitted free writing prospectuses we have authorized for use in connection with this offering.

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 offering of the common stock in certain jurisdictions may be restricted by law. Persons outside the United States who come into possession of this prospectus supplement must inform themselves about, and observe any restrictions relating to, the offering of the common stock and the distribution of this prospectus supplement outside the United States. This prospectus supplement does not constitute, and may not be used in connection with, an offer to sell, or a solicitation of an offer to buy, any securities offered by this prospectus supplement by any person in any jurisdiction in which it is unlawful for such person to make such an offer or solicitation.

The information contained in this prospectus supplement and the accompanying prospectus is accurate only as of the date of this prospectus supplement or the date of the accompanying prospectus, and the information in the documents incorporated by reference in this prospectus supplement and the accompanying prospectus is accurate only as of the date of those respective documents, regardless of the time of delivery of this prospectus supplement and the accompanying prospectus or of any sale of our common stock. Our business, financial condition, results of operations and prospects may have changed since those dates. It is important for you to read and consider all information contained or incorporated by reference in this prospectus supplement and the accompanying prospectus in making your investment decision. You should read both this prospectus supplement and the accompanying prospectus, as well as the documents incorporated by reference into this prospectus supplement and the accompanying prospectus and the additional information described under "Where You Can Find More Information" in this prospectus supplement and in the accompanying prospectus, before investing in our common stock.

Unless otherwise indicated or the context otherwise requires, references in this prospectus supplement and the accompanying prospectus to Veracyte, the company, we, us and our refer to Veracyte, Inc.

Veracyte, Afirma, Percepta, Envisia, Know by Design, the Veracyte logo and the Afirma logo are our trademarks. This prospectus supplement, the accompanying prospectus and the documents incorporated by reference into this prospectus supplement and the accompanying prospectus may also contain trademarks and trade names that are the property of their respective owners. We do not intend our use or display of other companies' trade names, trademarks

or service marks to imply relationships with, or endorsements or sponsorship of us by, these other companies.

S-1

Table of Contents

PROSPECTUS SUPPLEMENT SUMMARY

This summary highlights selected information about us and this offering. Because it is a summary, it does not contain all of the information that you should consider before investing. Before you decide to invest in our common stock, you should read carefully and in their entirety this entire prospectus supplement and the accompanying prospectus, including the section in this prospectus supplement entitled Risk Factors, and the documents we have incorporated by reference in this prospectus supplement and the accompanying prospectus, along with our financial statements and accompanying notes incorporated by reference in this prospectus supplement and the accompanying prospectus.

Company Overview

We are a leading genomic diagnostics company that is creating value through innovation. We were founded in 2008 with a mission to improve diagnostic accuracy. Today, through our innovative scientific platform which utilizes ribonucleic acid, or RNA, whole-transcriptome sequencing combined with machine learning, we are serving this critical medical need and expanding our offerings further along the clinical continuum of care so that we can advance early detection of disease and inform treatment decisions at the same time as diagnosis.

We have commercialized five leading, first-to-market tests that we believe are transforming care in large, untapped clinical areas—thyroid cancer, lung cancer and idiopathic pulmonary fibrosis, or IPF. We develop tests that answer specific clinical questions, providing patients and physicians with a clear path forward without the need for risky or costly procedures that are often unnecessary. Our RNA whole-transcriptome sequencing platform enables us to maximize the amount of genomic content that we extract from each nonsurgical patient sample. We use our machine learning expertise to develop genomic classifiers that provide actionable information at the time of diagnosis. At the same time, our approach enables us to provide information that can guide treatment decisions such as surgery strategy and therapy selection.

We position our tests in each clinical indication at the point where they improve diagnostic clarity for cancer and other diseases. In its 2015 report, *Improving Diagnostic Errors in Medicine*, the Institute of Medicine concluded that most people will experience at least one diagnostic error in their lifetime, sometimes with devastating consequences. Annually, of the hundreds of thousands of patients who are evaluated for suspected disease in our thyroid and lung cancer indications, diagnosis can be ambiguous in 15% to 70% of cases.

To date, we have commercialized five genomic tests that we believe are changing disease diagnosis:

the Afirma Genomic Sequencing Classifier, or GSC, for thyroid cancer;

the Afirma Gene Expression Classifier, which was the Afirma GSC's predecessor;

the Percepta Bronchial Genomic Classifier for lung cancer;

the Envisia Genomic Classifier for IPF; and

our Afirma Xpression Atlas, which provides information on the most common and emerging gene alterations associated with thyroid cancer, enabling physicians to confidently tailor surgical and treatment decisions at time of diagnosis.

Collectively, we believe the four tests we are currently offering address a \$2 billion global market opportunity.

The published evidence supporting our tests demonstrates the robustness of our science and clinical studies, and we believe is key to driving adoption and reimbursement. Patients and physicians can access our full list of publications on our website. Over 38 clinical studies covering our products have been published, including two landmark clinical validation papers published in The New England Journal of Medicine for the Afirma and Percepta classifiers. We continue to build upon our extensive library of clinical evidence.

S-2

Table of Contents

We believe our focus on developing clinically useful tests that change patient care is enabling us to set new standards in genomic test reimbursement. Our Afirma genomic classifier is now covered by every major health plan in the United States, which collectively insure more than 275 million people for use in thyroid cancer diagnosis. We are now contracted as an in-network service provider to health plans representing over 215 million people in the United States. Our second commercial product, the Percepta classifier, is the first genomic test to gain Medicare coverage for improved lung cancer screening and diagnosis, making it a covered benefit for nearly 60 million people.

Company Information

We were incorporated in the state of Delaware on August 15, 2006 as Calderome, Inc. Calderome operated as an incubator until early 2008. We changed our name to Veracyte, Inc. in March 2008. Our principal executive offices are located at 6000 Shoreline Court, Suite 300, South San Francisco, California 94080 and our telephone number is (650) 243-6300. Our website address is www.veracyte.com. We do not incorporate the information on, or accessible through, our website into this prospectus supplement or the accompanying prospectus, and you should not consider any information on, or accessible through, our website as part of this prospectus supplement or the accompanying prospectus.

We are a smaller reporting company as defined in the Securities Exchange Act of 1934, as amended, or the Exchange Act, and as a result, the information that we provide to our stockholders may be different than you might receive from other public reporting companies in which you hold equity interests.

Table of Contents

THE OFFERING

Issuer	Veracyte, Inc.
Common stock we are offering	5,000,000 shares
Common stock to be outstanding after the offering	46,509,240 shares (or 47,259,240 shares if the underwriters exercise in full their option to purchase additional shares of our common stock).
Option to purchase additional shares	We have granted the underwriters a 30-day option to purchase up to an additional 750,000 shares of our common stock.
Use of proceeds	We currently intend to use the net proceeds from this offering for working capital and other general corporate purposes. We also intend to use a portion of the net proceeds we receive from this offering to repay approximately \$12.4 million of the term loan outstanding under our loan and security agreement, or Loan and Security Agreement. We may also use a portion of the net proceeds from this offering to acquire or invest in complementary businesses, technologies or other assets, although we have no present commitments or agreements to do so. See the section entitled "Use of Proceeds."
Risk factors	See the section entitled "Risk Factors" for a discussion of factors you should consider carefully before deciding to invest in our common stock.
Nasdaq Global Market symbol	VCYT
Conflicts of interest	Affiliates of SVB Leerink LLC, an underwriter in this offering, will receive at least 5% of the net proceeds of this offering in connection with the repayment of approximately \$12.4 million of the term loan outstanding under our Loan and Security Agreement. Therefore, SVB Leerink LLC is deemed to have a conflict of interest under Rule 5121 ("Rule 5121") of the Financial Industry Regulatory Authority, Inc. ("FINRA"). Accordingly, this offering is being made in compliance with the requirements of Rule 5121. The appointment of a qualified independent underwriter is not required in connection with this offering as a bona fide public market, as defined in Rule 5121, exists for our common stock. See "Use of Proceeds" and "Underwriting (Conflicts of Interest)."

The number of shares of common stock to be outstanding immediately after this offering is based on 41,509,240 shares outstanding as of March 31, 2019 and excludes:

5,847,645 shares of our common stock issuable upon the exercise of stock options outstanding as of March 31, 2019, with a weighted-average exercise price of \$9.48 per share;

110,300 shares of our common stock issuable upon the exercise of stock options granted after March 31, 2019, with a weighted-average exercise price of \$24.14 per share;

S-4

Table of Contents

561,304 shares of common stock issuable upon the settlement of restricted stock units, or RSUs, outstanding as of March 31, 2019;

2,141,658 shares of common stock reserved for future issuance under our 2013 Stock Incentive Plan, as amended; and

229,218 shares of common stock reserved for future issuance under our Employee Stock Purchase Plan.

Except as otherwise indicated, all information in this prospectus supplement assumes no exercise or settlement of the outstanding stock options, RSUs or other equity awards described above and no exercise by the underwriters of their option to purchase additional shares.

Table of Contents

RISK FACTORS

Investing in shares of our common stock involves a high degree of risk. You should consider carefully the risks and uncertainties described below and in our Quarterly Report on Form 10-Q for the quarter ended March 31, 2019 incorporated by reference in this prospectus supplement and the accompanying prospectus, any amendment or update thereto reflected in our subsequent filings with the SEC, and all of the other information in this prospectus supplement and the accompanying prospectus, including our financial statements and related notes incorporated by reference in this prospectus supplement and the accompanying prospectus, before making an investment decision. If any of these risks is realized, our business, financial condition, results of operations and prospects could be materially and adversely affected. In that event, the trading price of our common stock could decline and you could lose part or all of your investment. Additional risks and uncertainties that are not yet identified or that we think are immaterial may also materially harm our business, operating results and financial condition and could result in a complete loss of your investment.

Risks Related to This Offering

Our management will have broad discretion in the use of the net proceeds from this offering and may allocate the net proceeds from this offering in ways that you and other stockholders may not approve.

Our management will have broad discretion in the use of the net proceeds, including for any of the purposes described in the section entitled **Use of Proceeds**, 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 this offering, their ultimate use may vary substantially from their currently intended use. The failure of our management to use these funds effectively could harm our business. Pending their use, we may invest the net proceeds from this offering in short- and intermediate-term, interest-bearing obligations, investment-grade instruments, certificates of deposit or direct or guaranteed obligations of the U.S. government. These investments may not yield a favorable return to our stockholders.

If you purchase shares of our common stock sold in this offering, you will experience immediate and substantial dilution in your investment. In addition, we may issue additional equity or equity-linked securities in the future, which may result in additional dilution to you.

The price per share of our common stock being offered may be higher than the net tangible book value per share of our outstanding common stock prior to this offering. Based on an assumed public offering price of \$22.87 per share, which was the last reported sale price of our shares of common stock on The Nasdaq Global Market on April 30, 2019, and our net tangible book value as of March 31, 2019 of approximately \$1.71 per share, if you purchase shares of common stock in this offering, you will suffer immediate and substantial dilution of \$19.04 per share, representing the difference between the assumed public offering price and the as adjusted net tangible book value per share of our common stock as of March 31, 2019 after giving effect to this offering. See the section entitled **Dilution** below for a more detailed discussion of the dilution you will incur if you purchase common stock in this offering.

In addition, we have a significant number of stock options to purchase common stock and RSUs outstanding, and may choose to issue additional common stock, or securities convertible into or exchangeable for common stock, in the future. In the event that the outstanding stock options or RSUs are exercised or settled, or that we make additional issuances of common stock or other convertible or exchangeable securities, you could experience additional dilution. Furthermore, we cannot assure you that we will be able to issue shares or other securities in any other offering at a price per share that is equal to or greater than the price per share paid by investors in this offering, and investors purchasing our securities in the future may have rights superior to investors purchasing shares in this offering.

S-6

Table of Contents

Future sales of shares of our common stock by our existing stockholders could cause our stock price to decline.

Sales of a substantial number of shares of our common stock in the public market, or the perception that these sales might occur, could depress the market price of our common stock and could impair our ability to raise capital through the sale of additional equity securities. Further, we have a significant number of stock options and RSUs outstanding. As of March 31, 2019, we had 41,509,240 shares of outstanding common stock, of which approximately 424,425 shares and an additional 3,293,710 shares underlying stock options and RSUs are subject to restrictions on transfer under 90-day lock-up arrangements with the underwriters of this offering. These shares will become eligible for public sale at the expiration of the lock-up period, subject to vesting requirements and volume limitations applicable to affiliates. If a substantial number of shares of common stock, including shares of common stock underlying outstanding stock options and RSUs, are sold, or if it is perceived that they will be sold, in the public market, it could have an adverse impact on the market price of our common stock.

Furthermore, certain of our executive officers have adopted, and other directors and executive officers may in the future adopt, written trading plans that are intended to comply with Rule 10b5-1 under the Exchange Act, under which they have contracted, or may in the future contract, with a broker to sell shares of our common stock. Sales of substantial amounts of our common stock in the public markets during the lock-up period pursuant to existing Rule 10b5-1 plans or pursuant to new Rule 10b5-1 plans following the expiration of the lock-up period or otherwise, or the perception that these sales could occur, could cause the market price of our common stock to decline. We are unable to predict the effect that sales may have on the prevailing market price of our common stock.

Affiliates of SVB Leerink LLC, an underwriter in this offering, may receive at least 5% of the net proceeds of this offering and may have an interest in this offering beyond customary underwriting discounts and commissions.

Affiliates of SVB Leerink LLC, an underwriter in this offering, will receive at least 5% of the net proceeds of this offering in connection with the repayment of approximately \$12.4 million of the term loan outstanding under our Loan and Security Agreement. Therefore, SVB Leerink LLC is deemed to have a conflict of interest under Rule 5121. Accordingly, this offering is being made in compliance with the requirements of Rule 5121. Although the appointment of a qualified independent underwriter is not required in connection with this offering, as a bona fide public market, as defined in Rule 5121, exists for our common stock, we cannot assure you that this will adequately address all potential conflicts of interest. In accordance with Rule 5121, SVB Leerink LLC will not confirm sales of securities to any account over which it exercises discretionary authority without the prior written approval of the account holder. See the section titled "Use of Proceeds" for additional information.

Table of Contents

FORWARD-LOOKING STATEMENTS

This prospectus supplement, the accompanying prospectus and the documents we have filed with the SEC that are incorporated by reference in this prospectus supplement and the accompanying prospectus contain forward-looking statements that involve risks and uncertainties. These statements relate to future periods, future events or our future operating or financial plans or performance. These statements can often be identified by the use of forward-looking terminology such as expects, believes, anticipates, estimates, plans, may, could, will, intends or the terms, and other similar expressions and include statements as to the estimated market opportunities for our products, and our intentions with respect to the use of the net proceeds from this offering. We have based these forward-looking statements on our current expectations and projections about future events and trends that we believe may affect our financial condition, results of operations, strategy, short- and long-term business operations and objectives, and financial needs. These statements are subject to known and unknown risks, uncertainties and assumptions that could cause actual results to differ materially from those projected or otherwise implied by the forward-looking statements, including the following: our expectations regarding our ability to expand commercialization of our Percepta and Envisia Genomic Classifiers, our expectations regarding our strategic collaboration with Johnson & Johnson; the future performance and acceptance of our Afirma, Percepta and Envisia classifiers and our Afirma Xpression Atlas platform; our dependence on a few payers for reimbursements and payments of our tests and a significant portion of our revenue; the complexity, time and expense associated with billing and collecting from payers for our classifiers; our ability to increase usage of and reimbursement for the Afirma, Percepta and Envisia classifiers, as well as any future products we may develop or sell; our dependence on physicians and patients who decide whether to order and use our tests; the fluctuation of our quarterly operating results; our ability to comply with federal and state licensing requirements and other laws and regulations applicable to our business, including potential regulation by the Food and Drug Administration or other regulatory bodies; our dependence on sole suppliers for equipment and other materials used for our tests; our ability to develop and commercialize new products and the timing and speed of commercialization; the amount by which use of our products may be able to reduce invasive procedures and reduce healthcare costs; our ability to attract and retain key personnel; our ability to achieve sales penetration in complex commercial accounts; the occurrence and outcome of clinical studies; the timing and publication of study results; the applicability of clinical results to actual outcomes; the continued application of clinical guidelines to our products and their inclusion in such clinical practice guidelines; our ability to compete; our ability to obtain capital when needed, the expected use of proceeds from this offering and other statements that are not historical facts. Given these risks, uncertainties and assumptions, you should not place undue reliance on these forward-looking statements. We discuss in greater detail, and incorporate by reference into this prospectus supplement and the accompanying prospectus, many of these risks, uncertainties and assumptions see the section titled Risk Factors. Additional cautionary statements or discussions of risks, uncertainties and assumptions that could affect our results or the achievement of the expectations described in forward-looking statements are also contained in the documents we incorporate by reference into this prospectus supplement and the accompanying prospectus.

Any forward-looking statement made by us in this prospectus supplement, the accompanying prospectus, or any of the documents incorporated by reference in this prospectus supplement and the accompanying prospectus speaks only as of the date on which it was made. We expressly disclaim any obligation or undertaking to release publicly any updates or revisions to any forward-looking statements contained herein to reflect any change in our expectations with regard thereto or any change in events, conditions or circumstances on which any such statement is based. You should, however, review additional disclosures we make in our Annual Report on Form 10-K, Quarterly Reports on Form 10-Q, and Current Reports on Form 8-K filed with the SEC.

You should read this prospectus supplement, the accompanying prospectus, and the documents that we reference in this prospectus supplement and the accompanying prospectus completely and with the understanding that our actual future results, levels of activity, performance and events and circumstances may be materially different from what we

expect. We qualify all of our forward-looking statements by these cautionary statements.

S-8

Table of Contents

This prospectus supplement, the accompanying prospectus, and the documents that we reference in this prospectus and the accompanying prospectus also contain statistical data and estimates that we obtained from industry publications and reports. These publications typically indicate that they have obtained their information from sources they believe to be reliable, but do not guarantee the accuracy and completeness of their information. You are cautioned not to give undue weight to those data and estimates. Projections, assumptions and estimates of future performance are necessarily subject to risks and uncertainties that could cause actual results to differ materially.

S-9

Table of Contents

USE OF PROCEEDS

We estimate that the net proceeds from the sale of 5,000,000 shares of our common stock in this offering, at an assumed public offering price of \$22.87 per share, which was the last reported sale price of our shares of common stock on The Nasdaq Global Market on April 30, 2019, will be approximately \$107.1 million, after deducting the estimated underwriting discounts and commissions and estimated offering expenses we expect to pay. If the underwriters exercise their option to purchase 750,000 additional shares in full, we estimate that our net proceeds will be approximately \$123.2 million, after deducting the estimated underwriting discounts and commissions and estimated offering expenses we expect to pay.

We intend to use the net proceeds from this offering for working capital and other general corporate purposes. As a result, our management will have broad discretion in the way that we use the net proceeds and investors will be relying on our judgment regarding the application of the net proceeds of this offering. We also intend to use a portion of the net proceeds we receive from this offering to repay approximately \$12.4 million of the term loan outstanding under our Loan and Security Agreement. We may also use a portion of the net proceeds from this offering to acquire or invest in complementary businesses, technologies or other assets, although we have no present commitments or agreements to do so. Pending the application of net proceeds, we expect to invest the net proceeds in short- and intermediate-term, interest-bearing obligations, investment-grade instruments, certificates of deposit or direct or guaranteed obligations of the U.S. government.

The term loan outstanding under our Loan and Security Agreement bears interest at a variable rate equal to (i) the thirty-day U.S. London Interbank Offer Rate plus (ii) 4.20%, with a minimum rate of 5.43% per annum. The effective interest rate for the outstanding balance under the Loan and Security Agreement was 9.39% as of March 31, 2019, and the maturity date of the Loan and Security Agreement is October 1, 2022. See the section of our Annual Report on Form 10-K for the year ended December 31, 2018 titled *Management's Discussion and Analysis of Financial Condition and Results of Operations* *Liquidity and Capital Resources* *Loan and Security Agreement* for additional information regarding our Loan and Security Agreement.

Each \$1.00 increase (decrease) in the assumed public offering price of \$22.87 per share would increase (decrease) the net proceeds to us from this offering by approximately \$4.7 million, assuming that the number of shares offered by us, as set forth on the cover page of this preliminary prospectus supplement, remains the same, and after deducting the estimated underwriting discounts and commissions. Each increase (decrease) of 1.0 million shares in the number of shares of common stock offered by us would increase (decrease) the net proceeds to us from this offering by approximately \$21.5 million, assuming that the assumed public offering price remains the same, and after deducting the estimated underwriting discounts and commissions.

Table of Contents**DILUTION**

If you invest in our common stock in this offering, your ownership interest will be diluted to the extent of the difference between the price per share of our common stock you pay in this offering and the net tangible book value per share of our common stock immediately after this offering.

Our net tangible book value as of March 31, 2019 was approximately \$71.0 million, or \$1.71 per share of our common stock. Net tangible book value per share is calculated by subtracting our total liabilities from our total tangible assets, which is total assets less intangible assets, and dividing this amount by the number of shares of our common stock outstanding.

After giving effect to (i) the sale by us of 5,000,000 shares of our common stock at an assumed public offering price of \$22.87 per share, which was the last reported sale price of our shares of common stock on The Nasdaq Global Market on April 30, 2019, and after deducting the estimated underwriting discounts and commissions and estimated offering expenses we expect to pay and (ii) the application of such proceeds as described in the section titled "Use of Proceeds," our as adjusted net tangible book value as of March 31, 2019 would have been approximately \$178.1 million, or \$3.83 per share of our common stock. This represents an immediate increase in the net tangible book value of \$2.12 per share to our existing stockholders and an immediate and substantial dilution in net tangible book value of \$19.04 per share to new investors.

The following table illustrates this per share dilution:

Assumed public offering price per share	\$ 22.87
Net tangible book value per share as of March 31, 2019	\$ 1.71
Increase in as adjusted net tangible book value per share attributable to new investors	2.12
As adjusted net tangible book value per share after this offering	3.83
Dilution per share to new investors participating in this offering	\$ 19.04

Each \$1.00 increase (decrease) in the assumed public offering price of \$22.87 per share, which was the last reported sale price of our shares of common stock on The Nasdaq Global Market on April 30, 2019, would increase (decrease) our as adjusted net tangible book value per share after this offering by \$2.22 per share, and would increase (decrease) dilution per share to new investors participating in this offering by \$19.94 per share, assuming that the number of shares offered by us, as set forth on the cover page of this preliminary prospectus supplement, remains the same, and after deducting the estimated underwriting discounts and commissions. Similarly, each increase (decrease) of 1.0 million shares in the number of shares of common stock offered by us would increase (decrease) our as adjusted net tangible book value per share after this offering by \$2.49 per share, and would increase (decrease) dilution per share to new investors participating in this offering by \$18.67 per share, assuming that the assumed public offering price remains the same, and after deducting the estimated underwriting discounts and commissions. The as adjusted information discussed above is illustrative only and will be adjusted based on the actual public offering price and other terms of this offering determined at pricing.

If the underwriters exercise in full their option to purchase up to 750,000 additional shares from us at an assumed public offering price of \$22.87 per share, the as adjusted net tangible book value per share after this offering would be \$4.11 per share and the dilution to new investors participating in this offering would be \$18.76 per share.

The calculations above are based on 41,509,240 shares of our common stock outstanding as of March 31, 2019. The number of shares of common stock outstanding as of March 31, 2019 excludes:

5,847,645 shares of our common stock issuable upon the exercise of stock options outstanding as of March 31, 2019, with a weighted-average exercise price of \$9.48 per share;

S-11

Table of Contents

110,300 shares of our common stock issuable upon the exercise of stock options granted after March 31, 2019, with a weighted-average exercise price of \$24.14 per share;

561,304 shares of common stock issuable upon the settlement of restricted stock units, or RSUs, outstanding as of March 31, 2019;

2,141,658 shares of common stock reserved for future issuance under our 2013 Stock Incentive Plan, as amended; and

229,218 shares of common stock reserved for future issuance under our Employee Stock Purchase Plan. To the extent that any outstanding stock options have been or may be exercised, RSUs are settled or other shares are issued, investors purchasing our common stock in this offering may experience further dilution. In addition, we may choose to issue additional common stock, or securities convertible into or exchangeable for common stock, in the future. The issuance of these securities could result in further dilution to investors participating in this offering.

Table of Contents

DIVIDEND POLICY

We have never declared or paid any cash dividends on our capital stock. We currently intend to retain any future earnings and do not expect to pay any dividends in the foreseeable future. Our Loan and Security Agreement restricts our ability to pay cash dividends on our common stock, and we may also enter into credit agreements or other borrowing arrangements in the future that will further restrict our ability to declare or pay cash dividends on our common stock. Any determination to pay dividends in the future will be at the discretion of our board of directors and will depend on our financial condition, operating results, capital requirements, general business conditions and other factors that our board of directors may deem relevant.

S-13

Table of Contents

MATERIAL UNITED STATES FEDERAL INCOME TAX CONSEQUENCES

FOR NON-U.S. HOLDERS OF OUR COMMON STOCK

The following summary describes the material U.S. federal income tax consequences of the acquisition, ownership and disposition of our common stock acquired in this offering by Non-U.S. Holders (as defined below). This discussion does not address all aspects of U.S. federal income taxes, does not discuss the potential application of the alternative minimum or Medicare Contribution tax and does not discuss state, local, U.S. federal gift and estate tax laws, except to the limited extent provided below, or non-U.S. tax consequences that may be relevant to Non-U.S. Holders in light of their particular circumstances, nor does it address U.S. federal tax consequences other than income taxes.

Special rules different from those described below may apply to certain Non-U.S. Holders that are subject to special treatment under the Internal Revenue Code of 1986, as amended, or Code, such as:

insurance companies, banks and other financial institutions;

tax-exempt organizations (including private foundations) and tax-qualified retirement plans;

foreign governments and international organizations;

broker-dealers and traders in securities;

U.S. expatriates and certain former citizens or long-term residents of the United States;

persons who acquired our common stock as compensation for services;

persons that own, or are deemed to own, more than 5% of our capital stock (except to the extent specifically set forth below);

controlled foreign corporations, passive foreign investment companies and corporations that accumulate earnings to avoid U.S. federal income tax;

persons required for U.S. federal income tax purposes to conform the timing of income accruals to their financial statements under Section 451(b) of the Code;

persons that hold our common stock as part of a straddle, hedge, conversion transaction, synthetic security integrated investment or other risk reduction strategy;

persons who do not hold our common stock as a capital asset within the meaning of Section 1221 of the Code (generally, for investment purposes);

partnerships and other pass-through entities, and investors in such pass-through entities or entities that are treated as disregarded entities for U.S. federal income tax purposes (regardless of their places of organization or formation); and

qualified foreign pension funds as defined in Section 897(l)(2) of the Code and entities all of the interests of which are held by qualified foreign pension funds.

Such Non-U.S. Holders are urged to consult their tax advisors to determine the U.S. federal, state, local and other tax consequences that may be relevant to them. Furthermore, the discussion below is based upon the provisions of the Code, and Treasury regulations, rulings and judicial decisions thereunder as of the date hereof, and such authorities may be repealed, revoked or modified, possibly retroactively, and are subject to differing interpretations which could result in U.S. federal income tax consequences different from those discussed below. We have not requested a ruling from the Internal Revenue Service, or IRS, with respect to the statements made and the conclusions reached in the following summary, and there can be no assurance that the IRS will agree with such statements and conclusions or will not take a contrary position regarding the tax consequences of the acquisition, ownership, and disposition of our common stock, or that any such contrary position would not be sustained by a court.

Table of Contents

PERSONS CONSIDERING THE PURCHASE OF OUR COMMON STOCK PURSUANT TO THIS OFFERING SHOULD CONSULT THEIR TAX ADVISORS CONCERNING THE U.S. FEDERAL INCOME TAX CONSEQUENCES OF ACQUIRING, OWNING AND DISPOSING OF OUR COMMON STOCK IN LIGHT OF THEIR PARTICULAR SITUATIONS AS WELL AS ANY CONSEQUENCES ARISING UNDER THE LAWS OF ANY OTHER TAXING JURISDICTION, INCLUDING ANY STATE, LOCAL OR NON-U.S. TAX CONSEQUENCES OR ANY U.S. FEDERAL NON-INCOME TAX CONSEQUENCES, AND THE POSSIBLE APPLICATION OF TAX TREATIES.

For the purposes of this discussion, a **Non-U.S. Holder** is, for U.S. federal income tax purposes, a beneficial owner of common stock that is not a U.S. Holder or a partnership for U.S. federal income tax purposes. A **U.S. Holder** means a beneficial owner of our common stock that is for U.S. federal income tax purposes (a) an individual citizen or resident of the United States (as determined under U.S. federal income tax rules), (b) a corporation or other entity taxable 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, (c) an estate the income of which is subject to U.S. federal income taxation regardless of its source or (d) a trust if it (1) is subject to the primary supervision of a court within the United States and one or more U.S. persons (within the meaning of Section 7701(a)(30) of 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 U.S. person.

If you are an individual non-U.S. citizen, you may, in some cases, be deemed to be a resident alien (as opposed to a nonresident alien) by virtue of being present in the United States for at least 31 days in the calendar year and for an aggregate of at least 183 days during a three-year period ending in the current calendar year. Generally, for this purpose, all the days present in the current year, one-third of the days present in the immediately preceding year, and one-sixth of the days present in the second preceding year, are counted.

Resident aliens are generally subject to U.S. federal income tax as if they were U.S. citizens. Individuals who are uncertain of their status as resident or nonresident aliens for U.S. federal income tax purposes are urged to consult their tax advisors regarding the U.S. federal income tax consequences of the ownership or disposition of our common stock.

Distributions

We do not expect to declare or make any distributions on our common stock in the foreseeable future. If we do make distributions on our common stock, however, such distributions made to a Non-U.S. Holder of our common stock will constitute dividends for U.S. tax purposes to the extent paid out of our current or accumulated earnings and profits (as determined under U.S. federal income tax principles). Distributions in excess of our current and accumulated earnings and profits will constitute a return of capital that is applied against and reduces, but not below zero, a Non-U.S. Holder's adjusted tax basis in our common stock. Any remaining excess will be treated as gain realized on the sale or exchange of our common stock as described below under the section titled **Gain on Disposition of our Common Stock**.

Any distribution on our common stock that is treated as a dividend paid to a Non-U.S. Holder that is not effectively connected with the holder's conduct of a trade or business in the United States will generally be subject to withholding tax at a 30% rate or such lower rate as may be specified by an applicable income tax treaty between the United States and the Non-U.S. Holder's country of residence. To obtain a reduced rate of withholding under a treaty, a Non-U.S. Holder generally will be required to provide us with a properly executed IRS Form W-8BEN, IRS Form W-8BEN-E or other appropriate form, certifying the Non-U.S. Holder's entitlement to benefits under that treaty. Such form must be provided prior to the payment of dividends and must be updated periodically. If a Non-U.S. Holder holds stock

through a financial institution or other agent acting on the holder's behalf, the holder will be required to provide appropriate documentation to such agent. The holder's agent may then be required to provide certification to us or our paying agent, either directly or through other intermediaries. If you are eligible for a reduced rate of U.S. federal withholding tax under an income tax treaty,

S-15

Table of Contents

you should consult with your tax advisor to determine if you are able to obtain a refund or credit of any excess amounts withheld by timely filing an appropriate claim for a refund with the IRS.

We generally are not required to withhold tax on dividends paid to a Non-U.S. Holder that are effectively connected with the holder's conduct of a trade or business within the United States (and, if required by an applicable income tax treaty, are attributable to a permanent establishment that the holder maintains in the United States) if a properly executed IRS Form W-8ECI, stating that the dividends are so connected, is furnished to us (or, if stock is held through a financial institution or other agent, to the agent). In general, such effectively connected dividends will be subject to U.S. federal income tax on a net income basis at the regular graduated rates applicable to U.S. persons, unless a specific treaty exemption applies. A corporate Non-U.S. Holder receiving effectively connected dividends may also be subject to an additional branch profits tax, which is imposed, under certain circumstances, at a rate of 30% (or such lower rate as may be specified by an applicable treaty) on the corporate Non-U.S. Holder's effectively connected earnings and profits, subject to certain adjustments.

See also the section below entitled **Foreign Accounts** for additional withholding rules that may apply to dividends paid to foreign financial institutions or non-financial foreign entities.

Gain on Disposition of Our Common Stock

Subject to the discussion below under the sections titled **Backup Withholding and Information Reporting** and **Foreign Accounts**, a Non-U.S. Holder generally will not be subject to U.S. federal income tax with respect to gain realized on a sale or other disposition of our common stock unless (a) the gain is effectively connected with a trade or business of the holder in the United States (and, if required by an applicable income tax treaty, is attributable to a permanent establishment that the holder maintains in the United States), (b) the Non-U.S. Holder is a nonresident alien individual and is present in the United States for 183 or more days in the taxable year of the disposition and certain other conditions are met, or (c) we are or have been a United States real property holding corporation within the meaning of Code Section 897(c)(2) at any time within the shorter of the five-year period preceding such disposition or the holder's holding period in the common stock.

If you are a Non-U.S. Holder described in (a) above, you will be required to pay tax on the net gain derived from the sale at the regular graduated U.S. federal income tax rates applicable to U.S. persons, unless a specific treaty exemption applies. Corporate Non-U.S. Holders described in (a) above may also be subject to the additional branch profits tax at a 30% rate or such lower rate as may be specified by an applicable income tax treaty. If you are an individual Non-U.S. Holder described in (b) above, you will be required to pay a flat 30% tax on the gain derived from the sale, which gain may be offset by certain U.S. source capital losses (even though you are not considered a resident of the United States), provided you have timely filed U.S. federal income tax returns with respect to such losses. With respect to (c) above, in general, we would be a U.S. real property holding corporation if interests in U.S. real estate comprised (by fair market value) at least half of our assets. We believe that we are not, and do not anticipate becoming, a U.S. real property holding corporation. However, there can be no assurance that we will not become a U.S. real property holding corporation in the future. Even if we are treated as a U.S. real property holding corporation, gain realized by a Non-U.S. Holder on a disposition of our common stock will not be subject to U.S. federal income tax so long as (1) the Non-U.S. Holder owned, directly, indirectly or constructively, no more than five percent of our common stock at all times within the shorter of (i) the five-year period preceding the disposition or (ii) the holder's holding period and (2) our common stock is regularly traded on an established securities market. There can be no assurance that our common stock will qualify as regularly traded on an established securities market.

U.S. Federal Estate Tax

The estates of nonresident alien individuals generally are subject to U.S. federal estate tax on property with a U.S. situs. Because we are a U.S. corporation, our common stock will be U.S. situs property and therefore will be

S-16

Table of Contents

included in the taxable estate of a nonresident alien decedent, unless an applicable estate tax treaty between the United States and the decedent's country of residence provides otherwise. The terms "resident" and "nonresident" are defined differently for U.S. federal estate tax purposes than for U.S. federal income tax purposes. Investors are urged to consult their tax advisors regarding the U.S. federal estate tax consequences of the ownership or disposition of our common stock.

Backup Withholding and Information Reporting

Generally, we or certain financial middlemen must report information to the IRS with respect to any dividends we pay on our common stock including the amount of any such dividends, the name and address of the recipient, and the amount, if any, of tax withheld. A similar report is sent to the holder to whom any such dividends are paid. Pursuant to tax treaties or certain other agreements, the IRS may make its reports available to tax authorities in the recipient's country of residence.

Dividends paid by us (or our paying agents) to a Non-U.S. Holder may also be subject to U.S. backup withholding. U.S. backup withholding generally will not apply to a Non-U.S. Holder who provides a properly executed IRS Form W-8BEN, IRS Form W-8BEN-E or IRS Form W-8ECI, as applicable, or otherwise establishes an exemption, provided that the applicable withholding agent does not have actual knowledge or reason to know the holder is a U.S. person.

Under current U.S. federal income tax law, U.S. information reporting and backup withholding requirements generally will apply to the proceeds of a disposition of our common stock effected by or through a U.S. office of any broker, U.S. or non-U.S., unless the Non-U.S. Holder provides a properly executed IRS Form W-8BEN, IRS Form W-8BEN-E or IRS Form W-8ECI, as applicable, or otherwise meets documentary evidence requirements for establishing Non-U.S. Holder status or otherwise establishes an exemption. Generally, U.S. information reporting and backup withholding requirements will not apply to a payment of disposition proceeds to a Non-U.S. Holder where the transaction is effected outside the United States through a non-U.S. office of a non-U.S. broker. Information reporting and backup withholding requirements may, however, apply to a payment of disposition proceeds if the broker has actual knowledge, or reason to know, that the holder is, in fact, a U.S. person. For information reporting purposes, certain brokers with substantial U.S. ownership or operations will generally be treated in a manner similar to U.S. brokers.

Backup withholding is not an additional tax. If backup withholding is applied to you, you should consult with your tax advisor to determine whether you have overpaid your U.S. federal income tax, and whether you are able to obtain a tax refund or credit of the overpaid amount.

Foreign Accounts

In addition to, and separately from, the withholding rules described above, U.S. federal withholding taxes at a rate of 30% may apply under the law commonly known as the Foreign Account Tax Compliance Act, or FATCA, on certain types of payments, including dividends, made to (A) a foreign financial institution (as defined for this purpose) unless such institution (i) is exempt from FATCA withholding pursuant to an applicable intergovernmental agreement between the jurisdiction in which it is located and the United States, (ii) enters into an agreement with the U.S. government to collect and provide to the U.S. tax authorities information regarding U.S. account holders of such institution or (iii) meets other exemptions or (B) a non-financial foreign entity (as defined for this purpose), unless such entity (i) is exempt from FATCA withholding pursuant to an applicable intergovernmental agreement between the jurisdiction in which it is located and the United States, (ii) provides the withholding agent with a certification identifying any substantial U.S. owners of the entity (as defined for this purpose), (iii) certifies that it does not have

any substantial U.S. owners or (iv) meets other exemptions. Foreign financial institutions located in jurisdictions that have an intergovernmental agreement with the United States governing FATCA may be subject to different rules.

S-17

Table of Contents

Under applicable Treasury Regulations and IRS guidance, FATCA withholding as described above currently applies to payments of dividends on our common stock. Additionally, under the applicable Treasury Regulations and administrative guidance, withholding under FATCA generally also would apply to payments of gross proceeds from the sale or other disposition of common stock on or after January 1, 2019. Under recently proposed regulations, however, no withholding will apply with respect to payments of gross proceeds. The preamble to the proposed regulations specifies that taxpayers are permitted to rely on such proposed regulations pending finalization.

Prospective investors should consult their tax advisors regarding the potential application of withholding under FATCA to their investment in our common stock.

EACH PROSPECTIVE INVESTOR SHOULD CONSULT ITS TAX ADVISOR REGARDING THE TAX CONSEQUENCES OF PURCHASING, HOLDING AND DISPOSING OF OUR COMMON STOCK, INCLUDING THE CONSEQUENCES OF ANY PROPOSED CHANGE IN APPLICABLE LAW, AS WELL AS TAX CONSEQUENCES ARISING UNDER ANY STATE, LOCAL, NON-U.S. OR U.S. FEDERAL NON-INCOME TAX LAWS SUCH AS ESTATE AND GIFT TAX.

S-18

Table of Contents**UNDERWRITING (CONFLICT OF INTEREST)**

Under the terms and subject to the conditions in an underwriting agreement dated the date of this prospectus supplement, the underwriters named below, for whom Morgan Stanley & Co. LLC and SVB Leerink LLC are acting as representatives, have severally agreed to purchase, and we have agreed to sell to them, severally, the number of shares indicated below:

Underwriter	Number of Shares
Morgan Stanley & Co. LLC	
SVB Leerink LLC	
William Blair & Company, L.L.C.	
BTIG, LLC	
Janney Montgomery Scott LLC	
Total	5,000,000

The underwriters and the representatives are collectively referred to as the underwriters and the representatives, respectively. The underwriters are offering the shares of common stock subject to their acceptance of the shares from us and subject to prior sale. The underwriting agreement provides that the obligations of the several underwriters 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 their counsel and to certain other conditions. The underwriters are 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 underwriters are not required to take or pay for the shares covered by the underwriters' option to purchase additional shares described below.

The underwriters initially propose to offer part of the shares of common stock directly to the public at the offering price listed on the cover page of this prospectus supplement and part to certain dealers at a price that represents a concession not in excess of \$ per share under the public offering price. After the initial offering of the shares of common stock, the offering price and other selling terms may from time to time be varied by the representative.

We have granted to the underwriters an option, exercisable for 30 days from the date of this prospectus supplement, to purchase up to 750,000 additional shares of common stock at the public offering price listed on the cover page of this prospectus supplement, less underwriting discounts and commissions. To the extent the option is exercised, each underwriter will become obligated, subject to certain conditions, to purchase about the same percentage of the additional shares of common stock as the number listed next to the underwriter's name in the preceding table bears to the total number of shares of common stock listed next to the names of all underwriters in the preceding table.

The following table shows the per share and total public offering price, underwriting discounts and commissions, and proceeds before expenses to us. These amounts are shown assuming both no exercise and full exercise of the underwriters' option to purchase up to an additional 750,000 shares of common stock.

Total

	Per Share	No Exercise	Full Exercise
Public offering price	\$	\$	\$
Underwriting discounts and commissions to be paid by us	\$	\$	\$
Proceeds, before expenses, to us	\$	\$	\$

The estimated offering expenses payable by us, exclusive of the underwriting discounts and commissions, are approximately \$365,000. We have agreed to reimburse the underwriters for expense relating to clearance of this offering with FINRA up to \$15,000.

S-19

Table of Contents

The underwriters have informed us that they do not intend sales to discretionary accounts to exceed 5% of the total number of shares of common stock offered by them.

Our common stock has been approved for quotation on the Nasdaq Global Market under the trading symbol VCYT.

We, and our executive officers and directors, and certain stockholders affiliated with our executive officers and directors, have agreed not to sell or transfer any common stock or securities convertible into or exchangeable or exercisable for common stock, for 90 days after the date of this prospectus supplement without first obtaining the written consent of Morgan Stanley & Co. LLC and SVB Leerink LLC on behalf of the underwriters. Specifically, we and these other persons have agreed, with certain limited exceptions including sales pursuant to existing 10b5-1 trading plans, not to directly or indirectly:

offer, pledge, sell or contract to sell any common stock;

sell any option or contract to purchase any common stock;

purchase any option or contract to sell any common stock;

grant any option, right or warrant for the sale of any common stock;

otherwise dispose of or transfer any common stock;

make any demand for or exercise any right with respect to the registration of any shares of common stock; or

enter into any swap or any other agreement or any transaction that transfers, in whole or in part, directly or indirectly, the economic consequence of ownership of any common stock, whether any such swap or transaction is to be settled by delivery of shares of common stock or other securities, in cash or otherwise.

This lock-up provision applies to common stock and to securities convertible into or exchangeable or exercisable for common stock. It also applies to common stock owned now or acquired later by the person executing the agreement or for which the person executing the agreement later acquires the power of disposition. Morgan Stanley & Co. LLC and SVB Leerink LLC, in their sole discretion, may release the common stock and other securities subject to the lock-up agreements described above in whole or in part at any time.

In order to facilitate the offering of the common stock, the underwriters may engage in transactions that stabilize, maintain or otherwise affect the price of the common stock. Specifically, the underwriters may sell more shares than they are obligated to purchase under the underwriting agreement, creating a short position. A short sale is covered if the short position is no greater than the number of shares available for purchase by the underwriters under the option. The underwriters can close out a covered short sale by exercising the option or purchasing shares in the open market. In determining the source of shares to close out a covered short sale, the underwriters will consider, among other things, the open market price of shares compared to the price available under the option. The underwriters may also

sell shares in excess of the option, creating a naked short position. The underwriters 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 underwriters are concerned that there may be downward pressure on the price of the common stock in the open market after pricing that could adversely affect investors who purchase in this offering. As an additional means of facilitating this offering, the underwriters may bid for, and purchase, shares of common stock in the open market to stabilize the price of the common stock. These activities may raise or maintain the market price of the common stock above independent market levels or prevent or retard a decline in the market price of the common stock. The underwriters are not required to engage in these activities and may end any of these activities at any time.

We and the underwriters have agreed to indemnify each other against certain liabilities, including liabilities under the Securities Act.

S-20

Table of Contents

A prospectus supplement in electronic format may be made available on websites maintained by one or more underwriters, or selling group members, if any, participating in this offering. The representative may agree to allocate a number of shares of common stock to underwriters for sale to their online brokerage account holders. Internet distributions will be allocated by the representative to underwriters that may make Internet distributions on the same basis as other allocations.

The underwriters and their respective 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. Certain of the underwriters and their respective affiliates have, from time to time, performed, and may in the future perform, various financial advisory and investment banking services for us, for which they received or will receive customary fees and expenses.

In addition, in the ordinary course of their various business activities, the underwriters and their respective 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 may at any time hold long and short positions in such securities and instruments. Such investment and securities activities may involve our securities and instruments. The underwriters and their respective affiliates may also make investment recommendations 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 or short positions in such securities and instruments.

The underwriters and certain of their 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. Some of the underwriters and certain of their affiliates may in the future engage in investment banking and other commercial dealings in the ordinary course of business with us and our affiliates, for which they may in the future receive customary fees, commissions and expenses.

In addition, in the ordinary course of their business activities, the underwriters and their 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. Such investments and securities activities may involve securities and/or instruments of ours or our affiliates. The underwriters and their affiliates may also make investment recommendations and/or publish or express independent research views in respect of such securities or financial instruments and may hold, or recommend to clients that they acquire, long and/or short positions in such securities and instruments.

Affiliates of SVB Leerink LLC, an underwriter in this offering, will receive at least 5% of the net proceeds of this offering in connection with the repayment of approximately \$12.4 million of the term loan outstanding under our Loan and Security Agreement. Therefore, SVB Leerink LLC is deemed to have a conflict of interest under FINRA Rule 5121. Accordingly, this offering is being made in compliance with the requirements of Rule 5121. The appointment of a qualified independent underwriter is not required in connection with this offering as a bona fide public market, as defined in Rule 5121, exists for our common stock. In accordance with Rule 5121, SVB Leerink LLC will not confirm any sales to any account over which it exercises discretionary authority without the specific written approval of the transaction from the account holder. See Use of Proceeds.

Selling Restrictions

European Economic Area

In relation to each Member State of the European Economic Area which has implemented the Prospectus Directive (each, a Relevant Member State) an offer to the public of any shares of our common stock may not be

S-21

Table of Contents

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 100 or, if the Relevant Member State has implemented the relevant provision of the 2010 PD Amending Directive, 150 natural or legal persons (other than qualified investors as defined in the Prospectus Directive), as permitted under the Prospectus Directive, subject to obtaining the prior consent of the representatives; or
- 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.

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 Member State by any measure implementing the Prospectus Directive in that Member State, the expression Prospectus Directive means Directive 2003/71/EC (and amendments thereto, including the 2010 PD Amending Directive, to the extent implemented in the Relevant Member State), and includes any relevant implementing measure in the Relevant Member State, and the expression 2010 PD Amending Directive means Directive 2010/73/EU.

MiFID II Product Governance

Any person offering, selling or recommending the shares (each, a distributor) should take into consideration the manufacturers target market assessment; however, a distributor subject to MiFID II is responsible for undertaking its own target market assessment in respect of the shares (by either adopting or refining the manufacturers target market assessment) and determining appropriate distribution channels.

United Kingdom

Each underwriter has represented and agreed that:

- A. 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 the Financial Services and Markets Act 2000 (FSMA)) received by it in connection with the issue or sale of the shares of our common stock in circumstances in which Section 21(1) of the FSMA does not apply to us; and
- B.

it has complied and will comply with all applicable provisions of the FSMA with respect to anything done by it in relation to the shares of our common stock in, from or otherwise involving the United Kingdom.

Notice to Prospective Investors in Canada

The shares may be sold only to purchasers purchasing, or deemed to be purchasing, as principal that are accredited investors, as defined in National Instrument 45-106 Prospectus Exemptions or subsection 73.3(1) of the Securities Act (Ontario), and are permitted clients, as defined in National Instrument 31-103 Registration Requirements, Exemptions and Ongoing Registrant Obligations. Any resale of the shares must be made in accordance with an exemption from, or in a transaction not subject to, the prospectus requirements of applicable securities laws.

S-22

Table of Contents

Securities legislation in certain provinces or territories of Canada may provide a purchaser with remedies for rescission or damages if this prospectus supplement and accompanying prospectus (including any amendment thereto) 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 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.

Pursuant to section 3A.3 of National Instrument 33-105 Underwriting Conflicts (NI 33-105), the underwriters are not required to comply with the disclosure requirements of NI 33-105 regarding underwriter conflicts of interest in connection with this offering.

Notice to Prospective Investors in France

Neither this prospectus supplement nor any other offering material relating to the shares described in this prospectus supplement has been submitted to the clearance procedures of the Autorité des Marchés Financiers or of the competent authority of another member state of the European Economic Area and notified to the Autorité des Marchés Financiers. The shares have not been offered or sold and will not be offered or sold, directly or indirectly, to the public in France. Neither this prospectus supplement nor any other offering material relating to the shares has been or will be:

released, issued, distributed or caused to be released, issued or distributed to the public in France; or

used in connection with any offer for subscription or sale of the shares to the public in France.

Such offers, sales and distributions will be made in France only:

to qualified investors (investisseurs qualifiés) or to a restricted circle of investors (cercle restreint d'investisseurs), in each case investing for their own account, all as defined in, and in accordance with articles L.411-2, D.411-1, D.411-2, D.734-1, D.744-1, D.754-1 and D.764-1 of the French Code monétaire et financier;

to investment services providers authorized to engage in portfolio management on behalf of third parties; or in a transaction that, in accordance with article L.411-2-II-1°-or-2°-or 3° of the French Code monétaire et financier and article 211-2 of the General Regulations (Règlement Général) of the Autorité des Marchés Financiers, does not constitute a public offer (appel public à l'épargne).

The shares may be resold directly or indirectly, only in compliance with articles L.411-1, L.411-2, L.412-1 and L.621-8 through L.621-8-3 of the French Code monétaire et financier.

Notice to Prospective Investors in Hong Kong

The shares may not be offered or sold in Hong Kong by means of any document other than (1) in circumstances which do not constitute an offer to the public within the meaning of the Companies Ordinance (Cap. 32, Laws of Hong Kong), (2) to professional investors within the meaning of the Securities and Futures Ordinance (Cap. 571, Laws of

Hong Kong) and any rules made thereunder, or (3) in other circumstances which do not result in the document being a prospectus within the meaning of the Companies Ordinance (Cap. 32, Laws of Hong Kong) and no advertisement, invitation or document relating to the shares 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 in Hong Kong (except if permitted to do so under the laws of Hong Kong) other than with respect to shares which are or are intended to be disposed of only to persons outside Hong Kong or only to professional investors within the meaning of the Securities and Futures Ordinance (Cap. 571, Laws of Hong Kong) and any rules made thereunder.

S-23

Table of Contents

Notice to Prospective Investors in Japan

No registration pursuant to Article 4, paragraph 1 of the Financial Instruments and Exchange Law of Japan (Law No. 25 of 1948, as amended) (the FIEL) has been made or will be made with respect to the solicitation of the application for the acquisition of the shares of common stock.

Accordingly, the shares of common stock have not been, directly or indirectly, offered or sold and will not be, directly or indirectly, offered or sold in Japan or to, or for the benefit of, any resident of Japan (which term as used herein means any person resident in Japan, including any corporation or other entity organized under the laws of Japan) or to others for re-offering or re-sale, directly or indirectly, in Japan or to, or for the benefit of, any resident of Japan except pursuant to an exemption from the registration requirements, and otherwise in compliance with, the FIEL and the other applicable laws and regulations of Japan.

Notice to Prospective Investors in Singapore

This prospectus supplement and the accompanying prospectuses have not been registered as a prospectus with the Monetary Authority of Singapore. Accordingly, this prospectus supplement and the accompanying prospectuses and any other document or material in connection with the offer or sale, or invitation for subscription or purchase, of the shares may not be circulated or distributed, nor may the shares 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 (1) to an institutional investor under Section 274 of the Securities and Futures Act, Chapter 289 of Singapore, or the SFA, (2) to a relevant person 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 (3) 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.

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

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

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, shares, debentures and units of shares and debentures 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 shares pursuant to an offer made under Section 275 of the SFA except:

to an institutional investor (for corporations, under Section 274 of the SFA) or to a relevant person defined in Section 275(2) of the SFA, or to any person pursuant to an offer that is made on terms that such shares, debentures and units of shares and debentures of that corporation or such rights and interest in that trust are acquired at a consideration of not less than S\$200,000 (or its equivalent in a foreign currency) for each transaction, whether such amount is to be paid for in cash or by exchange of securities or other assets, and further for corporations, in accordance with the conditions specified in Section 275 of the SFA;

where no consideration is or will be given for the transfer; or

where the transfer is by operation of law.

Notice to Prospective Investors in Australia

No prospectus or other disclosure document (as defined in the Corporations Act 2001 (Cth) of Australia, or the Corporations Act) in relation to the common stock has been or will be lodged with the Australian Securities &

S-24

Table of Contents

Investments Commission, or ASIC. This document has not been lodged with ASIC and is only directed to certain categories of exempt persons. Accordingly, if you receive this document in Australia:

you confirm and warrant that you are either:

a sophisticated investor under section 708(8)(a) or (b) of the Corporations Act;

a sophisticated investor under section 708(8)(c) or (d) of the Corporations Act and that you have provided an accountant's certificate to us which complies with the requirements of section 708(8)(c)(i) or (ii) of the Corporations Act and related regulations before the offer has been made;

a person associated with the company under section 708(12) of the Corporations Act; or

a professional investor within the meaning of section 708(11)(a) or (b) of the Corporations Act, and to the extent that you are unable to confirm or warrant that you are an exempt sophisticated investor, associated person or professional investor under the Corporations Act any offer made to you under this document is void and incapable of acceptance; and

you warrant and agree that you will not offer any of the common stock for resale in Australia within 12 months of that common stock being issued unless any such resale offer is exempt from the requirement to issue a disclosure document under section 708 of the Corporations Act.

S-25

Table of Contents

LEGAL MATTERS

The validity of the shares of common stock being offered hereby will be passed upon for us by Fenwick & West LLP, San Francisco, California. Certain legal matters in connection with this offering will be passed upon for the underwriters by Latham & Watkins LLP.

EXPERTS

Ernst & Young LLP, independent registered public accounting firm, has audited our financial statements included in our Annual Report on Form 10-K for the year ended December 31, 2018, and the effectiveness of our internal control over financial reporting as of December 31, 2018, as set forth in their reports, which are incorporated by reference in this prospectus and elsewhere in the registration statement. Our financial statements are incorporated by reference in reliance on Ernst & Young LLP's reports, given on their authority as experts in accounting and auditing.

WHERE YOU CAN FIND MORE INFORMATION

We have filed a registration statement on Form S-3 with the SEC under the Securities Act. This prospectus supplement and the accompanying prospectus are part of the registration statement but the registration statement includes and incorporates by reference additional information and exhibits. We file annual, quarterly and current reports, proxy statements and other information with the SEC. The SEC maintains a website that contains reports, proxy and information statements and other information regarding companies, such as ours, that file documents electronically with the SEC. The address of that site on the Internet is <http://www.sec.gov>. The information on the SEC's website is not part of this prospectus supplement or the accompanying prospectus, and any references to this website or any other website are inactive textual references only.

The SEC permits us to incorporate by reference the information contained in documents we file with the SEC, which means that we can disclose important information to you by referring you to those documents rather than by including them in this prospectus supplement or the accompanying prospectus. Information that is incorporated by reference is considered to be part of this prospectus supplement and the accompanying prospectus and you should read it with the same care that you read this prospectus supplement and the accompanying prospectus. Later information that we file with the SEC will automatically update and supersede the information that is either contained, or incorporated by reference, in this prospectus supplement and the accompanying prospectus, and will be considered to be a part of this prospectus supplement and the accompanying prospectus from the date those documents are filed. We have filed with the SEC, and incorporate by reference in this prospectus supplement and the accompanying prospectus:

our Annual Report on Form 10-K for the year ended December 31, 2018, filed with the SEC on February 25, 2019, including certain information incorporated by reference therein from our Definitive Proxy Statement for our 2019 annual meeting of stockholders filed with the SEC on April 24, 2019;

our Quarterly Reports on Form 10-Q for the quarter ended March 31, 2019, filed with the SEC on April 30, 2019;

our Current Reports on Form 8-K filed with the SEC on January 3, 2019, February 26, 2019 and April 26, 2019; and

the description of our common stock contained in our registration statement on Form 8-A filed with the SEC on October 28, 2013 under Section 12 of the Exchange Act, including any amendment or report filed for the purpose of updating such description.

We also incorporate by reference all additional documents that we file with the SEC under the terms of Section 13(a), 13(c), 14 or 15(d) of the Exchange Act that are made after the initial filing date of the registration

S-26

Table of Contents

statement of which this prospectus supplement and the accompanying prospectus is a part and the effectiveness of the registration statement, as well as between the date of this prospectus supplement and the termination of any offering of securities offered by this prospectus supplement and the accompanying prospectus. We are not, however, incorporating, in each case, any documents or information that we are deemed to furnish and not file in accordance with SEC rules.

You may request a copy of any or all of the documents incorporated by reference but not delivered with this prospectus supplement and the accompanying prospectus, at no cost, by writing or telephoning us at the following address and number: Investor Relations, Veracyte, Inc., 6000 Shoreline Court, Suite 300, South San Francisco, California 94080 and (650) 243-6300. We will not, however, send exhibits to those documents, unless the exhibits are specifically incorporated by reference in those documents.

We make available free of charge on our website our annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K and amendments to those reports, as soon as reasonably practicable after we electronically file or furnish such materials to the SEC. You may obtain a free copy of these reports on the Investor Relations section of our website, www.veracyte.com.

S-27

Table of Contents

PROSPECTUS

VERACYTE, INC.

Common Stock, Preferred Stock,

Debt Securities, Warrants,

Subscription Rights and Units

We may, from time to time, offer and sell common stock, preferred stock, debt securities, warrants, subscription rights, and/or units consisting of some or all of these securities, in any combination, together or separately, in one or more offerings. The preferred stock, debt securities and warrants may be convertible into or exercisable or exchangeable for common or preferred stock or debt securities. The subscription rights may be exercisable for common or preferred stock. We will specify in an accompanying prospectus supplement more specific information about any such offering.

In addition, certain selling securityholders to be identified in a prospectus supplement may use this prospectus from time to time to offer shares of our common stock. Unless the applicable prospectus supplement provides otherwise, we will not receive any proceeds from the sale of common stock by the selling securityholders.

You should read this document and any prospectus supplement or amendment carefully before you invest in our securities. Neither we nor any selling securityholders may use this prospectus to sell securities unless it includes a prospectus supplement.

Our common stock is listed on The Nasdaq Global Market under the symbol VCYT.

Investing in our securities involves risks. See the section entitled Risk Factors on page 4 of this prospectus. You should carefully review the risks and uncertainties described under the heading Risk Factors contained in the applicable prospectus supplement and any related free writing prospectus, and under similar headings in the other documents that are incorporated or deemed incorporated by reference into this prospectus.

The securities described in this prospectus may be offered and sold to or through underwriters, dealers or agents as designated from time to time, or directly to one or more other purchasers or through a combination of such methods. See Plan of Distribution on page 14. If any underwriters, dealers or agents are involved in the sale of any of the

securities, their names, and any applicable purchase price, fee, commission or discount arrangements between or among them, will be set forth, or will be calculable from the information set forth, in the applicable prospectus supplement.

Neither the Securities and Exchange Commission nor any state regulators have 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 May 1, 2019.

Table of Contents

TABLE OF CONTENTS

<u>ABOUT THIS PROSPECTUS</u>	1
<u>PROSPECTUS SUMMARY</u>	2
<u>RISK FACTORS</u>	4
<u>FORWARD-LOOKING STATEMENTS</u>	4
<u>USE OF PROCEEDS</u>	5
<u>SECURITIES WE MAY OFFER</u>	5
<u>DESCRIPTION OF COMMON STOCK</u>	6
<u>DESCRIPTION OF PREFERRED STOCK</u>	8
<u>DESCRIPTION OF DEBT SECURITIES</u>	9
<u>DESCRIPTION OF WARRANTS</u>	17
<u>DESCRIPTION OF SUBSCRIPTION RIGHTS</u>	18
<u>DESCRIPTION OF UNITS</u>	19
<u>SELLING SECURITYHOLDERS</u>	19
<u>PLAN OF DISTRIBUTION</u>	19
<u>LEGAL MATTERS</u>	21
<u>EXPERTS</u>	21
<u>WHERE YOU CAN FIND MORE INFORMATION</u>	21
<u>INCORPORATION OF INFORMATION BY REFERENCE</u>	22

Table of Contents

ABOUT THIS PROSPECTUS

This prospectus is part of an automatic registration statement on Form S-3 that we filed with the Securities and Exchange Commission, or SEC, using a shelf registration, or continuous offering, process under the Securities Act of 1933, as amended, or the Securities Act. Under this shelf registration process, we may, from time to time, offer and sell separately or together in any combination the securities described in this prospectus in one or more offerings, and selling securityholders may sell our common stock from time to time in one or more offerings.

This prospectus provides you with a general description of the securities we or the selling securityholders may offer. Each time we or the selling securityholders sell securities, we will provide one or more prospectus supplements that will contain specific information about the terms of the offering. We may also authorize one or more free writing prospectuses to be provided to you in connection with these offerings. Any prospectus supplement and any free writing prospectus may also add, update or change information contained in this prospectus. You should read this prospectus, the information incorporated, or deemed to be incorporated, by reference in this prospectus, the accompanying prospectus supplement and any free writing prospectus, together with the additional information described under the heading **Where You Can Find More Information**, before making your investment decision.

You should rely only on the information contained in or incorporated by reference in this prospectus, any accompanying prospectus supplement or in any related free writing prospectus filed by us with the SEC. We and the selling securityholders have not authorized anyone to provide you with different information. This prospectus and the accompanying prospectus supplement do not constitute an offer to sell or the solicitation of an offer to buy any securities other than the securities described in the accompanying prospectus supplement or an offer to sell or the solicitation of an offer to buy such securities in any circumstances in which such offer or solicitation is unlawful. You should assume that the information appearing in this prospectus, any prospectus supplement, the documents incorporated by reference and any related free writing prospectus is accurate only as of their respective dates. Our business, financial condition, operating results and prospects may have changed materially since those dates.

This prospectus contains summaries of certain provisions contained in some of the documents described herein, but reference is made to the actual documents for complete information. Copies of some of the documents referred to herein have been filed, will be filed or will be incorporated by reference as exhibits to the registration statement of which this prospectus is a part, and you may obtain copies of those documents as described below under the heading **Where You Can Find More Information**.

Unless the context otherwise requires, references in this prospectus and the accompanying prospectus supplement to Veracyte, the company, we, us and our refer to Veracyte, Inc.

Veracyte, Afirma, Percepta, Envisia, Know by Design, the Veracyte logo and the Afirma logo are our trademarks. This prospectus and the documents incorporated by reference into this prospectus may also contain trademarks and trade names that are the property of their respective owners. We do not intend our use or display of other companies trade names, trademarks or service marks to imply relationships with, or endorsements or sponsorship of us by, these other companies.

Table of Contents

PROSPECTUS SUMMARY

This summary does not contain all of the information that you should consider before investing in our securities. You should carefully read this entire prospectus and the information incorporated by reference in this prospectus, including Risk Factors and the financial data and related notes and other information incorporated by reference, before making an investment decision.

Company Overview

We are a leading genomic diagnostics company that is creating value through innovation. We were founded in 2008 with a mission to improve diagnostic accuracy. Today, through our innovative scientific platform which utilizes ribonucleic acid, or RNA, whole-transcriptome sequencing combined with machine learning, we are serving this critical medical need and expanding our offerings further along the clinical continuum of care so that we can advance early detection of disease and inform treatment decisions at the same time as diagnosis.

We have commercialized five leading, first-to-market tests that we believe are transforming care in large, untapped clinical areas—thyroid cancer, lung cancer and idiopathic pulmonary fibrosis, or IPF. We develop tests that answer specific clinical questions, providing patients and physicians with a clear path forward without the need for risky or costly procedures that are often unnecessary. Our RNA whole-transcriptome sequencing platform enables us to maximize the amount of genomic content that we extract from each nonsurgical patient sample. We use our machine learning expertise to develop genomic classifiers that provide actionable information at the time of diagnosis. At the same time, our approach enables us to provide information that can guide treatment decisions such as surgery strategy and therapy selection.

We position our tests in each clinical indication at the point where they improve diagnostic clarity for cancer and other diseases. In its 2015 report, *Improving Diagnostic Errors in Medicine*, the Institute of Medicine concluded that most people will experience at least one diagnostic error in their lifetime, sometimes with devastating consequences. Annually, of the hundreds of thousands of patients who are evaluated for suspected disease in our thyroid and lung cancer indications, diagnosis can be ambiguous in 15% to 70% of cases.

To date, we have commercialized five genomic tests that we believe are changing disease diagnosis:

the Afirma Genomic Sequencing Classifier, or GSC, for thyroid cancer;

the Afirma Gene Expression Classifier, which was the Afirma GSC's predecessor;

the Percepta Bronchial Genomic Classifier for lung cancer;

the Envisia Genomic Classifier for IPF; and

our Afirma Xpression Atlas, which provides information on the most common and emerging gene alterations associated with thyroid cancer, enabling physicians to confidently tailor surgical and treatment decisions at

time of diagnosis.

Collectively, we believe the four tests we are currently offering address a \$2 billion global market opportunity.

The published evidence supporting our tests demonstrates the robustness of our science and clinical studies, and we believe is key to driving adoption and reimbursement. Patients and physicians can access our full list of publications on our website. Over 38 clinical studies covering our products have been published, including two landmark clinical validation papers published in The New England Journal of Medicine for the Afirma and Percepta classifiers. We continue to build upon our extensive library of clinical evidence.

We believe our focus on developing clinically useful tests that change patient care is enabling us to set new standards in genomic test reimbursement. Our Afirma genomic classifier is now covered by every major health

Table of Contents

plan in the United States, which collectively insure more than 275 million people, for use in thyroid cancer diagnosis. We are now contracted as an in-network service provider to health plans representing over 215 million people in the United States. Our second commercial product, the Percepta classifier, is the first genomic test to gain Medicare coverage for improved lung cancer screening and diagnosis, making it a covered benefit for nearly 60 million people.

Company Information

We were incorporated in Delaware as Calderome, Inc. in August 2006. Calderome operated as an incubator until early 2008. We changed our name to Veracyte, Inc. in March 2008. Our principal executive offices are located at 6000 Shoreline Court, Suite 300, South San Francisco, California 94080 and our telephone number is (650) 243-6300. Our website address is www.veracyte.com. We do not incorporate the information on, or accessible through, our website into this prospectus, and you should not consider any information on, or accessible through, our website as part of this prospectus.

Table of Contents

RISK FACTORS

Investing in our securities involves risk. The prospectus supplement relating to a particular offering will contain a discussion of risks applicable to an investment in the securities offered. Prior to making a decision about investing in our securities, you should carefully consider the specific factors discussed under the heading **Risk Factors** in the applicable prospectus supplement together with all of the other information contained in the prospectus supplement or appearing or incorporated by reference in this prospectus. You should also consider the risks, uncertainties and assumptions discussed under Part II, Item 1A, **Risk Factors**, in our Quarterly Report on Form 10-Q for the quarterly period ended March 31, 2019, which is incorporated herein by reference, and may be amended, supplemented or superseded from time to time by other reports we file with the SEC in the future. The risks and uncertainties we have described are not the only ones we face. Additional risks and uncertainties not presently known to us or that we currently deem immaterial may also affect our operations.

FORWARD-LOOKING STATEMENTS

When used in this prospectus and documents incorporated herein by reference, the words **expects**, **believes**, **anticipates**, **estimates**, **may**, **could**, **intends**, and similar expressions are intended to identify forward-looking statements. These statements are subject to known and unknown risks and uncertainties that could cause actual results to differ materially from those projected or otherwise implied by the forward-looking statements. These forward-looking statements speak only as of the date of this prospectus. Given these risks and uncertainties, you should not place undue reliance on these forward-looking statements. We will discuss many of these risks and uncertainties in greater detail in any prospectus supplement under the heading **Risk Factors**. Additional cautionary statements or discussions of risks and uncertainties that could affect our results or the achievement of the expectations described in forward-looking statements may also be contained in the documents we incorporate by reference into this prospectus.

These forward-looking statements are based on the current beliefs and expectations of our management and speak only as of the date of this prospectus. We expressly disclaim any obligation or undertaking to release publicly any updates or revisions to any forward-looking statements contained herein to reflect any change in our expectations with regard thereto or any change in events, conditions or circumstances on which any such statement is based. You should, however, review additional disclosures we make in our Annual Report on Form 10-K, Quarterly Reports on Form 10-Q, and Current Reports on Form 8-K filed with the SEC.

Table of Contents

USE OF PROCEEDS

Unless we state otherwise in the applicable prospectus supplement, we intend to use the net proceeds from the sale of the securities offered by us pursuant to this prospectus for general corporate purposes. General corporate purposes may include additions to working capital, financing of capital expenditures, repayment or redemption of existing indebtedness, and future acquisitions and strategic investment opportunities. Unless we state otherwise in the applicable prospectus supplement, pending the application of net proceeds, we expect to invest the net proceeds in short- and intermediate-term, interest-bearing obligations, investment-grade instruments, certificates of deposit or direct or guaranteed obligations of the U.S. government.

Unless otherwise indicated in the prospectus supplement, we will not receive any of the proceeds from any sale of our common stock by selling securityholders.

SECURITIES WE MAY OFFER

We may offer common stock, preferred stock, debt securities, warrants, subscription rights, and/or units consisting of some or all of these securities, in any combination, together or separately, in one or more offerings. Selling securityholders may also offer shares of our common stock in one or more offerings. This prospectus provides you with a general description of the securities we or the selling securityholders may offer. A prospectus supplement, which we will provide each time we offer securities, will describe the specific amounts, prices and terms of these securities.

We or selling securityholders may sell the securities to or through underwriters, dealers or agents or directly to purchasers or as otherwise set forth below under Plan of Distribution. We, as well as any agents acting on our behalf, reserve the sole right to accept and to reject in whole or in part any proposed purchase of securities. Each prospectus supplement will set forth the names of any underwriters, dealers, agents or other entities involved in the sale of securities described in that prospectus supplement and any applicable fee, commission or discount arrangements with them.

Table of Contents

DESCRIPTION OF COMMON STOCK

This section describes the general terms and provisions of the shares of our common stock, par value \$0.001 per share. This description is only a summary and is qualified in its entirety by reference to the description of our common stock incorporated by reference in this prospectus. Our restated certificate of incorporation and our bylaws have been filed as exhibits to our periodic reports filed with the SEC, which are incorporated by reference in this prospectus. You should read our restated certificate of incorporation and our bylaws for additional information before you buy any of our common stock or other securities. See [Where You Can Find More Information](#).

We have 125,000,000 shares of authorized common stock. As of March 31, 2019, there were 41,509,240 shares of common stock issued and outstanding. Each holder of common stock is entitled to one vote for each share of common stock held on all matters submitted to a vote of stockholders. We have not provided for cumulative voting for the election of directors in our restated certificate of incorporation. This means that the holders of a majority of the shares voted can elect all of the directors then standing for election. Subject to preferences that may apply to shares of preferred stock outstanding at the time, the holders of outstanding shares of our common stock are entitled to receive dividends out of assets legally available at the times and in the amounts that our board of directors may determine from time to time. Upon our liquidation, dissolution or winding-up, the holders of common stock are entitled to share ratably in all assets remaining after payment of all liabilities and the liquidation preferences of any outstanding preferred stock. Holders of common stock have no preemptive or conversion rights or other subscription rights. There are no redemption or sinking fund provisions applicable to the common stock. All outstanding shares of common stock are fully paid and nonassessable.

Anti-Takeover Effects of Delaware Law and Our Restated Certificate of Incorporation and Bylaws

Certain provisions of Delaware law, our restated certificate of incorporation and our amended and restated bylaws could have the effect of delaying, deferring or discouraging another party from acquiring control of us. These provisions, which are summarized below, are expected to discourage certain types of coercive takeover practices and inadequate takeover bids. These provisions are also designed, in part, to encourage persons seeking to acquire control of us to first negotiate with our board of directors.

Certificate of Incorporation and Bylaws. Our restated certificate of incorporation and amended and restated bylaws include provisions that:

authorize our board of directors to issue, without further action by the stockholders, up to 5,000,000 shares of undesignated preferred stock;

require that any action to be taken by our stockholders be effected at a duly called annual or special meeting and not by written consent;

specify that special meetings of our stockholders can be called only by our board of directors, our chairman of the board, or our chief executive officer;

establish an advance notice procedure for stockholder approvals to be brought before an annual meeting of our stockholders, including proposed nominations of persons for election to our board of directors;

establish that our board of directors is divided into three classes, Class I, Class II and Class III, with each class serving staggered terms;

provide that our directors may be removed only for cause;

provide that vacancies on our board of directors may, except as otherwise required by law, be filled only by a majority of directors then in office, even if less than a quorum;

specify that no stockholder is permitted to cumulate votes at any election of directors; and

require a super-majority of votes to amend certain of the above-mentioned provisions.

Table of Contents

Delaware Law. We are subject to the provisions of Section 203 of the General Corporation Law of the State of Delaware regulating corporate takeovers. In general, those provisions prohibit a publicly-held Delaware corporation from engaging in any business combination with any interested stockholder for a period of three years following the date that the stockholder became an interested stockholder, unless:

the transaction is approved by the board of directors of the corporation before the date the interested stockholder attained that status;

upon completion of the transaction that resulted in the stockholder becoming an interested stockholder, the interested stockholder owned at least 85% of the voting stock of the corporation outstanding at the time the transaction commenced, excluding for purposes of determining the voting stock outstanding (1) shares owned by persons who are directors and also officers and (2) shares owned by employee stock plans in which employee participants do not have the right to determine confidentially whether shares held subject to the plan will be tendered in a tender or exchange offer; or

on or after the date the business combination is approved by the board of directors of the corporation and authorized at a meeting of stockholders by at least 66-2/3% of the outstanding voting stock that is not owned by the interested stockholder.

Section 203 defines "business combination" to include the following:

any merger or consolidation involving the corporation and the interested stockholder;

any sale, transfer, pledge or other disposition of 10% or more of the assets of the corporation involving the interested stockholder;

subject to certain exceptions, any transaction that results in the issuance or transfer by the corporation of any stock of the corporation to the interested stockholder;

any transaction involving the corporation that has the effect of increasing the proportionate share of the stock of any class or series of the corporation beneficially owned by the interested stockholder; or

the receipt by the interested stockholder of the benefit of any loans, advances, guarantees, pledges or other financial benefits provided by or through the corporation.

In general, Section 203 defines an interested stockholder as any entity or person beneficially owning 15% or more of the outstanding voting stock of the corporation and any entity or person affiliated with or controlling or controlled by any of these entities or persons.

A Delaware corporation may opt out of these provisions either with an express provision in its original certificate of incorporation or in an amendment to its certificate of incorporation or bylaws approved by its stockholders. However, we have not opted out, and do not currently intend to opt out of, these provisions. The statute could prohibit or delay mergers or other takeover or change in control attempts and, accordingly, may discourage attempts to acquire us.

Transfer Agent

The transfer agent and registrar for our common stock is Broadridge Corporate Issuer Solutions, Inc.

Table of Contents

DESCRIPTION OF PREFERRED STOCK

As of March 31, 2019, our authorized preferred stock, par value \$0.001 per share, was 5,000,000 shares, none of which were issued and outstanding. We may issue preferred stock, in series, with such designations, powers, preferences and other rights and qualifications, limitations or restrictions as our board of directors may authorize, without further action by our stockholders, including:

the distinctive designation of each series and the number of shares that will constitute the series;

the voting rights, if any, of shares of the series and the terms and conditions of the voting rights;

the dividend rate on the shares of the series, the dates on which dividends are payable, any restriction, limitation or condition upon the payment of dividends, whether dividends will be cumulative, and the dates from and after which dividends shall accumulate;

the prices at which, and the terms and conditions on which, the shares of the series may be redeemed, if the shares are redeemable;

the terms and conditions of a sinking or purchase fund for the purchase or redemption of shares of the series, if such a fund is provided;

any preferential amount payable upon shares of the series in the event of the liquidation, dissolution or winding up of, or upon the distribution of any of our assets; and

the prices or rates of conversion or exchange at which, and the terms and conditions on which, the shares of the series may be converted or exchanged into other securities, if the shares are convertible or exchangeable. The particular terms of any series of preferred stock, and the transfer agent and registrar for that series, will be described in a prospectus supplement. Any material United States federal income tax consequences and other special considerations with respect to any preferred stock offered under this prospectus will also be described in the applicable prospectus supplement.

Table of Contents

DESCRIPTION OF DEBT SECURITIES

The following is a summary of the general terms of the debt securities we may offer. We will file a prospectus supplement that may contain additional terms when we issue debt securities. The terms presented here, together with the terms in the applicable prospectus supplement, together with any free writing prospectus or term sheet, will be a description of the material terms of the debt securities. The terms of the debt securities will include those stated in the indenture and those made part of the indenture by reference to the Trust Indenture Act of 1939, as in effect on the date of the indenture. We have filed a copy of the form of indenture as an exhibit to the registration statement in which this prospectus is included. The indenture will be subject to and governed by the terms of the Trust Indenture Act of 1939.

We may issue, from time to time, debt securities, in one or more series. These debt securities that we may issue include senior debt securities, senior subordinated debt securities, subordinated debt securities, convertible debt securities and exchangeable debt securities. The following is a summary of the material provisions of the form of indenture filed as an exhibit to the registration statement of which this prospectus is a part. For each series of debt securities, the applicable prospectus supplement for the series may change and supplement the summary below.

As used in this section only, we, us and our refer to Veracyte, Inc., unless expressly stated or the context otherwise requires.

General Terms of the Indenture

The indenture does not limit the amount of debt securities that we may issue. It provides that we may issue debt securities for any series of debt securities up to the principal amount that we may authorize. Except for the limitations on consolidation, merger and sale of all or substantially all of our assets contained in the indenture, the terms of the indenture do not contain any covenants or other provisions designed to give holders of any debt securities protection against changes in our operations, financial condition or transactions involving us. For each series of debt securities, any restrictive covenants for those debt securities will be described in the applicable prospectus supplement for those debt securities.

You should refer to the prospectus supplement relating to a particular series of debt securities for a description of the following terms of the debt securities offered by that prospectus supplement and by this prospectus:

the title of the series;

the aggregate principal amount, and, if a series, the total amount authorized and the total amount outstanding;

the date or dates on which principal and premium, if any, of the debt securities of that series is payable;

interest rates, and the dates from which interest, if any, on the debt securities of that series will accrue, and the dates when interest is payable and the maturity;

the right, if any, to extend the interest payment periods and the duration of the extensions;

if the amount of payments of principal or interest is to be determined by reference to an index or formula, or based on a coin or currency other than that in which the debt securities are stated to be payable, the manner in which these amounts are determined and the calculation agent, if any, with respect thereto;

the place or places where and the manner in which principal of, premium, if any, and interest, if any, on the debt securities of that series will be payable and the place or places where those debt securities may be presented for transfer and, if applicable, conversion or exchange;

Table of Contents

the period or periods within which, the price or prices at which, and other terms and conditions upon which those debt securities may be redeemed, in whole or in part, at our option or the option of a holder of those securities, if we or a holder is to have that option;

our obligation or right, if any, to redeem, repay or purchase those debt securities pursuant to any sinking fund or analogous provision or at the option of a holder of those securities, and the terms and conditions upon which the debt securities will be redeemed, repaid or purchased, in whole or in part, pursuant to that obligation;

the terms, if any, on which the debt securities of that series will be subordinate in right and priority of payment to our other debt;

the denominations in which those debt securities will be issuable, if other than denominations of \$1,000 or any integral multiple of that number;

if other than the entire principal amount of the debt securities when issued, the portion of the principal amount payable upon acceleration of maturity as a result of a default on our obligations;

whether any securities of that series are to be issued in whole or in part in the form of one or more global securities and the depositary for those global securities;

if the principal of or any premium or interest on the debt securities of that series is to be payable, or is to be payable at our election or the election of a holder of those securities, in securities or other property, the type and amount of those securities or other property, or the manner of determining that amount, and the period or periods within which, and the terms and conditions upon which, any such election may be made;

the events of default and covenants relating to the debt securities that are in addition to, modify or delete those described in this prospectus;

conversion or exchange provisions, if any, including conversion or exchange prices or rates and adjustments thereto;

whether and upon what terms the debt securities may be defeased, if different from the provisions set forth in the indenture;

the nature and terms of any security for any secured debt securities;

the terms applicable to any debt securities issued at a discount from their stated principal amount

any addition to or change in the covenants and/or the acceleration provisions described in this prospectus or in the indenture; and

any other specific terms of any debt securities.

We may issue the debt securities issued under the indenture as discount securities, which means they may be sold at a discount below their stated principal amount. These debt securities, as well as other debt securities that are not issued at a discount, may, for United States federal income tax purposes, be treated as if they were issued with original issue discount because of interest payment and other characteristics. Special United States federal income tax considerations applicable to debt securities issued with original issue discount will be described in more detail in any applicable prospectus supplement.

The applicable prospectus supplement will present material United States federal income tax considerations for holders of any debt securities and the securities exchange or quotation system on which any debt securities are to be listed or quoted.

Covenants

Unless otherwise indicated in this prospectus or the applicable prospectus supplement, our debt securities will not have the benefit of any covenants that limit or restrict our business or operations, the pledging of our

Table of Contents

assets or the incurrence by us of indebtedness. We will describe in the applicable prospectus supplement any material covenants in respect of a series of debt securities.

No Protection in the Event of Change of Control

The indenture does not have any covenants or other provisions providing for a put or increased interest or otherwise that would afford holders of our debt securities additional protection in the event of a recapitalization transaction, a change of control or a highly leveraged transaction. If we offer any covenants or provisions of this type with respect to any debt securities covered by this prospectus, we will describe them in the applicable prospectus supplement.

Conversion or Exchange Rights

Debt securities may be convertible into or exchangeable for shares of our equity securities or other securities. The terms and conditions of conversion or exchange will be stated in the applicable prospectus supplement. The terms will include, among others, the following:

the conversion or exchange price;

the conversion or exchange period;

provisions regarding our ability or the ability of any holder to convert or exchange the debt securities;

events requiring adjustment to the conversion or exchange price;

provisions affecting conversion or exchange in the event of our redemption of the debt securities; and

any anti-dilution provisions, if applicable.

Consolidation, Merger or Sale

We cannot consolidate with or merge with or into, or transfer or lease all or substantially all of our assets to, any person, unless we are the surviving corporation or the successor person is a corporation organized under the laws of the United States, any state of the United States or the District of Columbia and expressly assumes our obligations under the debt securities and the indenture. In addition, we cannot complete such a transaction unless immediately after completing the transaction, no event of default under the indenture, and no event that, after notice or lapse of time or both, would become an event of default under the indenture, has occurred and is continuing. When the successor person has assumed our obligations under the debt securities and the indenture, we will be discharged from all our obligations under the debt securities and the indenture except in limited circumstances.

This covenant would not apply to any recapitalization transaction, a change of control affecting us or a highly leveraged transaction, unless the transaction or change of control were structured to include a merger or consolidation or transfer or lease of all or substantially all of our assets.

Events of Default

Unless otherwise specified in the applicable prospectus supplement, the following will be events of default under the indenture with respect to any series of debt securities:

failure to pay interest for 30 days after the date payment is due and payable;

failure to pay principal or premium, if any, on any debt security when due, either at maturity, upon any redemption, by declaration or otherwise and, in the case of technical or administrative difficulties, only if such default persists for a period of more than three business days;

Table of Contents

failure to make sinking fund payments when due and continuance of such default for a period of 30 days;

failure to perform other covenants for 60 days after notice that performance was required;

events in bankruptcy, insolvency or reorganization relating to us; or

any other event of default provided in the applicable officer's certificate, resolution of our board of directors or the supplemental indenture under which we issue a series of debt securities.

An event of default for a particular series of debt securities does not necessarily constitute an event of default for any other series of debt securities issued under the indenture. For each series of debt securities, any modifications to the above events of default will be described in the applicable prospectus supplement for those debt securities.

The indenture provides that if an event of default specified in the first, second, third, fourth or sixth bullets above occurs and is continuing, either the trustee or the holders of at least 25% in aggregate principal amount of the outstanding debt securities of that series may declare the principal amount of all those debt securities (or, in the case of discount securities or indexed securities, that portion of the principal amount as may be specified in the terms of that series) to be due and payable immediately. If an event of default specified in the fifth bullet above occurs and is continuing, then the principal amount of all those debt securities (or, in the case of discount securities or indexed securities, that portion of the principal amount as may be specified in the terms of that series) will be due and payable immediately, without any declaration or other act on the part of the trustee or any holder. In certain cases, holders of a majority in principal amount of the outstanding debt securities of any series may, on behalf of holders of all those debt securities, rescind and annul a declaration of acceleration.

The indenture imposes limitations on suits brought by holders of debt securities against us. Except for actions for payment of overdue principal or interest, no holder of debt securities of any series may institute any action against us under the indenture unless:

the holder has previously given to the trustee written notice of default and continuance of such default;

the holders of at least 25% in principal amount of the outstanding debt securities of the affected series have requested that the trustee institute the action;

the requesting holders have offered the trustee indemnity for the reasonable expenses and liabilities that may be incurred by bringing the action;

the trustee has not instituted the action within 60 days of the request and offer of indemnity; and

the trustee has not received inconsistent direction by the holders of a majority in principal amount of the outstanding debt securities of the affected series.

We will be required to file annually with the trustee a certificate, signed by one of our officers, stating whether or not the officer knows of any default by us in the performance, observance or fulfillment of any condition or covenant of the indenture.

Discharge, Defeasance and Covenant Defeasance

We can discharge or decrease our obligations under the indenture as stated below.

We may discharge obligations to holders of any series of debt securities that have not already been delivered to the trustee for cancellation and that have either become due and payable or are by their terms to become due and payable, or are scheduled for redemption, within one year. We may effect a discharge by irrevocably depositing with the trustee cash or government obligations, as trust funds, in an amount certified to be enough to pay when due, whether at maturity, upon redemption or otherwise, the principal of, and any premium and interest on, the debt securities and any mandatory sinking fund payments.

Table of Contents

Unless otherwise provided in the applicable prospectus supplement, we may also discharge any and all of our obligations to holders of any series of debt securities at any time, which we refer to as defeasance. We may also be released from the obligations imposed by any covenants of any outstanding series of debt securities and provisions of the indenture, and we may omit to comply with those covenants without creating an event of default under the trust declaration, which we refer to as covenant defeasance. We may effect defeasance and covenant defeasance only if, among other things:

we irrevocably deposit with the trustee cash or government obligations denominated in the currency of the debt securities, as trust funds, in an amount certified to be enough to pay at maturity, or upon redemption, the principal (including any mandatory sinking fund payments) of, and any premium and interest on, all outstanding debt securities of the series; and

we deliver to the trustee an opinion of counsel from a nationally recognized law firm to the effect that the holders of the series of debt securities will not recognize income, gain or loss for U.S. federal income tax purposes as a result of the defeasance or covenant defeasance and that defeasance or covenant defeasance will not otherwise alter the holders' U.S. federal income tax treatment of principal, and any premium and interest payments on, the series of debt securities.

In the case of a defeasance by us, the opinion we deliver must be based on a ruling of the Internal Revenue Service issued, or a change in U.S. federal income tax law occurring, after the date of the indenture, since such a result would not occur under the U.S. federal income tax laws in effect on that date.

Although we may discharge or decrease our obligations under the indenture as described in the two preceding paragraphs, we may not avoid, among other things, our duty to register the transfer or exchange of any series of debt securities, to replace any temporary, mutilated, destroyed, lost or stolen series of debt securities or to maintain an office or agency in respect of any series of debt securities.

Modification of the Indenture

The indenture provides that we and the trustee may enter into supplemental indentures without the consent of the holders of debt securities to, among other things:

evidence the assumption by a successor entity of our obligations;

add to our covenants for the benefit of the holders of debt securities, or to surrender any rights or power conferred upon us;

add any additional events of default;

add to, change or eliminate any of the provisions of the indenture in a manner that will become effective only when there is no outstanding debt security which is entitled to the benefit of the provision as to which

the modification would apply;

add guarantees with respect to or secure any debt securities;

establish the forms or terms of debt securities of any series;

evidence and provide for the acceptance of appointment by a successor trustee and add to or change any of the provisions of the indenture as is necessary for the administration of the trusts by more than one trustee;

cure any ambiguity or correct any inconsistency or defect in the indenture;

modify, eliminate or add to the provisions of the indenture as shall be necessary to effect the qualification of the indenture under the Trust Indenture Act of 1939 or under any similar federal statute later enacted, and to add to the indenture such other provisions as may be expressly required by the Trust Indenture Act; and

Table of Contents

make any other provisions with respect to matters or questions arising under the indenture that will not be inconsistent with any provision of the indenture as long as the new provisions do not adversely affect the interests of the holders of any outstanding debt securities of any series created prior to the modification.

The indenture also provides that we and the trustee may, with the consent of the holders of not less than a majority in aggregate principal amount of debt securities of each series of debt securities affected by such supplemental indenture then outstanding, add any provisions to, or change in any manner, eliminate or modify in any way the provisions of, the indenture or any supplemental indenture or modify in any manner the rights of the holders of the debt securities. We and the trustee may not, however, without the consent of the holder of each outstanding debt security affected thereby:

extend the final maturity of any debt security;

reduce the principal amount or premium, if any;

reduce the rate or extend the time of payment of interest;

reduce the amount of the principal of any debt security issued with an original issue discount that is payable upon acceleration;

change the currency in which the principal, and any premium or interest, is payable;

impair the right to institute suit for the enforcement of any payment on any debt security when due;

if applicable, adversely affect the right of a holder to convert or exchange a debt security; or

reduce the percentage of holders of debt securities of any series whose consent is required for any modification of the indenture or for waivers of compliance with or defaults under the indenture with respect to debt securities of that series.

The indenture provides that the holders of not less than a majority in aggregate principal amount of the then outstanding debt securities of any series, by notice to the relevant trustee, may on behalf of the holders of the debt securities of that series waive any default and its consequences under the indenture except:

a default in the payment of, any premium and any interest on, or principal of, any such debt security held by a nonconsenting holder; or

a default in respect of a covenant or provision of the indenture that cannot be modified or amended without the consent of the holder of each outstanding debt security of each series affected.

Registered Global Securities and Book Entry System

The debt securities of a series may be issued in whole or in part in book-entry form and will be represented by one or more fully registered global securities. We will deposit any registered global securities with a depositary or with a nominee for a depositary identified in the applicable prospectus supplement and registered in the name of such depositary or nominee. In such case, we will issue one or more registered global securities denominated in an amount equal to the aggregate principal amount of all of the debt securities of the series to be issued and represented by such registered global security or securities. This means that we will not issue certificates to each holder.

Unless and until it is exchanged in whole or in part for debt securities in definitive registered form, a registered global security may not be transferred except as a whole:

by the depositary for the registered global security to its nominee;

by a nominee of the depositary to the depositary or another nominee of the depositary; or

by the depositary or its nominee to a successor of the depositary or a nominee of the successor.

Table of Contents

The prospectus supplement relating to a series of debt securities will describe the specific terms of the depositary arrangement involving any portion of the series represented by a registered global security. We anticipate that the following provisions will apply to all depositary arrangements for debt securities:

ownership of beneficial interests in a registered global security will be limited to persons that have accounts with the depositary for such registered global security, these persons being referred to as participants, or persons that may hold interests through participants;

upon the issuance of a registered global security, the depositary for the registered global security will credit, on its book-entry registration and transfer system, the participants' accounts with the respective principal amounts of the debt securities represented by the registered global security beneficially owned by the participants;

any dealers, underwriters, or agents participating in the distribution of the debt securities will designate the accounts to be credited; and

ownership of beneficial interest in the registered global security will be shown on, and the transfer of the ownership interest will be effected only through, records maintained by the depositary for the registered global security for interests of participants, and on the records of participants for interests of persons holding through participants.

The laws of some states may require that specified purchasers of securities take physical delivery of the securities in definitive form. These laws may limit the ability of those persons to own, transfer or pledge beneficial interests in registered global securities.

So long as the depositary for a registered global security, or its nominee, is the registered owner of the registered global security, the depositary or such nominee, as the case may be, will be considered the sole owner or holder of the debt securities represented by the registered global security for all purposes under the indenture. Except as stated below, owners of beneficial interests in a registered global security:

will not be entitled to have the debt securities represented by a registered global security registered in their names;

will not receive or be entitled to receive physical delivery of the debt securities in the definitive form; and

will not be considered the owners or holders of the debt securities under the relevant indenture.

Accordingly, each person owning a beneficial interest in a registered global security must rely on the procedures of the depositary for the registered global security and, if the person is not a participant, on the procedures of a participant through which the person owns its interest, to exercise any rights of a holder under the indenture.

We understand that under existing industry practices, if we request any action of holders or if an owner of a beneficial interest in a registered global security desires to give or take any action that a holder is entitled to give or take under the indenture, the depositary for the registered global security would authorize the participants holding the relevant beneficial interests to give or take the action, and the participants would authorize beneficial owners owning through the participants to give or take the action or would otherwise act upon the instructions of beneficial owners holding through them.

We will make payments of principal and premium, if any, and interest, if any, on debt securities represented by a registered global security registered in the name of a depositary or its nominee to the depositary or its nominee, as the case may be, as the registered owners of the registered global security. Neither we nor the trustee, or any other agent of ours or the trustee will be responsible or liable for any aspect of the records relating to, or payments made on account of, beneficial ownership interests in the registered global security or for maintaining, supervising or reviewing any records relating to the beneficial ownership interests.

Table of Contents

We expect that the depositary for any debt securities represented by a registered global security, upon receipt of any payments of principal and premium, if any, and interest, if any, in respect of the registered global security, will immediately credit participants' accounts with payments in amounts proportionate to their respective beneficial interests in the registered global security as shown on the records of the depositary. We also expect that standing customer instructions and customary practices will govern payments by participants to owners of beneficial interests in the registered global security held through the participants, as is now the case with the securities held for the accounts of customers in bearer form or registered in street name. We also expect that any of these payments will be the responsibility of the participants.

If the depositary for any debt securities represented by a registered global security is at any time unwilling or unable to continue as depositary or stops being a clearing agency registered under the Securities Exchange Act of 1934, as amended, or the Exchange Act, we will appoint an eligible successor depositary. If we fail to appoint an eligible successor depositary within 90 days, we will issue the debt securities in definitive form in exchange for the registered global security. In addition, we may at any time and in our sole discretion decide not to have any of the debt securities of a series represented by one or more registered global securities. In that event, we will issue debt securities of the series in a definitive form in exchange for all of the registered global securities representing the debt securities. The trustee will register any debt securities issued in definitive form in exchange for a registered global security in the name or names as the depositary, based upon instructions from its participants, shall instruct the trustee.

Concerning the Trustee

The indenture provides that there may be more than one trustee under the indenture, each for one or more series of debt securities. If there are different trustees for different series of debt securities, each trustee will be a trustee of a trust under the indenture separate and apart from the trust administered by any other trustee under that indenture. Except as otherwise indicated in this prospectus or any prospectus supplement, any action permitted to be taken by a trustee may be taken by such trustee only on the one or more series of debt securities for which it is the trustee under the indenture. Any trustee under the indenture may resign or be removed from one or more series of debt securities. All payments of principal of, and any premium and interest on, and all registration, transfer, exchange, authentication and delivery of, the debt securities of a series will be effected by the trustee for that series at an office designated by the trustee in New York, New York.

The indenture provides that, except during the continuance of an event of default, the trustee will perform only such duties as are specifically set forth in the indenture. During the existence of an event of default, the trustee will exercise those rights and powers vested in it under the indenture and use the same degree of care and skill in its exercise as a prudent person would exercise under the circumstances in the conduct of such person's own affairs.

If the trustee becomes a creditor of ours, the indenture places limitations on the right of the trustee to obtain payment of claims or to realize on property received in respect of any such claim as security or otherwise. The trustee may engage in other transactions. If it acquires any conflicting interest relating to any duties concerning the debt securities, however, it must eliminate the conflict or resign as trustee.

No Individual Liability of Incorporators, Stockholders, Officers or Directors

The indenture provides that no past, present or future director, officer, stockholder or employee of ours, any of our affiliates, or any successor corporation, in their capacity as such, shall have any individual liability for any of our obligations, covenants or agreements under the debt securities or the indenture.

Governing Law

The indenture and the debt securities will be governed by, and construed in accordance with, the laws of the State of New York.

Table of Contents

DESCRIPTION OF WARRANTS

We may issue warrants for the purchase of common stock, preferred stock, debt securities, or any combination thereof. We may issue warrants independently or together with any other securities offered by any prospectus supplement and may be attached to or separate from the other offered securities. Each series of warrants may be issued under a separate warrant agreement to be entered into by us with a warrant agent. The applicable warrant agent will act solely as our agent in connection with the warrants and will not assume any obligation or relationship of agency or trust for or with any holders or beneficial owners of warrants. Further terms of the warrants and the applicable warrant agreements will be set forth in the applicable prospectus supplement.

The applicable prospectus supplement relating to any particular issue of warrants will describe the terms of the warrants, including, as applicable, the following:

the title of the warrants;

the aggregate number of the warrants;

the price or prices at which the warrants will be issued;

the designation, terms and number of shares of common stock, preferred stock or debt securities purchasable upon exercise of the warrants;

the designation and terms of the offered securities, if any, with which the warrants are issued and the number of the warrants issued with each offered security;

the date, if any, on and after which the warrants and the related common stock, preferred stock or debt securities will be separately transferable;

the price at which each share of common stock, preferred stock or debt securities purchasable upon exercise of the warrants may be purchased;

the date on which the right to exercise the warrants shall commence and the date on which that right shall expire;

the minimum or maximum amount of the warrants which may be exercised at any one time;

information with respect to book-entry procedures, if any;

a discussion of certain federal income tax considerations; and

any other terms of the warrants, including terms, procedures and limitations relating to the exchange and exercise of the warrants.

We and the applicable warrant agent may amend or supplement the warrant agreement for a series of warrants without the consent of the holders of the warrants issued thereunder to effect changes that are not inconsistent with the provisions of the warrants and that do not materially and adversely affect the interests of the holders of the warrants.

Table of Contents

DESCRIPTION OF SUBSCRIPTION RIGHTS

We may issue subscription rights to purchase common stock or preferred stock. This prospectus and any accompanying prospectus supplement will contain the material terms and conditions for each subscription right. The accompanying prospectus supplement may add, update or change the terms and conditions of the subscription rights as described in this prospectus.

We will describe in the applicable prospectus supplement the terms and conditions of the issue of subscription rights being offered, the subscription rights agreement relating to the subscription rights and the subscription rights certificates representing the subscription rights, including, as applicable:

the title of the subscription rights;

the date of determining the stockholders entitled to the subscription rights distribution;

the title, aggregate number of shares of common stock or preferred stock purchasable upon exercise of the subscription rights;

the exercise price;

the aggregate number of subscription rights issued;

the date, if any, on and after which the subscription rights will be separately transferable;

the date on which the subscription right to exercise the subscription rights will commence and the date on which the subscription right will expire; and

any other terms of the subscription rights, including terms, procedures and limitations relating to the distribution, exchange and exercise of the subscription rights.

Each subscription right will entitle the holder of subscription rights to purchase for cash the principal amount of shares of common stock or preferred stock at the exercise price provided in the applicable prospectus supplement. Subscription rights may be exercised at any time up to the close of business on the expiration date for the subscription rights provided in the applicable prospectus supplement. After the close of business on the expiration date, all unexercised subscription rights will be void.

Holders may exercise subscription rights as described in the applicable prospectus supplement. Upon receipt of payment and the subscription rights certificate properly completed and duly executed at the corporate trust office of the subscription rights agent or any other office indicated in the prospectus supplement, we will, as soon as practicable, forward the shares of common stock or preferred stock purchasable upon exercise of the subscription

rights. If less than all of the subscription rights issued in any subscription rights offering are exercised, we may offer any unsubscribed securities directly to persons other than stockholders, to or through agents, underwriters or dealers or through a combination of such methods, including pursuant to standby underwriting arrangements, as described in the applicable prospectus supplement.

Table of Contents

DESCRIPTION OF UNITS

We may issue units consisting of some or all of the securities described above, in any combination, including common stock, preferred stock, warrants and/or debt securities. The terms of these units will be set forth in a prospectus supplement. The description of the terms of these units in the related prospectus supplement will not be complete. You should refer to the applicable form of unit and unit agreement for complete information with respect to these units.

SELLING SECURITYHOLDERS

Selling securityholders are persons or entities that, directly or indirectly, have acquired, or will from time to time acquire from us, our common stock. If the registration statement of which this prospectus forms a part is used by selling securityholders for the resale of any securities registered thereunder, information about such selling securityholders, their beneficial ownership of our securities and their relationship with us will be set forth in a prospectus supplement.

PLAN OF DISTRIBUTION

We or selling securityholders may sell the securities offered by this prospectus to one or more underwriters or dealers for public offering and sale by them or to investors directly or through agents. The accompanying prospectus supplement will set forth the terms of the offering and the method of distribution and will identify any firms acting as underwriters, dealers or agents in connection with the offering, including:

the name or names of any underwriters, dealers or agents;

if applicable, the names of any selling securityholders;

the purchase price of the securities and the proceeds to us or the selling securityholders from the sale;

any underwriting discounts and other items constituting compensation to underwriters, dealers or agents;

any public offering price;

any discounts or concessions allowed or reallocated or paid to dealers; and

any securities exchange or market on which the securities offered in the prospectus supplement may be listed.

Only those underwriters identified in such prospectus supplement are deemed to be underwriters in connection with the securities offered in the prospectus supplement. We or selling securityholders may directly solicit offers to purchase the securities being offered by this prospectus. We or selling securityholders may also designate agents to solicit offers to purchase the securities from time to time. We or selling securityholders will name in a prospectus

supplement any agent involved in the offer or sale of our securities. Unless otherwise indicated in a prospectus supplement, an agent will be acting on a best efforts basis, and a dealer will purchase securities as a principal for resale at varying prices to be determined by the dealer.

The distribution of the securities may be effected from time to time in one or more transactions at a fixed price or prices, which may be changed, or at prices determined as the applicable prospectus supplement specifies. The securities may be sold through an at-the-market offering, a subscription rights offering, forward contracts or similar arrangements. In addition, we or selling securityholders may enter into derivative transactions with third parties, or sell securities not covered by this prospectus to third parties in privately negotiated transactions. If the applicable prospectus supplement so indicates, in connection with those derivatives, the third parties may sell

Table of Contents

securities covered by this prospectus and the applicable prospectus supplement, including in short sale transactions. If so, the third party may use securities pledged by us or selling securityholders or borrowed from us or selling securityholders or others to settle those sales or to close out any related open borrowings of stock, and may use securities received from us in settlement of those derivatives to close out any related open borrowings of stock. The third party in such sale transactions will be an underwriter and, if not identified in this prospectus, will be named in the applicable prospectus supplement (or a post-effective amendment). In addition, we or selling securityholders may otherwise loan or pledge securities to a financial institution or other third party that in turn may sell the securities short using this prospectus and an applicable prospectus supplement. Such financial institution or other third party may transfer its economic short position to investors in our securities or in connection with a concurrent offering of other securities.

In connection with the sale of the securities, underwriters, dealers or agents may be deemed to have received compensation from us or selling securityholders in the form of underwriting discounts or commissions and also may receive commissions from securities purchasers for whom they may act as agent. Underwriters may sell the securities to or through dealers, and the dealers may receive compensation in the form of discounts, concessions or commissions from the underwriters or commissions from the purchasers for whom they may act as agent.

We or selling securityholders will provide in the applicable prospectus supplement information regarding any underwriting discounts or other compensation that we or selling securityholders pay to underwriters or agents in connection with the securities offering, and any discounts, concessions or commissions that underwriters allow to dealers. Underwriters, dealers, agents and selling securityholders participating in the securities distribution may be deemed to be underwriters, and any discounts, commissions or concessions they receive and any profit they realize on the resale of the securities may be deemed to be underwriting discounts and commissions under the Securities Act. Underwriters and their controlling persons, dealers and agents may be entitled, under agreements entered into with us or selling securityholders, to indemnification against and contribution toward specific civil liabilities, including liabilities under the Securities Act. Some of the underwriters, dealers or agents who participate in the securities distribution may engage in other transactions with, and perform other services for, us in the ordinary course of business.

Our common stock is currently listed on The Nasdaq Global Market, but any other securities may or may not be listed on a national securities exchange. To facilitate the offering of securities, certain persons participating in the offering may engage in transactions that stabilize, maintain or otherwise affect the price of the securities. This may include over-allotments or short sales of the securities, which involve the sale by persons participating in the offering of more securities than were sold to them. In these circumstances, these persons would cover such over-allotments or short positions by making purchases in the open market or by exercising their over-allotment option, if any. In addition, these persons may stabilize or maintain the price of the securities by bidding for or purchasing securities in the open market or by imposing penalty bids, whereby selling concessions allowed to dealers participating in the offering may be reclaimed if securities sold by them are repurchased in connection with stabilization transactions. 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. These transactions may be discontinued at any time.

Table of Contents

LEGAL MATTERS

The validity of any securities offered by this prospectus will be passed upon for us by Fenwick & West LLP, San Francisco and Mountain View, California. Counsel representing any underwriters, dealers or agents will be named in the applicable prospectus supplement.

EXPERTS

Ernst & Young LLP, independent registered public accounting firm, has audited our financial statements included in our Annual Report on Form 10-K for the year ended December 31, 2018, and the effectiveness of our internal control over financial reporting as of December 31, 2018, as set forth in their reports, which are incorporated by reference in this prospectus and elsewhere in the registration statement. Our financial statements are incorporated by reference in reliance on Ernst & Young LLP's reports, given on their authority as experts in accounting and auditing.

WHERE YOU CAN FIND MORE INFORMATION

We have filed with the SEC a registration statement on Form S-3 under the Securities Act with respect to the securities offered hereby. This prospectus, which constitutes a part of the registration statement, does not contain all of the information set forth in the registration statement, the exhibits filed therewith or the documents incorporated by reference therein. For further information about us and the securities offered hereby, reference is made to the registration statement, the exhibits filed therewith and the documents incorporated by reference therein. Statements contained in this prospectus regarding the contents of any contract or any other document that is filed as an exhibit to the registration statement are not necessarily complete, and in each instance we refer you to the copy of such contract or other document filed as an exhibit to the registration statement. The SEC maintains a website that contains reports, proxy and information statements and other information regarding registrants that file electronically with the SEC. The address of the website is www.sec.gov.

We are subject to the information and reporting requirements of the Exchange Act, and, in accordance with this law, file periodic reports and other information with the SEC. These periodic reports and other information are available for inspection and copying at the SEC's public reference facilities and the website of the SEC referred to above. We also maintain a website at www.veracyte.com. You may access these materials free of charge as soon as reasonably practicable after they are electronically filed with, or furnished to, the SEC. Information contained on our website is not a part of this prospectus and the inclusion of our website address in this prospectus is an inactive textual reference only.

Table of Contents

Incorporation of Information by Reference

The SEC permits us to incorporate by reference the information contained in documents we file with the SEC, which means that we can disclose important information to you by referring you to those documents rather than by including them in this prospectus. Information that is incorporated by reference is considered to be part of this prospectus and you should read it with the same care that you read this prospectus. Later information that we file with the SEC will automatically update and supersede the information that is either contained, or incorporated by reference, in this prospectus, and will be considered to be a part of this prospectus from the date those documents are filed. We have filed with the SEC, and incorporate by reference in this prospectus:

our Annual Report on Form 10-K for the year ended December 31, 2018, filed with the SEC on February 25, 2019;

the information specifically incorporated by reference into our Annual Report on Form 10-K for the year ended December 31, 2018 from our definitive proxy statement on Schedule 14A, which was filed with the SEC on April 24, 2019;

our Quarterly Report on Form 10-Q for the quarter ended March 31, 2019, filed with the SEC on April 30, 2019;

our Current Reports on Form 8-K filed with the SEC on January 3, 2019, February 26, 2019 and April 26, 2019; and

the description of our common stock contained in our Registration Statement on Form 8-A filed on October 28, 2013, including any amendment or report filed for the purpose of updating such description.

We also incorporate by reference all additional documents that we file with the SEC under the terms of Section 13(a), 13(c), 14 or 15(d) of the Exchange Act after the date of this prospectus and prior to the termination of the offering of the securities hereunder. We are not, however, incorporating, in each case, any documents or information that we are deemed to furnish and not file in accordance with SEC rules.

You may request a copy of any or all of the documents incorporated by reference but not delivered with this prospectus, at no cost, by writing or telephoning us at the following address and number: Investor Relations, Veracyte, Inc., 6000 Shoreline Court, Suite 300, South San Francisco, California 94080, telephone (650) 243-6300. We will not, however, send exhibits to those documents, unless the exhibits are specifically incorporated by reference in those documents.

Table of Contents

5,000,000 Shares

Common Stock

Morgan Stanley

William Blair

SVB Leerink

BTIG

Janney Montgomery Scott

, 2019