

CANCER GENETICS, INC
Form S-1
December 22, 2016

As filed with the Securities and Exchange Commission on December 22, 2016.

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM S-1
REGISTRATION STATEMENT
UNDER
THE SECURITIES ACT OF 1933

CANCER GENETICS, INC.
(Exact Name of Registrant as Specified in Its Charter)

Delaware	8071	04-3462475
(State or other jurisdiction of incorporation or organization)	(Primary Standard Industrial Classification Code Number)	(I.R.S. Employer Identification No.)

201 Route 17 North, 2nd Floor
Rutherford, NJ 07070
(201) 528-9200

(Address, Including Zip Code, and Telephone Number, Including Area Code, of Registrant's Principal Executive Offices)

Edward J. Sitar
Chief Financial Officer
Cancer Genetics, Inc.
201 Route 17 North, 2nd Floor
Rutherford, NJ 07070
(201) 528-9200

(Name, Address, Including Zip Code, and Telephone Number, Including Area Code, of Agent for Service)

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Approximate date of proposed sale to the public: From time to time after this Registration Statement becomes effective.

If any of the securities being registered on this Form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act of 1933, check the following box. "

If this Form is filed to register additional securities for an offering pursuant to Rule 462(b) under the Securities Act, please check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. "

If this Form is a post-effective amendment filed pursuant to Rule 462(c) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. ☐

If this Form is a post-effective amendment filed pursuant to Rule 462(d) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. ☐

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

Large accelerated filer ☐ Accelerated filer ☐
 Non-accelerated filer ☐ (Do not check if a smaller reporting company) Smaller reporting company ☒

CALCULATION OF REGISTRATION FEE

Title of Each Class of Securities to be Registered	Amount to be Registered	Proposed Maximum Offering Price Per Share	Proposed Maximum Aggregate Offering Price	Amount of Registration Fee
Common stock, par value \$.0001 per share, underlying common stock purchase warrants (1)	1,375,000 (2)	\$ 2.25 (3)	\$3,093,750 (4)	\$ 359 (3)
Common stock, par value \$.0001 per share, underlying common stock purchase warrants (1)	1,233,910 (2)	\$ 2.25 (3)	\$2,776,298 (4)	\$ 322 (3)
Total	2,608,910 (2)		\$5,870,048 (4)	\$ 681 (3)

(1) Represents common stock issuable upon the exercise (at a price of \$2.25 per share) of outstanding warrants.

(2) Amount of shares of common stock issuable upon exercise of warrants to be registered. To be offered and sold by the selling stockholders upon the exercise of outstanding warrants.

(3) This amount is included in the aggregate filing fee for this registration statement.

Estimated solely for the purpose of computing the amount of the registration fee for the shares of common stock issuable upon exercise of warrants to be registered in accordance with Rule 457(g) under the Securities Act, based upon the higher of (i) the price at which the warrants may be exercised or (ii) the Market Price of the common stock.

The Registrant hereby amends this Registration Statement on such date or dates as may be necessary to delay its effective date until the Registrant shall file a further amendment which specifically states that this Registration Statement shall thereafter become effective in accordance with Section 8(a) of the Securities Act of 1933 or until the Registration Statement shall become effective on such date as the Commission, acting pursuant to said Section 8(a), may determine.

SUBJECT TO COMPLETION, DATED DECEMBER 22, 2016

The information contained in this prospectus is not complete and may be changed. The selling stockholders identified in this prospectus may not sell these securities until the registration statement filed with the Securities and Exchange Commission is effective. This prospectus is not an offer to sell these securities and it is not soliciting an offer to buy these securities in any jurisdiction where the offer or sale is not permitted.

PROSPECTUS

2,608,910 Shares of Common Stock
Offered by Selling Stockholders

This prospectus relates to the resale, from time to time, by the selling stockholders listed in this prospectus under the section "Selling Stockholders," of up to 2,608,910 shares of common stock, par value \$0.0001 per share, of Cancer Genetics, Inc., issuable upon the exercise of warrants (which if all exercised for cash would result in gross proceeds to the Company of approximately \$5,870,048). These shares include the following shares and are described in more detail under "Selling Stockholders":

The resale by certain Selling Stockholders of an aggregate of 1,233,910 shares of our common stock issuable upon the exercise of warrants to purchase our common stock, which warrants were issued in connection with a private placement consummated on May 25, 2016;

The resale by certain Selling Stockholders of an aggregate of 1,375,000 shares of our common stock issuable upon the exercise of warrants to purchase our common stock, which warrants were issued in connection with a private placement consummated on September 14, 2016.

The Selling Stockholders may sell the shares of common stock being offered by this prospectus from time to time on terms to be determined at the time of sale through ordinary brokerage transactions or through any other means described in this prospectus under "Plan of Distribution." The prices at which the Selling Stockholders may sell the shares will be determined by the prevailing market price for the shares or in negotiated transactions. We will not receive any proceeds from the sale of the shares by the Selling Stockholders. However, we will receive the proceeds from the exercise of the warrants by the Selling Stockholders, if any, to the extent that the warrants are not exercised on a cashless basis. See the section entitled "Use of Proceeds" on page 3 of this prospectus.

Our common stock is listed on the on The NASDAQ Capital Market and traded under the symbol "CGIX." The last reported sales price of our common stock on The NASDAQ Capital Market on December 20, 2016 was \$1.50 per share. There were 18,887,594 shares of our common stock outstanding as of November 1, 2016.

Investing in our common stock is speculative and involves a high degree of risk. See "Risk Factors" beginning on page 3.

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

This prospectus may not be used to consummate sales of securities.

The date of this prospectus is , 2016.

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SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus and the documents we incorporate by reference in this prospectus contain forward-looking statements within the meaning of Private Securities Litigation Reform Act of 1995. All statements other than statements of historical facts included in this prospectus and in the documents we incorporate by reference in this prospectus may be deemed forward-looking statements for purposes of the Securities Act and the Exchange Act. We use the words “anticipate,” “believe,” “estimate,” “expect,” “intend,” “may,” “plan,” “project,” “will,” “would” and similar expressions to identify forward-looking statements, although not all forward-looking statements contain these identifying words. We cannot guarantee that we actually will achieve the plans, intentions or expectations disclosed in our forward-looking statements and, accordingly, you should not place undue reliance on our forward-looking statements. There are a number of important factors that could cause actual results or events to differ materially from the forward-looking statements that we make, including the factors included in the documents we incorporate by reference in this prospectus. You should read these factors and the other cautionary statements made in the documents we incorporate by reference as being applicable to all related forward-looking statements wherever they appear in this prospectus and any document incorporated by reference. We caution you that we do not undertake any obligation to update forward-looking statements made by us.

ABOUT THIS PROSPECTUS

This prospectus is part of a registration statement that we have filed with the Securities and Exchange Commission (the “SEC” or the “Commission”). By using such registration statement, the Selling Stockholders may, from time to time, offer and sell shares of our common stock pursuant to this prospectus. It is important for you to read and consider all of the information contained in this prospectus before making any decision whether to invest in the common stock. You should also read and consider the information contained in the documents that we have incorporated by reference as described in “Where You Can Find More Information, and “Incorporation of Certain Information by Reference” in this prospectus.

We and the Selling Stockholders have not authorized anyone to give any information or to make any representations different from that which is contained or incorporated by reference in this prospectus in connection with the offer made by this prospectus and, if given or made, such information or representations must not be relied upon as having been authorized by Cancer Genetics, Inc., or any Selling Stockholder. Neither the delivery of this prospectus nor any sale made hereunder and thereunder shall under any circumstances create an implication that there has been no change in the affairs of Cancer Genetics, Inc. since the date hereof. This prospectus does not constitute an offer or solicitation by anyone in any state in which such offer or solicitation is not authorized or in which the person making such offer or solicitation is not qualified to do so or to anyone to whom it is unlawful to make such offer or solicitation.

Cancer Genetics, Inc. is referred to herein as “Cancer Genetics”, “the Company”, “we”, “us”, and “our”, unless the context indicates otherwise.

We own various U.S. federal trademark registrations and applications, and unregistered trademarks and servicemarks, including MatBA®, UroGenRA®, FHACT®, FReCaD™, Expand Dx™, Summation™, Select One®, DLBCL Complete™, Cervixcyte™, Leuka™, CGI®, CLL Complete®, Focus::NGS™, Focus::Myeloid™, Focus::CLL™, Tissue of Origin®, TOOO®, Powered by CGI™ and Empowering Personal Cancer Treatment®. All other trademarks or trade names referred to in this prospectus are the property of their respective owners. Solely for convenience, the trademarks and trade names in this prospectus are referred to without the ® and ™ symbols, but such references should not be construed as any indicator that their respective owners will not assert, to the fullest extent under applicable law, their rights thereto. We do not intend the use or display of other companies’ trademarks and trade names to imply a relationship with, or endorsement or sponsorship of us by, any other companies.

PROSPECTUS SUMMARY

Investing in our securities involves a high degree of risk. This summary highlights some information contained or incorporated by reference in this prospectus. It may not contain all of the information that is important to you. Important information is incorporated by reference into this prospectus. To understand this offering fully, you should read carefully the entire prospectus, including “Risk Factors”, and the other financial statements and documents incorporated by reference in this prospectus.

Our Company

Overview

We are an emerging leader in the field of personalized medicine, enabling precision medicine in the field of oncology through our diagnostic products and services and molecular markers. We develop, commercialize and provide molecular- and biomarker-based tests and services that enable physicians to personalize the clinical management of each individual patient by providing genomic information to better diagnose, monitor and inform cancer treatment and that enable biopharmaceutical companies engaged in oncology trials to better select candidate populations and reduce adverse drug reactions by providing information regarding genomic factors influencing subject responses to therapeutics. We have a comprehensive, disease-focused oncology testing portfolio. Our tests and techniques target a wide range of cancers, covering eight of the top ten cancers in prevalence in the United States, with additional unique capabilities offered by our Tissue of Origin® test for identifying difficult to diagnose tumor types or poorly differentiated metastatic disease.

Our vision is to become the oncology diagnostics partner for biopharmaceutical companies and clinicians by participating in the entire care continuum from bench to bedside. We believe the diagnostics industry is undergoing a rapid evolution in its approach to oncology testing, embracing precision medicine and individualized testing as a means to drive higher standards of patient treatment and disease management. Similarly, biopharmaceutical companies are increasingly engaging companies such as ours to provide information on clinical trial participants' molecular profiles in order to identify biomarker and genomic variations that may be responsible for differing responses to pharmaceuticals, and particularly to oncology drugs, thereby increasing the efficiency of trials while lowering related costs. We believe tailored therapeutics can revolutionize oncology medicine through molecular- and biomarker-based testing services, enabling physicians and researchers to target the factors that make each patient and disease unique. We have created a unique position in the industry by providing targeted somatic analysis of tumor sample cells alongside germline analysis of an individual's non-cancerous cells' molecular profile as we attempt to reach the next milestone in personalized medicine. Individuals are born with germline mutations, and somatic mutations arise in tissues over the course of a lifetime.

Our services are performed at our state-of-the-art laboratories located in New Jersey, North Carolina, California, Shanghai (China), and Hyderabad, India. Our laboratories comply with the highest regulatory standards as appropriate for the services they deliver including CLIA, CAP, NY State, California State and NABL (India). Our services are built on a foundation of world-class scientific knowledge and intellectual property in solid and blood-borne cancers, as well as strong academic relationships with major cancer centers such as Memorial Sloan-Kettering, Mayo Clinic, and the National Cancer Institute.

Our clinical offerings include our portfolio of proprietary tests targeting hematological, urogenital and HPV-associated cancers, in conjunction with ancillary non-proprietary tests. Our proprietary tests target cancers that are difficult to prognose and predict treatment outcomes through currently available mainstream techniques. We provide our proprietary tests and services, along with a comprehensive range of non-proprietary oncology-focused tests and laboratory services, to oncologists and pathologists at hospitals, cancer centers, and physician offices, as well as biotech and pharmaceutical companies to support their clinical trials. Our proprietary tests are based principally on our expertise in specific cancer types, test development methodologies and proprietary algorithms correlating genetic events with disease specific information. Our portfolio primarily includes comparative genomic hybridization (CGH) microarrays and next generation sequencing (NGS) panels, and DNA fluorescent in situ hybridization (FISH) probes.

The non-proprietary testing services we offer are focused in part on specific oncology categories where we are developing our proprietary tests. We believe that there is significant synergy in developing and marketing a complete set of tests and services that are disease focused and delivering those tests and services in a comprehensive manner to help with treatment decisions. The insight that we develop in delivering the non-proprietary services are often leveraged in the development of our proprietary programs and now increasingly in the validation of our proprietary programs, such as MatBA and Focus::NGS.

Cancer Genetics Corporate Information

Our principal executive offices are located at 201 Route 17 North, 2nd Floor, Rutherford, New Jersey 07070, and our telephone number is (201) 528-9200. Our common stock is currently traded on The NASDAQ Capital Market under the symbol "CGIX." We maintain a corporate website at www.cancer-genetics.com. The contents of our website are not incorporated by reference into this prospectus and should not be considered to be a part of this prospectus or relied upon in connection herewith.

Cancer Genetics, Inc. was incorporated under the laws of the State of Delaware in April 1999. On July 16, 2014 we purchased substantially all of the assets of Gentris Corporation ("Gentris"), a laboratory specializing in pharmacogenomics profiling for therapeutic development, companion diagnostics and clinical trials. On August 18, 2014 we entered into two agreements by which we acquired BioServe Biotechnologies (India) Pvt. Ltd. ("BioServe"), a premier genomics services provider serving both the research and clinical markets in India, and as a result of the acquisition, BioServe became a subsidiary of ours. On October 9, 2015, Cancer Genetics acquired substantially all the assets and assumed certain liabilities of Response Genetics, Inc. ("Response Genetics") in connection with Response Genetics' filing of a chapter 11 petition for bankruptcy in the Delaware Bankruptcy Court for approximately \$12.9 million, comprised of \$7.5 million, in cash, and 788,584 shares of the Company's common stock, with the common stock being valued at \$5.4 million. Unless otherwise stated, all references to "us," "our," "Cancer Genetics," "we," the "Company" and similar designations refer to Cancer Genetics, Inc.

This prospectus and the information incorporated by reference include trademarks, service marks and trade names owned by us or other companies. All trademarks, service marks and trade names included or incorporated by reference into this prospectus are the property of their respective owners.

The Offering

Our selling stockholders named in the table beginning on page 8 of this prospectus (the "Selling Stockholders") are offering an aggregate of 2,608,910 shares of our common stock that are issuable upon the exercise of currently outstanding warrants. We will not receive any proceeds upon the sale of shares of common stock by the Selling Stockholders. We will receive the exercise price of the outstanding warrants that are exercised for cash. See "Use of Proceeds" beginning on page 3 of this prospectus. The shares being offered hereby will be acquired in connection with the exercise of outstanding warrants acquired by the Selling Stockholders as a result of private placements completed in May and September of 2016. See "Selling Stockholders." Our common stock is listed on the on The NASDAQ Capital Market and traded under the symbol "CGIX." The last reported sales price of our common stock on The NASDAQ Capital Market on December 20, 2016 was \$1.50 per share.

RISK FACTORS

Investing in our securities involves significant risks. Before making an investment decision, you should carefully consider the risks and other information we include or incorporate by reference in this prospectus. In particular, you should consider the risk factors under the heading “Risk Factors” included in our most recent Annual Report on Form 10-K, as may be revised or supplemented by our subsequent Quarterly Reports on Form 10-Q or Current Reports on Form 8-K, each of which are on file with the SEC and are incorporated herein by reference, and which may be amended, supplemented or superseded from time to time by other reports we file with the SEC in the future. Our business, financial condition, operating results and cash flows can be affected by a number of factors, any one of which could cause our actual results to vary materially from recent results or from our anticipated future results. The risks are not the only ones we face, but those we currently consider to be material. There may be other risks which we now consider immaterial, or which are unknown or unpredictable, with respect to our business, our competition, the regulatory environment, or otherwise that could have a material adverse effect on our business. The trading price of our securities could decline due to any of these risks, and you may lose all or part of your investment. This prospectus is qualified in its entirety by these risk factors.

RISKS RELATED TO THIS OFFERING

Our stockholders may be diluted by exercises of outstanding options and warrants.

As of September 30, 2016, we had outstanding options to purchase an aggregate of approximately 2,128,000 shares of our common stock at a weighted-average exercise price of \$9.44 per share and warrants to purchase an aggregate of approximately 7,145,000 shares of our common stock at a weighted-average exercise price of \$4.88 per share, including outstanding warrants to purchase an aggregate of 2,608,910 shares of our common stock at an exercise price of \$2.25 per share held by the Selling Stockholders in this offering. The exercise of such outstanding options and warrants will result in dilution of the value of our shares.

The sale of a substantial amount of our common stock, including resale of the shares of common stock issuable upon the exercise of the warrants held by the Selling Stockholder, in the public market could adversely affect the prevailing market price of our common stock.

The Selling Stockholders hold outstanding warrants to purchase an aggregate of 2,608,910 shares of our common stock at an exercise price of \$2.25 per share. Sales of substantial amounts of shares of our common stock in the public market, or the perception that such sales might occur, could adversely affect the market price of our common stock, and the market value of our other securities.

A substantial number of shares of common stock are being offered by this prospectus, and we cannot predict if and when the purchasers may sell such shares in the public markets. Furthermore, in the future, we may issue additional shares of common stock or other equity or debt securities convertible into common stock in connection with a financing, acquisition, litigation settlement, employee arrangements, or otherwise. Any such issuance could result in substantial dilution to our existing stockholders and could cause our stock price to decline.

USE OF PROCEEDS

We will not receive any proceeds from the sale of our common stock covered hereby by any of the Selling Stockholders. The shares of common stock to be sold in this offering have not yet been issued and will only be issued upon the exercise of warrants. We will receive estimated gross proceeds of approximately \$5,870,048 if all such warrants are exercised for cash. We intend to use any proceeds received from the exercise of the warrants for working capital and general corporate purposes. We will incur all costs associated with this registration statement and prospectus, which we anticipate to be approximately \$35,000.

DESCRIPTION OF CAPITAL STOCK

General

Our amended and restated certificate of incorporation authorizes us to issue up to 100,000,000 shares of common stock, par value \$0.0001 per share, and 9,764,000 shares of preferred stock, par value \$0.0001 per share. As of September 30, 2016, there were approximately 18,870,000 shares of common stock outstanding. The number of shares of common stock outstanding as of September 30, 2016 does not include (i) approximately 7,145,000 shares of common stock issuable upon the exercise of our outstanding warrants to purchase common stock as of September 30, 2016 or (ii) approximately 2,128,000 shares of common stock issuable upon the exercise of outstanding options to purchase common stock.

The following descriptions of our capital stock and provisions of our amended and restated certificate of incorporation an amended and restated bylaws are summaries and are qualified by reference to the amended and restated certificate of incorporation and the amended and restated bylaws. Copies of these documents have been filed with the SEC as exhibits to our registration statement, of which this prospectus forms a part.

Common Stock

The holders of our common stock are entitled to the following rights:

Voting Rights

Holders of our common stock are entitled to one vote per share in the election of directors and on all other matters on which stockholders are entitled or permitted to vote. Holders of our common stock are not entitled to cumulative voting rights.

Dividend Rights

Subject to the terms of any outstanding series of preferred stock, the holders of our common stock are entitled to dividends in the amounts and at times as may be declared by the board of directors out of funds legally available therefor.

Liquidation Rights

Upon liquidation or dissolution, holders of our common stock are entitled to share ratably in all net assets available for distribution to stockholders after we have paid, or provided for payment of, all of our debts and liabilities, and after payment of any liquidation preferences to holders of our preferred stock.

Other Matters

Holders of our common stock have no redemption, conversion or preemptive rights. There are no sinking fund provisions applicable to our common stock. The rights, preferences and privileges of the holders of our common stock are subject to the rights of the holders of shares of any series of preferred stock that we may issue in the future.

Preferred Stock

Our board of directors has the authority to issue preferred stock in one or more classes or series and to fix the designations, powers, preferences and rights, and the qualifications, limitations or restrictions thereof, including dividend rights, conversion right, voting rights, terms of redemption, liquidation preferences and the number of shares constituting any class or series, without further vote or action by the stockholders. Although we have no present plans to issue any other shares of preferred stock, the issuance of shares of preferred stock, or the issuance of rights to purchase such shares, could decrease the amount of earnings and assets available for distribution to the holders of common stock, could adversely affect the rights and powers, including voting rights, of the common stock, and could have the effect of delaying, deterring or preventing a change of control of us or an unsolicited acquisition proposal. The preferred stock provides for an adjustment of the conversion price in the event of an issuance or deemed issuance at a price less than the applicable conversion price, subject to certain exceptions.

Options

As of September 30, 2016, we had outstanding options to purchase an aggregate of approximately 2,128,000 shares of our common stock, with an approximate weighted average exercise price of \$9.44 per share.

Warrants

As of September 30, 2016, we had outstanding warrants to purchase an aggregate of approximately 7,145,000 shares of common stock, with an approximate weighted average exercise price of \$4.88 per share, consisting of:

- warrants to purchase an aggregate of approximately 243,000 shares of our common stock at an exercise price of \$10.00 per share, which were issued in connection with a financing transaction completed in October 2012;

- warrants to purchase an aggregate of approximately 582,000 shares of our common stock at an exercise price of \$15.00 per share, which were issued in connection with various financing transactions that were completed during 2011 and 2012;

- warrants to purchase an aggregate of approximately 3,450,000 shares of our common stock at an exercise price of \$5.00 per share, which were issued in connection with our public offering completed in November 2015; and

- warrants to purchase an aggregate of approximately 2,870,000 shares of our common stock at an exercise price of \$2.25 per share, which were issued in connection with our offerings in May and September 2016.

Anti-Takeover Effects of Delaware law and Our Certificate of Incorporation and Bylaws

The provisions of Delaware law, our certificate of incorporation and our bylaws described below may have the effect of delaying, deferring or discouraging another party from acquiring control of us.

Section 203 of the Delaware General Corporation Law

We are subject to Section 203 of the Delaware General Corporation Law, which prohibits a Delaware corporation from engaging in any business combination with any interested stockholder for a period of three years after the date that such stockholder became an interested stockholder, with the following exceptions:

- before such date, the board of directors of the corporation approved either the business combination or the transaction that resulted in the stockholder becoming an interested stockholder;

- 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 began, excluding for purposes of determining the voting stock outstanding (but not the outstanding voting stock owned by the interested stockholder) those shares owned (i) by persons who are directors and also officers and (ii) 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 such date, the business combination is approved by the board of directors and authorized at an annual or special meeting of the stockholders, and not by written consent, by the affirmative vote of at least 66 2/3% of the outstanding voting stock that is not owned by the interested stockholder.

In general, 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 or 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 loss, advances, guarantees, pledges or other financial benefits by or through the corporation.

In general, Section 203 defines an “interested stockholder” as an entity or person who, together with the person’s affiliates and associates, beneficially owns, or within three years prior to the time of determination of interested stockholder status did own, 15% or more of the outstanding voting stock of the corporation.

Certificate of Incorporation and Bylaws

Our certificate of incorporation and bylaws provide that:

- the authorized number of directors can be changed only by resolution of our board of directors;
- our bylaws may be amended or repealed by our board of directors or our stockholders;
- no action can be taken by stockholders except at an annual or special meeting of the stockholders called in accordance with our bylaws, and stockholders may not act by written consent, unless the stockholders amend the certificate of incorporation to provide otherwise;
- stockholders may not call special meetings of the stockholders or fill vacancies on the board;
- our board of directors will be authorized to issue, without stockholder approval, preferred stock, the rights of which will be determined at the discretion of the board of directors and that, if issued, could operate as a “poison pill” to dilute the stock ownership of a potential hostile acquirer to prevent an acquisition that our board of directors does not approve;
- our stockholders do not have cumulative voting rights, and therefore our stockholders holding a majority of the shares of common stock outstanding will be able to elect all of our directors; and
- our stockholders must comply with advance notice provisions to bring business before or nominate directors for election at a stockholder meeting.

Potential Effects of Authorized but Unissued Stock

We have shares of common stock and preferred stock available for future issuance without stockholder approval. We may utilize these additional shares for a variety of corporate purposes, including future public offerings to raise additional capital, to facilitate corporate acquisitions or payment as a dividend on the capital stock.

The existence of unissued and unreserved common stock and preferred stock may enable our board of directors to issue shares to persons friendly to current management or to issue preferred stock with terms that could render more difficult or discourage a third-party attempt to obtain control of us by means of a merger, tender offer, proxy contest or otherwise, thereby protecting the continuity of our management. In addition, the board of directors has the discretion to determine designations, rights, preferences, privileges and restrictions, including voting rights, dividend rights, conversion rights, redemption privileges and liquidation preferences of each series of preferred stock, all to the fullest extent permissible under the Delaware General Corporation Law and subject to any limitations set forth in our certificate of incorporation. The purpose of authorizing the board of directors to issue preferred stock and to determine the rights and preferences applicable to such preferred stock is to eliminate delays associated with a stockholder vote on specific issuances. The issuance of preferred stock, while providing desirable

flexibility in connection with possible financings, acquisitions and other corporate purposes, could have the effect of making it more difficult for a third-party to acquire, or could discourage a third-party from acquiring, a majority of our outstanding voting stock.

Limitations of Director Liability and Indemnification of Directors, Officers and Employees

Our amended and restated certificate of incorporation limits the liability of directors to the maximum extent permitted by Delaware law. Delaware law provides that directors of a corporation will not be personally liable for monetary damages for breach of their fiduciary duties as directors, except for liability for any:

- breach of their duty of loyalty to us or our stockholders;

- act or omission not in good faith or that involves intentional misconduct or a knowing violation of law;

- unlawful payments of dividends or unlawful stock repurchases or redemptions as provided in Section 174 of the Delaware General Corporation Law; or

- transaction from which the directors derived an improper personal benefit.

These limitations of liability do not apply to liabilities arising under the federal or state securities laws and do not affect the availability of equitable remedies such as injunctive relief or rescission.

Our amended and restated bylaws provide that we will indemnify our directors and officers to the fullest extent permitted by law, and may indemnify employees and other agents. Our amended and restated bylaws also provide that we are obligated to advance expenses incurred by a director or officer in advance of the final disposition of any action or proceeding.

We have obtained a policy of directors' and officers' liability insurance.

We plan to enter into separate indemnification agreements with our directors and officers. These agreements, among other things, require us to indemnify our directors and officers for any and all expenses (including reasonable attorneys' fees, retainers, court costs, transcript costs, fees of experts, witness fees, travel expenses, duplicating costs, printing and binding costs, telephone charges, postage, delivery service fees) judgments, fines and amounts paid in settlement actually and reasonably incurred by such directors or officers or on his or her behalf in connection with any action or proceeding arising out of their services as one of our directors or officers, or any of our subsidiaries or any other company or enterprise to which the person provides services at our request provided that such person follows the procedures for determining entitlement to indemnification and advancement of expenses set forth in the indemnification agreement. We believe that these bylaw provisions and indemnification agreements are necessary to attract and retain qualified persons as directors and officers.

The limitation of liability and indemnification provisions in our amended and restated certificate of incorporation and amended and restated bylaws may discourage stockholders from bringing a lawsuit against directors for breach of their fiduciary duties. They may also reduce the likelihood of derivative litigation against directors and officers, even though an action, if successful, might provide a benefit to us and our stockholders. Our results of operations and financial condition may be harmed to the extent we pay the costs of settlement and damage awards against directors and officers pursuant to these indemnification provisions.

Insofar as indemnification for liabilities arising under the Securities Act may be permitted to directors, officers or persons controlling us, we have been informed that, in the opinion of the SEC, such indemnification is against public policy as expressed in the Securities Act and is therefore unenforceable.

At present, there is no pending litigation or proceeding involving any of our directors or officers as to which indemnification is required or permitted, and we are not aware of any threatened litigation or proceeding that may result in a claim for indemnification.

Transfer Agent

The transfer agent and registrar for our common stock is Continental Stock Transfer & Trust Company. Its address is 17 Battery Place, 8th Floor, New York, NY 10004 and its telephone number is 212-509-4000.

Listing

Our common stock is listed on The NASDAQ Capital Market under the same symbol.

SELLING STOCKHOLDERS

We have filed with the Securities and Exchange Commission a registration statement on Form S-1, of which this prospectus is a part, to register for resale 2,608,910 shares of common stock issuable upon exercise of outstanding warrants, all of which have not previously been registered. All of the warrants are owned by the Selling Stockholders.

The common stock registered hereby consists of the following:

The resale by certain Selling Stockholders of an aggregate of 1,233,910 shares of our common stock issuable upon the exercise of warrants to purchase our common stock, which warrants were issued in connection with a private placement completed on May 25, 2016;

The resale by certain Selling Stockholders of an aggregate of 1,375,000 shares of our common stock issuable upon the exercise of warrants to purchase our common stock, which warrants were issued in connection with a private placement completed on September 14, 2016.

The following provides greater detail on these issuances:

On May 25, 2016, we consummated an offering pursuant to which certain institutional investors acquired 2,467,820 shares of the Company's common stock at a purchase price of \$2.00 per share. In a concurrent private placement, the investors also acquired warrants to purchase 1,233,910 shares of the common stock. Subject to certain ownership limitations, the warrants will be initially exercisable commencing six months from the issuance date at an exercise price equal to \$2.25 per share of common stock, subject to adjustments as provided under the terms of the warrants. The warrants are exercisable for five years from the initial exercise date. The aggregate gross proceeds for the sale of the common stock and warrants were approximately \$5 million.

On September 14, 2016, we consummated an offering pursuant to which certain institutional investors acquired 2,750,000 shares of the Company's common stock at a purchase price of \$2.00 per share. In a concurrent private placement, the investors also acquired warrants to purchase 1,375,000 shares of common stock. Subject to certain ownership limitations, the warrants will be initially exercisable commencing six months from the issuance date at an exercise price equal to \$2.25 per share of common stock, subject to adjustments as provided under the terms of the warrants. The warrants are exercisable for five years from the initial exercise date. The aggregate gross proceeds for the sale of the common stock and warrants will be \$5.5 million.

Stock Ownership

The table below sets forth the number of shares of common stock that are, as of October 23, 2016:

• owned beneficially by each of the Selling Stockholders prior to the offering;

• the percentage of our common stock owned by each Selling Stockholder prior to the offering, based on 18,887,594 shares of common stock issued and outstanding;

offered by each Selling Stockholder pursuant to this prospectus, which shares of common stock are underlying warrants already issued;

to be owned beneficially by each Selling Stockholder after completion of the offering, assuming that all of the warrants held by the Selling Stockholder are exercised, and all the shares offered in this prospectus are sold and that none of the other shares held by the Selling Stockholders are sold; and

the percentage of our common stock to be owned by each Selling Stockholder after completion of the offering, based on 18,887,594 shares of common stock issued and outstanding and assuming that all of the warrants held by the Selling Stockholder are exercised, and all the shares offered in this prospectus are sold and that none of the other shares held by the Selling Stockholders are sold.

Under the terms of the warrants issued in the private placements completed in May 2016 and September 2016, a selling stockholder may not exercise the warrants to the extent such exercise would cause such selling stockholder, together with its affiliates and attribution parties, to beneficially own a number of shares of common stock which would exceed 4.99% (which may be increased, but not to exceed 9.99%) of our then outstanding common stock following such exercise, excluding for purposes of such determination shares of common stock issuable upon exercise of the warrants which have not been exercised. The table below does not reflect this limitation, with the effect that beneficial ownership of the selling stockholders is presented (for purposes of disclosure in this prospectus only) on a fully as exercised basis.

For purposes of this table each Selling Stockholder is deemed to beneficially own:

the issued and outstanding shares of common stock owned by the Selling Stockholder as of October 23, 2016;

the shares of common stock underlying all warrants offered hereby owned by the Selling Stockholder as of October 23, 2016 (irrespective of whether such warrants are exercisable within 60 days after October 23, 2016); and

the shares of common stock underlying any other options or warrants owned by the Selling Stockholder that are exercisable as of October 23, 2016, or that were exercisable within 60 days after October 23, 2016

In addition, the Selling Stockholders identified below may have sold, transferred or otherwise disposed of all or a portion of such securities since the date on which information in this table is provided, including in transactions exempt from the registration requirements of the Securities Act. Information about the Selling Stockholders may change from time to time.

Except as otherwise noted, none of the Selling Stockholders has had any material relationship with us during the past three years.

In connection with the registration of the shares of our common stock offered in this prospectus, we will supply prospectuses to the Selling Stockholders.

Name of Selling Stockholder	Shares beneficially owned before the offering	Percentage of shares beneficially owned before the offering	Shares being offered hereby	Shares beneficially owned after the offering	Percentage of shares beneficially owned after the offering
Sabby Healthcare Master Fund, Ltd. (1)	980,371	4.95%	457,500	522,871	2.70%
Sabby Volatility Warrant Master Fund, Ltd.(2)	489,077	2.53%	222,500	266,577	1.40%

Empery Asset Master, Ltd.(3)	864,334	4.42%	318,069	546,265	2.84%
Empery Tax Efficient, LP(4)	459,858	2.39%	169,415	290,443	1.52%
Empery Tax Efficient II, LP(5)	679,161	3.50%	262,516	416,645	2.17%
John Pappajohn (6)	3,260,378	16.42%	158,910	3,101,468	15.74%
Anson Investments Master Fund LP (7)	750,000	3.92%	250,000	500,000	2.65%
Intracoastal Capital, LLC (8)	418,147	2.18%	250,000	168,147	*
Alpha Capital Anstalt	645,000	3.38%	215,000	430,000	2.28%
Osher Capital Partners	105,000	*	35,000	70,000	*
Cody R.J. Allison	9,750	*	1,750	8,000	*
Alice Ann Corporation	81,500	*	18,500	63,000	*
Robert G. Allison	103,000	*	31,000	72,000	*
RBC Capital Markets LLC CUST Robert G. Allison IRA	15,875	*	2,125	13,750	*
William H. Baxter Trustee FBO William H. Baxter Revocable Trust u/a dtd 7/3/96	37,500	*	7,500	30,000	*
RBC Capital Markets LLC CUST William H. Baxter IRA	37,500	*	7,500	30,000	*
Gary A. Bergren	65,000	*	17,500	47,500	*
David & Carole Brown Trustees FBO David & Carole Brown Revocable Trust u/a dtd 10/23/97	12,000	*	4,000	8,000	*
Anne. S. Chudnofsky	16,000	*	3,000	13,000	*
RBC Capital Markets LLC CUST Robert H. Clayburgh IRA	67,500	*	12,500	55,000	*
Gary E. & Leslie J. Clipper TTEE Gary & Leslie Clipper Trust u/a dtd 10/26/2015	18,875	*	3,625	15,250	*
RBC Capital Markets LLC CUST Edwin C. Freeman IRA	10,000	*	2,000	8,000	*
RBC Capital Markets LLC CUST P. Dan Gilbert SEP/IRA	12,750	*	2,250	10,500	*
Frances A. Gonyea	57,500	*	12,500	45,000	*
RBC Capital Markets LLC CUST Catherine F. Herrmann IRA	10,000	*	2,000	8,000	*
Dorothy J. Hoel	38,500	*	7,500	31,000	*
Richard A. Hoel	13,500	*	2,500	11,000	*

RBC Capital Markets LLC CUST Elizabeth J. Kuehne IRA	20,000 * 4,000	16,000 *
E. Kuehne & J. Romundstad TTEE Kuehne-Romundstad-Kuestad Family Trust DTD 8/12/2008	21,500 * 4,500	17,000 *
RBC Capital Markets LLC CUST James S. Mahoney IRA	30,000 * 6,000	24,000 *
RBC Capital Markets LLC CUST Michael E. McElligott IRA	19,250 * 3,750	15,500 *
Laurence R. North TTEE Laurence R. North Rev Tr u/a dtd 5/26/1999	10,000 * 2,000	8,000 *
RBC Capital Markets LLC CUST Ann L. Orchard IRA	12,500 * 2,500	10,000 *
Thomas A. Ouradnik TTEE Pioneer Mailroom Equipment, Inc. Profit Sharing Plan DTD 4/28/1994	50,000 * 10,000	40,000 *
John T. Potter	47,000 * 9,000	38,000 *
Carolyn Salon	33,500 * 6,500	27,000 *
Joel A. Salon	23,500 * 4,500	19,000 *
Paul and Nancy Seel Joint Account WROS	21,000 * 4,000	17,000 *
Carolyn K. Sorenson TTEE Carolyn K. Sorenson Living Trust u/a dtd 12/21/1995	10,000 * 2,000	8,000 *
RBC Capital Markets LLC CUST Roger J. Sorenson IRA	6,000 * 2,000	4,000 *
Judy E. Stillings-Klimas	6,000 * 2,000	4,000 *
RBC Capital Markets LLC CUST Margaret Vertin IRA	10,500 * 2,000	8,500 *
Ellis Limited Partnership	60,000 * 20,000	40,000 *
Thomas A. Ouradnik TTEE	17,000 * 3,000	14,000 *
Pioneer Mailroom Equipment, Inc. Money Purchase Plan DTD 4/28/1994		
RBC Capital Markets LLC CUST Stephen P. Vertin IRA	13,500 * 2,500	11,000 *

Stephen P. Vertin TTEE Stephen P. Vertin Trust DTD 9/17/2007	23,000* 4,500 18,500*
Pyramid Partners, L.P.	75,000* 25,000 50,000*
Richard W. Perkins TTEE Perkins Capital Management Inc. Profit Sharing Plan u/a dtd 12/15/1986	37,500* 12,500 25,000*

* Indicates ownership of less than 1%.

(1) Sabby Management, LLC serves as the Investment Manager of Sabby Healthcare Master Fund, Ltd. Hal Mintz is the Manager of Sabby Management, LLC and has voting and dispositive control over the shares being registered on behalf of Sabby Healthcare Master Fund, Ltd. Each of Sabby Management, LLC, and Hal Mintz disclaims beneficial ownership over the shares beneficially owned by Sabby Healthcare Fund, Ltd., except to the extent of their respective pecuniary interest therein.

(2) Sabby Management, LLC serves as the investment manager of Sabby Volatility Warrant Master Fund, Ltd. Hal Mintz is the Manager of Sabby Management, LLC and has voting and dispositive control over the shares being registered on behalf of Sabby Volatility Warrant Master Fund, Ltd. Each of Sabby Management, LLC, and Hal Mintz disclaims beneficial ownership over the shares beneficially owned by Sabby Volatility Warrant Master Fund, Ltd., except to the extent of their respective pecuniary interest therein.

(3) Empery Asset Management LP, the authorized agent of Empery Asset Master Ltd ("EAM"), has discretionary authority to vote and dispose of the shares held by EAM, including shares being registered on behalf of EAM, and may be deemed to be the beneficial owner of these shares. Martin Hoe and Ryan Lane, in their capacity as investment managers of Empery Asset Management LP, may also be deemed to have investment discretion and voting power over the shares held by EAM. EAM, Mr. Hoe and Mr. Lane each disclaim any beneficial ownership of these shares.

(4) Empery Asset Management LP, the authorized agent of Empery Tax Efficient, LP ("ETE"), has discretionary authority to vote and dispose of the shares held by ETE, including shares being registered on behalf of ETE, and may be deemed to be the beneficial owner of these shares. Martin Hoe and Ryan Lane, in their capacity as investment managers of Empery Asset Management LP, may also be deemed to have investment discretion and voting power over the shares held by ETE. ETE, Mr. Hoe and Mr. Lane each disclaim any beneficial ownership of these shares.

(5) Empery Asset Management LP, the authorized agent of Empery Tax Efficient II, LP ("ETE II"), has discretionary authority to vote and dispose of the shares held by ETE II, including shares being registered on behalf of ETE II, and may be deemed to be the beneficial owner of these shares. Martin Hoe and Ryan Lane, in their capacity as investment managers of Empery Asset Management LP may also be deemed to have investment discretion and voting power over the shares held by ETE II. ETE II, Mr. Hoe and Mr. Lane each disclaim any beneficial ownership of these shares.

(6) John Pappajohn serves as Chairman of our Board of Directors. Includes (i) 200,000 shares of common stock owned by his wife; (ii) 130,000 shares of common stock underlying options exercisable on or before October 23, 2016; (iii) 581,859 shares of common stock underlying warrants exercisable on or before October 23, 2016; (iv) 2,500 shares of unvested restricted stock as of October 23, 2016 and (v) 258,910 shares of common stock underlying warrants that are not exercisable on or before October 23, 2016 due to certain beneficial ownership limitations. Excludes 15,000 shares of common stock underlying options that are not exercisable on or before October 23, 2016.

(7) Anson Advisors Inc and Anson Funds Management LP, the Co-Investment Advisers of Anson Investments Master Fund LP ("Anson"), hold voting and dispositive power over the Common Shares held by Anson. Bruce

Winston is the managing member of Anson Management GP LLC, which is the general partner of Anson Funds Management LP. Moez Kassam and Adam Spears are directors of Anson Advisors Inc. Mr. Winston, Mr. Kassam and Mr. Spears each disclaim beneficial ownership of these Common Shares except to the extent of their pecuniary interest therein. The principal business address of Anson is 190 Elgin Ave; George Town, Grand Cayman.

(8) Mitchell P. Kopin ("Mr. Kopin") and Daniel B. Asher ("Mr. Asher"), each of whom are managers of Intracoastal Capital LLC ("Intracoastal"), have shared voting control and investment discretion over the securities reported herein that are held by Intracoastal. As a result, each of Mr. Kopin and Mr. Asher may be deemed to have beneficial ownership (as determined under Section 13(d) of the Securities Exchange Act of 1934, as amended (the "Exchange Act")) of the securities reported herein that are held by Intracoastal. Mr. Asher, who is a manager of Intracoastal, is also a control person of a broker-dealer. As a result of such common control, Intracoastal may be deemed to be an affiliate of a broker-dealer. Intracoastal acquired the ordinary shares being registered hereunder in the ordinary course of business, and at the time of the acquisition of the ordinary shares and warrants described herein, Intracoastal did not have any arrangements or understandings with any person to distribute such securities.

PLAN OF DISTRIBUTION

We are registering for resale by the Selling Stockholders a total of 2,608,910 shares of common stock, all of which are issuable upon the exercise of warrants by the Selling Stockholders.

The Selling Stockholders and any of their respective donees, transferees, pledgees, assignees and other successors-in-interest may offer and sell the shares covered by this prospectus at various times. The Selling Stockholders will act independently of us in making decisions with respect to the timing, manner and size of each sale. The Selling Stockholders may sell all or a portion of the shares of our common stock beneficially owned by them and offered hereby from time to time directly or through one or more underwriters, broker-dealers or agents. If the shares of common stock are sold through underwriters or broker-dealers, the Selling Stockholders will be responsible for underwriting discounts or commissions or agent's commissions. The shares of common stock may be sold on the NASDAQ, any national securities exchange or quotation service on which the securities may be listed or quoted at the time of sale, or in transactions otherwise than on these exchanges or systems and in one or more transactions at fixed prices, at prevailing market prices at the time of the sale, at varying prices determined at the time of sale, or at negotiated prices. These sales may be affected in transactions, which may involve crosses or block transactions.

The shares may be sold by means of one or more of the following methods:

- ordinary brokerage transactions and transactions in which the broker-dealer solicits purchasers;
- block trades in which the broker-dealer will attempt to sell the shares as agent but may position and resell a portion of the block as principal to facilitate the transaction;
- purchases by a broker-dealer as principal and resale by the broker-dealer for its account;
- an exchange distribution in accordance with the rules of the applicable exchange;
- privately negotiated transactions;
- broker-dealers may agree with the selling stockholders to sell a specified number of such shares at a stipulated price per share;

a combination of any such methods of sale; and
any other method permitted pursuant to applicable law.

The Selling Stockholders may sell their shares directly to purchasers or may use brokers, dealers, underwriters or agents to sell their shares. Brokers or dealers engaged by any Selling Stockholder may arrange for other brokers or dealers to participate. Brokers or dealers may receive commissions, discounts or concessions from the Selling Stockholders, or, if any such broker-dealer acts as agent for the purchaser of shares, from the purchaser in amounts to be negotiated immediately prior to the sale. The compensation received by brokers or dealers may, but is not expected to, exceed that which is customary for the types of transactions involved. Broker-dealers may agree with the Selling Stockholders to sell a specified number of shares at a stipulated price per share, and, to the extent the broker-dealer is unable to do so acting as agent for the Selling Stockholders, to purchase as principal any unsold shares at the price required to fulfill the broker-dealer commitment to the Selling Stockholders. Broker-dealers who acquire shares as principal may thereafter resell the shares from time to time in transactions, which may involve block transactions and sales to and through other broker-dealers, including transactions of the nature described above, in the over-the-counter market or otherwise at prices and on terms then prevailing at the time of sale, at prices then related to the then-current market price or in negotiated transactions.

If the Selling Stockholders enter into arrangements with brokers or dealers, as described above, we are obligated to file a post-effective amendment to the registration statement of which this prospectus forms a part, disclosing such arrangements, including the names of any broker dealers acting as underwriters.

The Selling Stockholders and any broker-dealers or agents that participate with the Selling Stockholders in the sale of the shares may be deemed to be "underwriters" within the meaning of the Securities Act. In that event, any commissions received by broker-dealers or agents and any profit on the resale of the shares purchased by them may be deemed to be underwriting commissions or discounts under the Securities Act.

The Selling Stockholders also may transfer the shares of common stock in other circumstances, in which case the transferees, pledgees or other successors-in-interest will be the selling beneficial owners for purposes of this prospectus.

Any shares of common stock covered by this prospectus that qualify for sale pursuant to Rule 144 or any other exemption from registration under the Securities Act, may be sold under Rule 144 or such other exemption from registration rather than pursuant to this prospectus.

Under applicable rules and regulations under the Exchange Act, any person engaged in the distribution of the resale securities may not simultaneously engage in market making activities with respect to the common stock for the applicable restricted period, as defined in Regulation M, prior to the commencement of the distribution. In addition, the Selling Stockholders will be subject to applicable provisions of the Exchange Act and the rules and regulations thereunder, including Regulation M, which may limit the timing of purchases and sales of the common stock by the Selling Stockholders or any other person. We will make copies of this prospectus available to the Selling Stockholders and have informed them of the need to deliver a copy of this prospectus to each purchaser at or prior to the time of the sale (including by compliance with Rule 172 under the Securities Act).

Under the securities laws of some states, the shares may be sold in such states only through registered or licensed brokers or dealers. In addition, in some states the shares may not be sold unless the shares have been registered or qualified for sale in the state or an exemption from registration or qualification is available and is complied with. We will bear all of the costs, expenses and fees in connection with the registration of the shares of common stock, other than any commissions, discounts or other fees payable to broker-dealers in connection with any sale of shares, which will be borne by the Selling Stockholder selling such shares of common stock along with the fees and expenses of his, her or its counsel.

LEGAL MATTERS

The validity of the shares of common stock offered by this prospectus will be passed upon for us by Lowenstein Sandler LLP, Roseland, New Jersey.

EXPERTS

The consolidated financial statements as of and for the year ended December 31, 2015, incorporated in this prospectus by reference from the Company's Annual Report on Form 10-K filed with the SEC on March 10, 2016, has been audited by RSM US LLP (formerly McGladrey LLP through October 25, 2015), an independent registered public accounting firm, as stated in their report, which is incorporated herein by reference. Such consolidated financial statements have been so incorporated in reliance upon the report of such firm given upon their authority as experts in accounting and auditing.

INCORPORATION OF CERTAIN DOCUMENTS BY REFERENCE

The following documents previously filed by us with the SEC are incorporated in this prospectus by reference:

- (a) Our Annual Report on Form 10-K for the fiscal year December 31, 2015, filed with the SEC on March 10, 2016;
- (b) Amendment No. 1 on Form 10-K/A to our Annual Report on Form 10-K for the fiscal year ended December 31, 2015, filed with the SEC on April 28, 2016;
- (c) Our Proxy Statement on Schedule 14A for our 2016 Annual Meeting of Stockholders, filed with the SEC on September 12, 2016;
Our Quarterly Reports on Form 10-Q for the quarterly period ended March 31, 2016 filed with the SEC on May 10, 2016, for the quarterly period ended June 30, 2016 filed with the SEC on August 9, 2016 and for the quarterly period ended September 30, 2016 filed with the SEC on November 9, 2016;
Our Current Reports on Form 8-K and amendments thereto, filed with the SEC on March 10, 2016, May 10, 2016, May 20, 2016, June 30, 2016, July 22, 2016, August 10, 2016, September 9, 2016, September 16, 2016, October 13, 2016 and November 10, 2016 (excluding any information deemed furnished pursuant to Item 2.02 or Item 7.01 of any such Current Report on Form 8-K); and
Description of our common stock contained in the Registration Statement on Form 8-A, declared effective on August 12, 2013 (including any amendment or report filed with the SEC for the purpose of updating such description).
- (f) August 12, 2013 (including any amendment or report filed with the SEC for the purpose of updating such description).

All documents subsequently filed by us pursuant to Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act, prior to the filing of a post-effective amendment which indicates that all securities offered hereunder have been sold or which deregisters all such securities then remaining unsold shall be deemed to be incorporated by reference in this prospectus and to be a part hereof from the date of filing of such reports and documents.

We will provide to each person, including any beneficial owner, to whom a prospectus is delivered, copies of these filings, excluding all exhibits unless an exhibit has been specifically incorporated by reference in such filings, at no cost, upon written or oral request made to:

Cancer Genetics, Inc.
201 Route 17 North, 2nd Floor
Rutherford, NJ 07070
(201) 528-9200

Attention: Jay A. Roberts, Secretary

The information relating to us contained in this prospectus does not purport to be comprehensive and should be read together with the information contained in the documents incorporated or deemed to be incorporated by reference in this prospectus.

You should rely only on the information contained in this prospectus and in the documents incorporated by reference above. We have not authorized anyone else to provide you with different information. You should not assume that the information in this prospectus or in the documents incorporated by reference is accurate on any date other than the date on the front of those documents. The information we incorporate by reference is an important part of this prospectus, and any information that we file later with the SEC will automatically update and supersede this information.

WHERE YOU CAN FIND MORE INFORMATION

This prospectus constitutes part of a registration statement on Form S-1 filed under the Securities Act of 1933 with respect to the securities. As permitted by the SEC rules, this prospectus omits some information and exhibits included in the registration statement, copies of which may be obtained upon payment of a fee prescribed by the Commission or may be examined free of charge at the principal office of the SEC in Washington, D.C.

We are subject to the informational requirements of the Securities Exchange Act of 1934 and in accordance therewith file reports, proxy statements and other information with the SEC. The reports, proxy statements and other information filed by us with the SEC can be inspected and copied at the Public Reference Room maintained by the SEC at 100 Fifth Street, N.E., Washington, D.C. 20549. Copies of filings can be obtained from the Public Reference Room maintained by the SEC by calling the SEC at 1-800-SEC-0330. In addition, the Commission maintains a website that contains reports, proxy and informational statements and other information filed electronically with the SEC at <http://www.sec.gov>.

You should rely only on the information contained in this prospectus, including information incorporated by reference as described above. We have not authorized anyone else to provide you with different information. You should not assume that the information in this prospectus is accurate as of any date other than the date on the front of those documents or that any document incorporated by reference is accurate as of any date other than its filing date. You should not consider this prospectus to be an offer or solicitation relating to the securities in any jurisdiction in which such an offer or solicitation relating to the securities is not authorized. Furthermore, you should not consider this prospectus to be an offer or solicitation relating to the securities if the person making the offer or solicitation is not qualified to do so, or if it is unlawful for you to receive such an offer or solicitation.

2,608,910 Shares
Common Stock

PROSPECTUS

, 2016

PART II

INFORMATION NOT REQUIRED IN PROSPECTUS

Item 13. Other Expenses of Issuance and Distribution.

The following table sets forth the various expenses to be incurred in connection with the registration of the securities being registered hereby, all of which will be borne by us. All amounts shown are estimates except the SEC registration fee.

SEC registration fee	\$681
Legal fees and expenses	\$20,000*
Accounting fees and expenses	\$10,000*
Miscellaneous	\$4,319
Total expenses	\$35,000*

* Estimated.

Item 14. Indemnification of Directors and Officers.

We are incorporated under the laws of the State of Delaware. Section 145 of the Delaware General Corporation Law authorizes a court to award, or a corporation's board of directors to grant, indemnity to directors and officers in terms sufficiently broad to permit such indemnification under certain circumstances for liabilities, including reimbursement for expenses incurred, arising under the Securities Act of 1933, as amended, or the Securities Act.

Our third amended and restated certificate of incorporation provides for indemnification of our directors and executive officers to the maximum extent permitted by the Delaware General Corporation Law, and our amended and restated bylaws provide for indemnification of our directors and executive officers to the maximum extent permitted by the Delaware General Corporation Law.

In addition, we have entered into indemnification agreements with each of our current directors and executive officers. These agreements will require us to indemnify these individuals to the fullest extent permitted under Delaware law against liabilities that may arise by reason of their service to us and to advance expenses incurred as a result of any proceeding against them as to which they could be indemnified. We also intend to enter into indemnification agreements with our future directors and executive officers.

Item 15. Recent Sales of Unregistered Securities.

Since December 20, 2013, the Registrant made sales of the following unregistered securities:

Common Stock Issuances

On July 15, 2014, the Registrant issued 147,843 shares of common stock in connection with its the acquisition of Gentris Corporation.

On August 18, 2014, the Registrant issued 31,370 restricted shares of common stock in connection with its acquisition of Bioserve Biotechnologies (India) Pvt. Ltd.

On August 21, 2015, the Registrant issued 788,584 shares of common stock in connection with its acquisition of substantially all of Response Genetics, Inc.'s assets.

The common stock issuances listed above were exempt from registration under the Securities Act of 1933, as amended (the "Securities Act"), in reliance on Section 4(a)(2) of the Securities Act, relative to transactions by an issuer not involving a public offering.

Warrant Issuances

On May 19, 2016, the Registrant issued 2,500,000 shares of common stock to certain institutional investors, par value \$0.0001 per share, at a purchase price of \$2.00 per share. Concurrently with the sale of the common stock, pursuant to the purchase agreement the Registrant also sold warrants to purchase 1,250,000 shares of common stock. The aggregate gross proceeds for the sale of the common stock and warrants were approximately \$5 million. Subject to certain ownership limitations, the warrants were initially exercisable commencing six months from the issuance date at an exercise price equal to \$2.25 per share of common stock, subject to adjustments as provided under the terms of the warrants. The warrants are exercisable for five years from the initial exercise date. In connection with this sale, the Registrant agreed to pay H.C. Wainwright & Co. ("Wainwright"), as placement agent, an aggregate fee equal to 7% of the gross proceeds received by the Registrant from the sale of the securities in the transactions. The Registrant also agreed to grant to Wainwright or its designees warrants to purchase up to 5% of the aggregate number of shares sold in the transactions. The Registrant also paid Wainwright a reimbursement for out of pocket expenses in connection with marketing the transaction in the amount of up to \$10,000 and a reimbursement for legal fees and expenses of the placement agent in the amount of up to \$50,000.

On September 8, 2016, the Registrant issued 2,750,000 shares of common stock to certain institutional investors, par value \$0.0001 per share, at a purchase price of \$2.00 per share. Concurrently with the sale of the common stock, pursuant to the Purchase Agreement the Registrant also sold warrants to purchase 1,375,000 shares of common Stock. The aggregate gross proceeds for the sale of the common stock and warrants were \$5.5 million. Subject to certain ownership limitations, the warrants were initially exercisable commencing six months from the issuance date at an exercise price equal to \$2.25 per share of common stock, subject to adjustments as provided under the terms of the warrants. The warrants are exercisable for five years from the initial exercise date. In connection with this sale, the Registrant agreed to pay Wainwright, as placement agent, an aggregate fee equal to 7% of the gross proceeds received by the Registrant from the sale of the securities in the transactions. The Registrant also agreed to grant to Wainwright or its designees warrants to purchase up to 5% of the aggregate number of shares sold in the transactions. The Registrant also paid Wainwright a reimbursement for out of pocket expenses in connection with marketing the transaction in the amount of up to \$10,000 and a reimbursement for legal fees and expenses of the placement agent in the amount of up to \$50,000.

The warrants and the shares issuable upon exercise of the warrants described above were sold and issued without registration under the Securities Act of 1933 (the "Securities Act") in reliance on the exemptions provided by Section 4(a)(2) of the Securities Act as transactions not involving a public offering and Rule 506 promulgated under the Securities Act as sales to accredited investors, and in reliance on similar exemptions under applicable state laws.

Item 16. Exhibits.

Exhibit Description of Exhibit

- | | |
|-----|---|
| 3.1 | Third Amended and Restated Certificate of Incorporation of Cancer Genetics, Inc., filed as Exhibit 3.1 to quarterly report on Form 10-Q filed on May 15, 2013 and incorporated herein by reference. |
| 3.2 | Amended and Restated Bylaws of Cancer Genetics, Inc., filed as Exhibit 3.4 to Form S-1/A filed on April 30, 2012 (File No. 333-178836) and incorporated herein by reference. |

- 4.1 Specimen of Common Stock Certificate, filed as Exhibit 4.1 to Form S-1/A filed on May 16, 2012 (File No. 333-178836) and incorporated herein by reference.
 - 4.2 Form of Warrant Agreement, filed as Exhibit 4.1 to Form 8-K filed on May 20, 2016 and incorporated herein by reference.
 - 4.3 Form of Warrant Agreement, filed as Exhibit 4.1 to Form 8-K filed on September 9, 2016 and incorporated herein by reference.
 - 5.1 Opinion of Lowenstein Sandler LLP†
 - 23.1 Consent of RSM US LLP†
 - 23.2 Consent of Lowenstein Sandler LLP (included in Exhibit 5.1)†
 - 24.1 Power of Attorney (included on the signature page of this registration statement)†
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† Filed herewith.

Item 17. Undertakings.

The undersigned registrant hereby undertakes:

- (1) To file, during any period in which offers or sales are being made, a post-effective amendment to this registration statement:
 - (i) To include any prospectus required by Section 10(a)(3) of the Securities Act of 1933;
 - (ii) To reflect in the prospectus any facts or events arising after the effective date of the registration statement (or the most recent post-effective amendment thereof) which, individually or in the aggregate, represent a fundamental change in the information set forth in the registration statement. Notwithstanding the foregoing, any increase or decrease in volume of securities offered (if the total dollar value of securities offered would not exceed that which was registered) and any deviation from the low or high end of the estimated maximum offering range may be reflected in the form of prospectus filed with the Securities and Exchange Commission pursuant to Rule 424(b) if, in the aggregate, the changes in volume and price represent no more than a 20% change in the maximum aggregate offering price set forth in the "Calculation of Registration Fee" table in the effective registration statement; and
 - (iii) To include any material information with respect to the plan of distribution not previously disclosed in the registration statement or any material change to such information in the registration statement;
- (2) That, for the purpose of determining any liability under the Securities Act of 1933, each such post-effective amendment shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.
- (3) To remove from registration by means of a post-effective amendment any of the securities being registered which remain unsold at the termination of the offering.

(4) That, for the purpose of determining liability under the Securities Act of 1933 to any purchaser, each prospectus filed pursuant to Rule 424(b) as part of a registration statement relating to an offering, other than registration statements relying on Rule 430B or other than prospectuses filed in reliance on Rule 430A (§230.430A of this chapter), shall be deemed to be part of and included in the registration statement as of the date it is first used after effectiveness. Provided, however, that no statement made in a registration statement or prospectus that is part

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of the registration statement or made in a document incorporated or deemed incorporated by reference into the registration statement or prospectus that is part of the registration statement will, as to a purchaser with a time of contract of sale prior to such first use, supersede or modify any statement that was made in the registration statement or prospectus that was part of the registration statement or made in any such document immediately prior to such date of first use.

Insofar as indemnification for liabilities arising under the Securities Act of 1933 may be permitted to directors, officers and controlling persons of the registrant pursuant to the foregoing provisions, or otherwise, the registrant has been advised that in the opinion of the Securities and Exchange Commission such indemnification is against public policy as expressed in the Securities Act of 1933 and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the registrant of expenses incurred or paid by a director, officer or controlling person of the registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Securities Act of 1933 and will be governed by the final adjudication of such issue.

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, as amended, the registrant certifies that it has reasonable grounds to believe that it meets all of the requirements for filing on Form S-1 and has duly caused this registration statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of Rutherford, State of New Jersey, on December 22, 2016.

CANCER GENETICS, INC.

By: /s/ Panna L. Sharma

Name: Panna L. Sharma

Title: Chief Executive Officer

KNOW ALL PERSONS BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints Panna L. Sharma and Edward J. Sitar, and either of them, as his or her true and lawful attorneys-in-fact and agents, with full power of substitution and resubstitution, for him or her and in his or her name, place and stead, in any and all capacities, to sign any and all amendments (including post-effective amendments) and supplements to this registration statement (or any other registration statement for the same offering that is effective upon filing pursuant to Rule 462(b) under the Securities Act of 1933, as amended) and to file the same, with all exhibits thereto and other documents in connection therewith, with the Securities and Exchange Commission, hereby ratifying and confirming all that each of said attorneys-in-fact and agents, or his or her substitute or substitutes, may do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Act of 1933, this registration statement has been signed by the following persons in the capacities and on the dates indicated.

Signature	Title	Date
/s/ Panna L. Sharma Panna L. Sharma	Director, President and Chief Executive Officer (Principal Executive Officer)	December 22, 2016
/s/ Edward J. Sitar Edward J. Sitar	Chief Financial Officer (Principal Financial Officer and Principal Accounting Officer)	December 22, 2016
/s/ John Pappajohn John Pappajohn	Director (Chairman of the Board)	December 22, 2016
/s/ Geoffrey Harris Geoffrey Harris	Director	December 22, 2016
/s/ Edmund Cannon Edmund Cannon	Director	December 22, 2016
/s/ Raju S. K. Chaganti Raju S.K. Chaganti, Ph.D.	Director	December 22, 2016

/s/ Franklyn G. Prendergast Director December 22, 2016
Franklyn G. Prendergast, M.D., Ph.D.

/s/ Howard McLeod Director December 22, 2016
Howard McLeod

/s/ Michael J. Welsh Director December 22, 2016
Michael J. Welsh, M.D.

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