BOVIE MEDICAL CORP Form S-3 December 16, 2014

As filed with the Securities and Exchange Commission on December 16, 2014

Registration No. 333-____

UNITED STATES

SECURITIES AND EXCHANGE COMMISSION

Washington, DC 20549

FORM S-3

REGISTRATION STATEMENT

Under

THE SECURITIES ACT OF 1933

BOVIE MEDICAL CORPORATION

(Exact name of Registrant as specified in its charter)

Delaware 11-2621692

(State or other jurisdiction of Incorporation or organization)

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

4 Manhattanville Road

Suite 106

Purchase, New York 10577

(914) 468-4009

(Address, including zip code, and telephone number, including area code, of Registrant's principal executive offices)

Peter L. Donato

Chief Financial Officer

4 Manhattanville Road

Suite 106

Purchase, New York 10577

(914) 468-4009

(Name, address, including zip code, and telephone number, including area code, of agent for service)

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Approximate date of commencement of proposed sale to the public:

From time to time after the effective date of this Registration Statement as determined by market conditions.

If the only securities being registered on this Form are being offered pursuant to dividend or interest reinvestment plans, please check the following box:

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, other than securities offered only in connection with dividend or interest reinvestments plans, check the following box: x

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 number of the earlier effective registration statement for the same offering.

If this form is a registration statement pursuant to General Instruction I.D. or a post-effective amendment thereto that shall become effective upon filing with the Commission pursuant to Rule 462(e) under the Securities Act, check the following box.

If this form is a post-effective amendment to a registration statement filed pursuant General Instruction I.D. filed to register additional securities or additional classes of securities pursuant to Rule 413(b) under the Securities Act, check the following box."

Indicate by check mark whether Registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or a smaller reporting company.

Large Accelerated Filer Non-Accelerated Filer

Accelerated Filer Smaller Reporting Companyx

CALCULATION OF REGISTRATION FEE

	Amount to be	Proposed Maximum Offering	Proposed Maximum	
Title of Each Class of	Registered	Price Per Security	Aggregate Offering	Amount of Registration
Securities to be Registered	(1)(2)	(3)	Price (4)	Fee (4)
Common Stock, par value	(1)(2)			
\$.001 per share		(3)	(4)	(4)
Preferred Stock, par value	(1)(2)			
\$.001 per share		(3)	(4)	(4)
Debt Securities	(1)(2)	(3)	(4)	(4)
Warrants	(1)(2)	(3)	(4)	(4)
Units (5)	(1)(2)	(3)	(4)	(4)
Total	(1)(2)	(3)	\$25,000,000	\$ 2,905

- (1) There are being registered hereunder such indeterminate number of shares of common stock, such indeterminate number of shares of preferred stock, such indeterminate principal amount of debt securities, such indeterminate number of warrants to purchase common stock and/or preferred stock and such indeterminate number of units as may be sold by the Registrant from time to time, which together shall have an aggregate initial offering price not to exceed \$25,000,000. If any debt securities are issued at an original issue discount, then the offering price of such debt securities shall be in such greater principal amount at maturity as shall result in an aggregate offering price not to exceed \$25,000,000, less the aggregate dollar amount of all securities previously issued hereunder. Any securities registered hereunder may be sold separately or as units with the other securities registered hereunder. The proposed maximum offering price per unit will be determined, from time to time, by the Registrant in connection with the issuance by the Registrant of the securities registered hereunder. The securities registered hereunder also include such indeterminate number of shares of common stock and amount of debt securities as may be issued upon conversion of or exchange for common stock, preferred stock or debt securities that provide for conversion or exchange, upon exercise of warrants or pursuant to the anti-dilution provisions of any of such securities. In addition, this registration statement also relates to an indeterminate number of shares of common stock that may be issued upon stock splits, stock dividends or similar transactions in accordance with Rule 416 under the Securities Act of 1933.
- (2) Subject to the restrictions of Section 713 of the NYSE MKT Company Guide, the Registrant may sell no more than 20% of its shares in a primary offering, in any given year if such shares are sold below the greater of book value or market value.
- (3) The proposed maximum offering price per class of security will be determined from time to time by the Registrant in connection with the issuance by the Registrant of the securities registered hereunder. The principal amount of any debt securities issued with original issue discount will be greater at maturity. If any debt securities are issued with original issue discount, then the offering price of such debt securities shall be in such greater principal amount as shall result in an aggregate initial offering price not to exceed \$25,000,000, less the aggregate dollar amount of all securities previously issued hereunder.

- (4) Estimated solely for the purpose of calculating the registration fee pursuant to Rule 457(o) of the Securities Act of 1933.
- (5) Consisting of some or all of the securities listed above, in any combination, including common stock, preferred stock, debt securities and warrants.

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 this Registration Statement shall become effective on such date as the Commission, acting pursuant to Section 8(a), may determine.

The information in this prospectus is not complete and may be changed. These securities will not be sold 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 state where the offer or sale is not permitted.

SUBJECT TO COMPLETION, DATED DECEMBER 16, 2014

PROSPECTUS

BOVIE MEDICAL CORPORATION

\$25,000,000

Common Stock

Preferred Stock

Debt Securities

Warrants

Units

We may offer and sell from time to time in one or more offerings up to \$25,000,000 in the aggregate of:

- shares of our common stock;
- shares of our preferred stock, in one or more series;
- our debt securities, in one or more series, which may be either senior or subordinated debt securities;

- warrants to purchase shares of our common stock or preferred stock;
- units consisting of shares of common stock, debt securities and/or warrants to purchase shares of common stock and/or debt securities in any combination; or
- any combination of the foregoing.

Each time we offer securities, we will provide the specific terms of the securities offered in one or more supplements to this prospectus. We may also authorize one or more free writing prospectuses to be provided to you in connection with these offerings. The prospectus supplement and any related free writing prospectus may also add, update or change information contained in this prospectus. You should carefully read this prospectus, the applicable prospectus supplement and any related free writing prospectus, as well as any documents incorporated by reference, before buying any of the securities being offered.

The securities offered by this prospectus may be sold directly by us to investors, through agents designated from time to time or to or through underwriters or dealers. We will set forth the names of any underwriters or agents and any applicable fees, commissions, discounts and over-allotments in an accompanying prospectus supplement. For additional information on the methods of sale, you should refer to the section entitled "Plan of Distribution" in this prospectus and in the applicable prospectus supplement. The price to the public of such securities and the net proceeds we expect to receive from such sale will also be set forth in a prospectus supplement.

Our common stock is listed on the NYSE MKT Market under the symbol "BVX." On December 12, 2014 the last reported sale price of our common stock on the NYSE MKT Market was \$3.78 per share. As of December 12, 2014, the aggregate market value of our outstanding common stock held by non-affiliates was approximately \$62,091,270. For purposes of this disclosure, shares of common stock held by persons who are known by us to beneficially own more than 5% of the outstanding shares of common stock and shares held by officers and directors of the Registrant have been excluded in that such persons may be deemed to be affiliates. We have not offered any securities pursuant to General Instruction I.B.6 of Form S-3 during the prior 12-calendar month period that ends on, and includes, the date of this prospectus.

INVESTING IN OUR SECURITIES INVOLVES A HIGH DEGREE OF RISK. YOU SHOULD REVIEW CAREFULLY THE RISKS AND UNCERTAINTIES REFERENCED UNDER THE HEADING "RISK FACTORS" ON PAGE 8 OF THIS PROSPECTUS AS WELL AS THOSE CONTAINED IN THE APPLICABLE PROSPECTUS SUPPLEMENT AND ANY RELATED FREE WRITING PROSPECTUS, AND IN THE OTHER DOCUMENTS THAT ARE INCORPORATED BY REFERENCE INTO THIS PROSPECTUS.

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

THE DATE OF THIS PROSPECTUS IS DECEMBER 16, 2014.

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ABOUT THIS PROSPECTUS

This prospectus is part of a registration statement on Form S-3 that we filed with the Securities and Exchange Commission (the "SEC"), utilizing a "shelf" registration process. Under this shelf registration process, we may offer shares of our common stock and preferred stock, various series of debt securities and/or warrants to purchase any of such securities, either individually or in units, in one or more offerings, up to a total dollar amount of \$25,000,000. However, in no event will we sell more than one-third (1/3) of our "public float" (the market value of our common stock held by non-affiliates) in any twelve (12) month period. This prospectus provides you with a general description of the securities we may offer. Each time we offer a type or series of securities under this prospectus, we will provide a prospectus supplement that will contain more specific information about the specific terms of the offering. We may also authorize one or more free writing prospectuses to be provided to you that may contain material information relating to these offerings. Each such prospectus supplement (and any related free writing prospectus that we may authorize to be provided to you) may also add, update or change information contained in this prospectus or in documents incorporated by reference into this prospectus. We urge you to carefully read this prospectus, any applicable prospectus supplement and any related free writing prospectus, together with the information incorporated herein by reference as described under the headings "Where You Can Find Additional Information" and "Incorporation of Certain Information by Reference" before buying any of the securities being offered. THIS PROSPECTUS MAY NOT BE USED TO OFFER OR SELL SECURITIES UNLESS IT IS ACCOMPANIED BY A PROSPECTUS SUPPLEMENT.

You should rely only on the information contained or incorporated by reference in this prospectus, any applicable prospectus supplement and any related free writing prospectus. We have not authorized anyone to provide you with different information in addition to or different from that contained in this prospectus, any applicable prospectus supplement and any related free writing prospectus. No dealer, salesperson or other person is authorized to give any information or to represent anything not contained in this prospectus, any applicable prospectus supplement or any related free writing prospectus that we may authorize to be provided to you. You must not rely on any unauthorized information or representation. This prospectus is an offer to sell only the securities offered hereby, but only under circumstances and in jurisdictions where it is lawful to do so. You should assume that the information in this prospectus, any applicable prospectus supplement or any related free writing prospectus is accurate only as of the date on the front of the document and that any information incorporated by reference is accurate only as of the date of the document incorporated by reference, regardless of the time of delivery of this prospectus, any applicable prospectus supplement or any related free writing prospectus, or any sale of a security.

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. All of the summaries are qualified in their entirety by the actual documents. 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 Additional Information."

SUMMARY

The following summary highlights selected information from this prospectus or incorporated by reference in this prospectus. This summary does not contain all the information you should consider before investing in our securities. You should carefully read the entire prospectus, the applicable prospectus supplement and any related free writing prospectus, including the risks of investing in our securities referred to under the heading "Risk Factors" in this prospectus and contained in the applicable prospectus supplement and any related free writing prospectus, and in the other documents that are incorporated by reference into this prospectus. You should also carefully read the information incorporated by reference into this prospectus, including our financial statements, and the exhibits to the registration statement of which this prospectus is a part.

General

Bovie Medical Corporation ("Company", "Bovie Medical", "we", "us", or "our") was incorporated in 1982, under the laws of State of Delaware and has its principal executive office at 4 Manhattanville Road, Suite #106, Purchase, New York 10577.

We are an energy-based medical device company specializing in developing, manufacturing, and marketing a range of electrosurgical products and technologies as well as related medical products used in doctor's offices, surgery centers and hospitals worldwide. Our medical devices are marketed through Bovie's own well-respected brands (Bovie®, Aaron®, IDSTM and ICONTM) and on a private label basis to distributors throughout the world. The Company also leverages its expertise in the design, development and manufacturing of electrosurgical equipment by producing equipment for large, well known medical device manufacturers through original equipment manufacturing (OEM) agreements.

We are also the developer of J-Plasma®, a patented new plasma-based surgical product; which we believe has the potential to be a transformational product for surgeons. J-Plasma® utilizes a helium ionization process that produces a stable, focused beam of ionized gas that provides surgeons with greater precision, minimal invasiveness and an absence of conductive currents during surgery. While currently in the early stages of commercialization, J-Plasma® has been the subject of four independent white papers and has been cited therein for its ability to achieve improved outcomes in gynecological surgeries and dermatologic/ facial plastic surgery procedures.

Industry

Healthcare reform has caused consolidation among providers, with hospitals merging, physician practices joining hospitals and institutions combining to form Accountable Care Organizations to manage patients on an interdisciplinary basis. Although the medical device industry can be challenging and very competitive, we believe it will continue to have a positive long term growth trajectory with the number of surgical procedures performed increasing annually as a result of the aging "baby boomer" population and other healthcare trends. Additionally, we also anticipate a continued increase in minimally invasive surgical procedures due to ongoing advancements in technology coupled with continued overall pressure to reduce healthcare costs via a reduction in patient trauma and recovery time. Expanding global markets will also continue to provide growth opportunities for the medical device industry.

We believe that Bovie Medical has sustainable, competitive advantages in the medical device market for several reasons. We have a long history in electrosurgery. In fact, our inspiration dates back to the first use of an electrosurgical generator in an operating room in the U.S. in 1926 where Dr. William T. Bovie was present. Thus, the Bovie name is recognized by surgeons the world over for having pioneered the electrosurgery field and is recognized for its outstanding product quality supported by strong engineering and research and development capabilities. We believe that our equipment and devices have and will continue to provide better outcomes for patients at a lower cost to the healthcare system.

Business Strategy

In December 2013, Robert L. Gershon was appointed as Chief Executive Officer and a member of our Board of Directors and was charged with developing a growth strategy for Bovie and bringing together a management team comprised of existing and new executives. Over the course of 2014, the leadership team at Bovie has taken shape, and we have devoted significant time to evaluating the Company's competitive positioning, product pricing, sales and marketing programs and research and development portfolio. Through these efforts, we have been able to fine-tune our business strategy and work toward building a platform for long term success.

Our objective is to achieve profitable, sustainable growth by increasing our market share in the advanced energy category, including the commercialization of products that have the potential to be transformational with respect to the results they produce for surgeons and patients. In order to achieve this objective, we plan to leverage our long history in the industry, along with the reputation for quality and reliability that the Bovie brand enjoys within the medical community. At the same time, we will expand our energy products beyond radio frequency, move forward with research and developments projects aimed at creating value within our existing product portfolio and building our pipeline of new complementary products, and utilize multiple channels to bring new and existing products to market.

We are working to build our position in advanced electrosurgical generators and disposables, which can be used in diversified niche markets with minimally invasive surgical instruments, while furthering our status as a pioneer in plasma technology and its various medical applications.

For the first nine months of 2014, our core/OEM product sales, which include electrosurgery generators and electrodes continued to trend upward compared to the prior year, posting an increase of over 15% over the similar period in 2013. Additionally, we completed the development of our new DERMTM 101, DERMTM 102, and IDSTM 310 products, which represented the first new product launch in our core portfolio in several years and demonstrated Bovie's commitment to leadership in this space. Also in October 2014, we submitted a 510(K) application for the Bovie UltimateTM, a generator that combines J-Plasma® technology with the advanced standard features of the highest wattage operating room electrosurgical generator. On December 12, 2014 the 510(K) was approved.

Our J-Plasma® product received FDA approval in 2012, and we are applying for a CE mark, which would enable us to sell the product in Europe as well. While J-Plasma® is currently in the commercialization process, several important milestones have been achieved to date in 2014, and sales of J-Plasma® have gained momentum throughout 2014. Third quarter 2014 sales of \$91,000 were twice those of the first half of the year, and for the first nine months of 2014, J-Plasma® sales reached \$136,174 up substantially from the similar period in 2013. At the end of Q3 2014, we had 14 ordering accounts and our systems were being evaluated by over 20 Hospital Value Analysis Committees (VACs). We also had a direct sales force of 15 dedicated to driving adoption of J-Plasma® compared to one person at the beginning of 2014, and our direct sales force was supplemented by a cadre of 20 independent manufacturers' representatives.

J-Plasma® was recognized by the Society of Laparoendoscopic Surgeons (SLS) as an Innovative Product of the Year at their annual meeting in September 2014. SLS is an educational, non-profit organization established to ensure the highest standards for the practice of laparoscopic, endoscopic and minimally invasive surgery. Each year, SLS recognizes the most innovative products of the last 12 months that have a broad application in minimally invasive surgery.

We are continuing to make substantial investments in the development and marketing of our J-Plasma® technology for the long term benefit of the Company and its stakeholders, and this may adversely affect our short term profitability and cash flow, particularly over the next 12 to 24 months. While we believe that these investments have the potential to generate additional revenues and profits in the future, there can be no assurance that J-Plasma® will be successful or that such future revenues and profitability will be realized. From June of 2010 through December 31, 2013, we invested approximately \$2.9 million in the development and marketing of our J-Plasma® technology and a total of approximately \$1.8 million through the first nine months of 2014, bringing the total investment to approximately \$4.7 million since inception.

Significant Subsidiaries

Aaron Medical Industries, Inc. is a wholly-owned Florida corporation based in Clearwater, Florida. It is principally engaged in the business of marketing our medical products.

Company Products

We group our products into three main categories: electrosurgery, cauteries, and other products. Information regarding sales by product categories and related percentages can be found in our annual and quarterly reports filed with the SEC. We manufacture and market various medical products, both under private label and the Bovie brands (Bovie®, Aaron®, IDSTM, ICONTM and DERMTM), to distributors worldwide. Additionally, Bovie has original equipment manufacturing (OEM) agreements with other medical device manufacturers. These OEM and private label

arrangements and our use of the Bovie brands enable us to gain greater market share for the distribution of our products.

Electrosurgery Products

Electrosurgery is our largest product line and includes desiccators, generators, electrodes, electrosurgical pencils and various ancillary disposable products. These electrosurgical products are used during surgical procedures in gynecology, urology, plastic surgery, dermatology, veterinary, and other surgical markets for the cutting and coagulation of tissue. It is estimated that 80% of all surgical procedures performed worldwide are conducted by electrosurgery. Our electrosurgery products fall under two categories, monopolar and bipolar. Monopolar products require the use of a grounding pad attached to the patient for the return of the electrical current, while bipolar products consist of two electrodes; one for the inbound current and one for the return current and therefore do not require the use of a grounding pad.

DERMTM101 and DERMTM 102

This effective and economical 10 watt high frequency desiccator provides a low wattage platform for minor in-office skin procedures. We designed this product specifically for family practice physicians, pediatricians and other general practitioners, enabling them to perform simple skin procedures in their offices instead of referring the patient to a specialist saving the patient time and increasing the cash flow for the physician.

Aaron® 940/ Aaron® 950 / Aaron ®1250U

The Aaron® 940 is a Bovie® developed, low powered 40 watt high frequency desiccator, designed primarily for dermatology and family practice physicians. The units are used mainly for removing small skin lesions and growths as well as for coagulation for office based procedures.

The Aaron® 950 is a 60 watt high frequency desiccator with the added feature of a cut capacity for outpatient surgical procedures. In effect, the 950 is two independent surgical devices in one small package. It is designed mainly for use in doctors' offices and is utilized in a broad range of specialties including dermatology, gynecology, family practice, urology, plastic surgery and ophthalmology.

The Aaron® 1250U is a 120-watt multipurpose electrosurgery generator. The unit features monopolar and bipolar functions with pad sensing. This product is considered to be ideally suited for office-based procedures in the specialties of gynecology, plastic surgery and urology.

Aaron®2250 / 3250 and IDSTM 200 / 300 / 400

To address market demand for more powerful electrosurgical generators, Bovie® has developed 200, 300 and 400-watt multipurpose digital electrosurgery generators designed for the rapidly expanding surgi-center market and the hospital outpatient and inpatient markets. This equipment includes digital hardware that enables very high parallel data processing throughout the operation or procedure. All data is sampled and processed digitally. For the first time in electrosurgery, surgeons are able to measure tissue impedance in real time (5,000 times a second) thanks to the utilization of digital technology. The design of these units has been based on a digital feedback system. By using dedicated digital hardware in place of a general purpose controller for processing data, our equipment enables the power to be adjusted as the impedance varies, to deliver a consistent clinical effect.

The IDSTM 200 / Aaron® 2250 are 200-watt generators that have the capability to be used in the majority of procedures performed today in surgi-center or outpatient settings. Although 200 watts is more than enough power to do most procedures in the operating room, 300 watts is considered the standard and believed to be what most hospitals and surgi-centers will require. To meet this requirement, we developed the IDSTM 300/ Aaron® 3250.

IDSTM 310 / 210 and Aaron® 3350 / 2350 are the next generation of surgi-center and operating room generators. These units incorporate the best features of the IDSTM 300 and upgrade its capabilities by providing additional bipolar options, including the 225 watt Bovie bipolar feature and an auto bipolar feature. The 300 watt units also offer two pencils with simultaneous activation in fulguration mode.

The Bovie® IDSTM 400 is a 400 watt generator designed primarily for sale in markets outside of the United States. These units feature both monopolar and bipolar functions, have pad and tissue sensing, and include nine blended cutting settings.

The ICONTM Platform

The ICONTM product lines are innovative, custom designed specialty electrosurgical generators that incorporate an easy to use touch-screen interface that provides the user with added flexibility through various digitally built-in modes. In addition, the ICONTM product line was designed to enhance safety and convenience by protecting against pad burns by using split pads. It features specialized error messaging to prevent misinterpretation, allows for rapid troubleshooting, and has specialized audible alerts to indicate improper cable connections. The ICONTM line represents a new platform for Bovie, which we can leverage in the future to expand our portfolio of specialized generators as well as to offer upgrades to our existing units, with shorter times-to-market and lower development costs.

The $ICON^{TM}$ GI, $ICON^{TM}$ GP

The ICONTM GI is designed for the gastrointestinal ("GI") niche market, while the ICONTM GP is designed for a more general purpose operations and procedures performed in hospital operating rooms, surgery centers, etc.

Electrosurgical Disposables

ResistickTM II

ResistickTM II is a trademarked and proprietary coating that is applied to stainless steel that resist eschar (scab or scar tissue caused by burning) during surgery. We have experienced strong demand for this product since its introduction in 2011, and it represents our continued expansion of the Bovie® line of electrosurgical disposables.

Disposable Laparoscopic Electrodes

We are introducing a line of disposable laparoscopic electrodes in the first quarter of 2015 in ResitickTM coated and stainless steel for use by physicians from a broad group of specialties including gynecology, general surgery and urology[A1]. These electrodes will be offered in J-hook, L-hook, needle, ball and spatula design and have an adapter included which makes these laparoscopic electrodes usable with a 3/32" or 4mm plug.

Cauteries
Battery Operated Cauteries
Battery operated cauteries constitute our second largest product line. Cauteries were originally designed for precise hemostasis (to stop bleeding) in ophthalmology. The current use of cauteries has been substantially expanded to include a broad range of applications, including: sculpting woven grafts in bypass surgery, vasectomies, and for arresting bleeding in many types of surgery. Battery operated cauteries are primarily sterile one-time use products. We have continued to improve our offering and now have a snap design cautery which has a patent pending. It features a switch mechanism that dramatically reduces the potential of accidental activation from improper disposal. We manufacture one of the broadest lines of cauteries in the world, including but not limited to, a line of replaceable battery and tip cauteries, which are popular in overseas markets.
Other Products
Battery Operated Medical Lights
We manufacture and market a variety of specialty lighting instruments for use in ophthalmology as well as specialty lighting instruments for general surgery, hip replacement surgery and for the placement of endotracheal tubes in emergency and surgical procedures. We also manufacture and market physicians' office use penlights.
Nerve Locator Stimulator
We manufacture a nerve locator stimulator primarily used for identifying motor nerves in hand and facial reconstructive surgery. This instrument is a sterile, self-contained, battery-operated unit, for one time use.
J-Plasma Products
Capital-ICON $^{\text{TM}}$ GS

Bovie's J-Plasma® technology is the foundation for the ICONTM GS plasma system, which utilizes a helium ionization process producing a stable thin focused beam of ionized gas that can be controlled in a wide range of temperatures and intensities, providing the surgeon greater control and predictability with minimal thermal damage to surrounding tissue. The development of this new helium system generator also includes the design of a new proprietary handpiece.

The newly 510(K) approved Bovie UltimateTM generator will replace the ICONTMGS plasma system. In addition to the J-Plasma® technology, the Bovie UltimateTM will have the IDSTM 310 capability, offering users monopolar, bipolar and plasma features, all in one generator.

J-Plasma Disposable Portfolio

We offer different hand pieces for open and laparoscopic procedures. The helium based plasma generated from these devices have been proven to cause less thermal damage to tissue than C02 laser, argon plasma and RF energy products currently available on the market.

The most recent product launched in the J-plasma® portfolio is the Pistol Grip handle. This product offers improved ergonomics over the predecessor and is providing an increased rate adoption of the technology. We continue to solicit customer feedback. Bovie will continue to launch products from a rich pipeline that will allow surgeons to treat patients from a variety of surgical specialties.

The technology has a broad approval/indication and can be used on all soft tissue. The three primary specialties that are targeted in phase one of the product launch are gynecology, dermatology and plastic surgery. However, given the wide range of tissue applications for J-Plasma® we are engaged in ongoing development to create products for the gastrointestinal, general, urology, ear, nose & throat, and cardiovascular surgery specialties as well as wound management.

The advantages of cold plasma continue to be studied throughout the medical and scientific communities. We believe that surgical applications are just one area of opportunity for this technology.

Research and Development and New Products

Our research and development activities are an essential component of our efforts to develop new innovative products for introduction in the marketplace to drive sales growth. We continue to emphasize the development of proprietary products and product improvements to complement and expand our existing product lines. During the first nine months of 2014, we spent over \$1 million dollars in R&D versus \$938,000 during the same period of 2013, an increase of approximately 9%. In 2014, we hired a Director of Research and Development (R&D), and we maintain close working relationships with physicians and medical personnel in hospitals and universities who assist in product research and areas of development. Bovie products produced in 2014 thanks to our internal research and development activities include: the J-Plasma Pistol Grip, the DERMTM 101 and DERMTM 102, the IDSTM 310 and 210 and the Aaron® 3350 and 2350. Approximately one-third of our R&D spending is related to further developing our J-Plasma® product line.

Sales & Marketing

The majority of our core products are marketed through medical distributors, which distribute to more than 6,000 hospitals and to doctors and other healthcare facilities. New distributors are contacted through responses to our advertising in international and domestic medical journals and our presence at domestic and international trade shows. International sales represented approximately 14% of total revenues for the first nine months of 2014, compared to approximately 17% for full year 2013. Our products are sold in more than 150 countries through local dealers that are coordinated by sales and marketing personnel at our Clearwater, Florida facility.

During 2014, we commenced full scale commercialization efforts for J-Plasma®. As such; as of this date we have increased our direct sales force to 15 field-based selling professionals, and coupled with our independent manufacturing representatives give us a total sales force of 35. This is a hospital based selling organization with its focus on the use of J-Plasma® for operating room procedures. In addition, we have invested in training programs and marketing-related activities to support accelerated adoption of J-Plasma®.

The Securities We May Offer

We may offer shares of our common stock, various series of debt securities and/or warrants to purchase any of such securities, either individually or in units, with a total value of up to \$25,000,000 from time to time under this prospectus at prices and on terms to be determined at the time of any offering. This prospectus provides you with a general description of the securities we may offer. Each time we offer a type or series of securities under this prospectus, we will provide a prospectus supplement that will describe the specific amounts, prices and other important terms of the securities, including, to the extent applicable:

- designation or classification;
- aggregate principal amount or aggregate offering price;
- maturity, if applicable;
- original issue discount, if any;
- rates and times of payment of interest or dividends, if any;
- redemption, conversion, exercise, exchange or sinking fund terms, if any;
- preferences over other classes of our securities, if any;

- restrictive covenants, if any;
- voting or other rights, if any;
- conversion or exchange prices or rates, if any, and, if applicable, any provisions for changes to or adjustments in the conversion or exchange prices or rates and in the securities or other property receivable upon conversion or exchange; and
- important United States federal income tax considerations.

The prospectus supplement and any related free writing prospectus that we may authorize to be provided to you may also add, update or change information contained in this prospectus or in documents we have incorporated by reference. However, no prospectus supplement or free writing prospectus will offer a security that is not registered and described in this prospectus at the time of the effectiveness of the registration statement of which this prospectus is a part.

Common Stock. We may issue shares of our common stock from time to time. Holders of shares of common stock are entitled to one vote for each share on all matters to be voted on by the shareholders, and do not have cumulative voting rights. Subject to the preferences that may be applicable to any then outstanding shares of preferred stock, holders of shares of common stock are entitled to share ratably in dividends, if any, as may be declared from time to time by the Board of Directors in its discretion, from funds legally available therefore. In the event of our liquidation, dissolution or winding up, holders of our common stock will be entitled to share ratably in the net assets legally available for distribution to shareholders after the payment of all of our debts and other liabilities. Subject to the satisfaction of any liquidation preference granted to the holders of any outstanding shares of preferred stock, holders of common stock have no preemptive or other subscription rights, and there are no conversion rights or redemption with respect to such shares.

Preferred Stock. We may issue shares of our preferred stock from time to time, in one or more series. The rights, preferences and privileges of the shares of each wholly unissued series, and any qualifications, limitations or restrictions thereon, including dividend rights, conversion rights, preemptive rights, terms of redemption or repurchase, liquidation preferences, sinking fund terms and the number of shares constituting any series or the designation of any series would be set forth in a Certificate of Designations which would be filed with the Delaware Secretary of State. Convertible preferred stock will be convertible into our common stock or exchangeable for other securities. Conversion may be mandatory or at your option and would be at prescribed conversion rates.

Debt Securities. We may issue debt securities from time to time, in one or more series, as either senior or subordinated debt or as senior or subordinated convertible debt. The senior debt securities will rank equally with any other unsecured and unsubordinated debt. The subordinated debt securities will be subordinate and junior in right of payment, to the extent and in the manner described in the instrument governing the debt, to all of our senior indebtedness. Convertible debt securities will be convertible into or exchangeable for our common stock or other securities. Conversion may be mandatory or at your option and would be at prescribed conversion rates.

The debt securities will be issued under one or more documents called indentures, which are contracts between us and a national banking association or other eligible party, as trustee. In this prospectus, we have summarized certain general features of the debt securities. We urge you, however, to read the applicable prospectus supplement (and any free writing prospectus that we may authorize to be provided to you) related to the series of debt securities being offered, as well as the complete indentures that contain the terms of the debt securities. A form of indenture has been filed as an exhibit to the registration statement of which this prospectus is a part, and supplemental indentures and forms of debt securities containing the terms of the debt securities being offered will be filed as exhibits to the registration statement of which this prospectus is a part or will be incorporated by reference from reports we file with the SEC.

Warrants. We may issue warrants for the purchase of common stock, preferred stock and/or debt securities in one or more series. We may issue warrants independently or together with common stock, preferred stock and/or debt securities, and the warrants may be attached to or separate from these securities. In this prospectus, we have summarized certain general features of the warrants. We urge you, however, to read the applicable prospectus supplement (and any free writing prospectus that we may authorize to be provided to you) related to the particular

series of warrants being offered, as well as the complete warrant agreements and/or warrant certificates that contain the terms of the warrants.

Units. We may issue, in one or more series, units consisting of common stock, preferred stock debt securities and/or warrants for the purchase of common stock, preferred stock and/or debt securities in any combination. In this prospectus, we have summarized certain general features of the units. We urge you, however, to read the applicable prospectus supplement (and any free writing prospectus that we may authorize to be provided to you) related to the series of units being offered, as well as the complete unit agreement that contains the terms of the units.

We may evidence each series of units by unit certificates that we will issue. Units may be issued under a unit agreement that we enter into with a unit agent. We will indicate the name and address of the unit agent, if applicable, in the prospectus supplement relating to the particular series of units being offered.

CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus contains forward-looking statements within the meaning of Section 27A of the Securities Act regarding our business, financial condition, results of operations and prospects. Words such as expects, anticipates, intends, plans, believes, seeks, estimates and similar expressions or variations of such words are intended to identify forward-looking statements. However, these are not the exclusive means of identifying forward-looking statements. Although forward-looking statements contained in this prospectus reflect our good faith judgment, such statements can only be based on facts and factors currently known to us. Consequently, forward-looking statements are inherently subject to risks and uncertainties, and actual outcomes may differ materially from the results and outcomes discussed in the forward-looking statements. Further information about the risks and uncertainties that may impact us are described or incorporated by reference in "Risk Factors" below. You should read that section carefully. You should not place undue reliance on forward-looking statements, which speak only as of the date of this prospectus. We undertake no obligation to update publicly any forward-looking statements in order to reflect any event or circumstance occurring after the date of this prospectus or currently unknown facts or conditions or the occurrence of unanticipated events. In addition, our past results are not necessarily indicative of future results, thus, we cannot guarantee future results, levels of activity, performance or achievements.

RISK FACTORS

Investing in our securities involves significant risks. You should review carefully the risks and uncertainties described under the heading "Risk Factors" contained in, or incorporated into, the applicable prospectus supplement and any related free writing prospectus, and under similar headings in the other documents that are incorporated by reference herein or therein. Each of the referenced risks and uncertainties could adversely affect our business, operating results and financial condition, as well as adversely affect the value of an investment in our securities. Additional risks and uncertainties not known to us or that we believe are immaterial may also adversely affect our business, operating results and financial condition and the value of an investment in our securities.

USE OF PROCEEDS

Unless otherwise indicated in the applicable prospectus supplement, we currently intend to use the net proceeds from the sale of securities offered by this prospectus for the continued development and marketing of our J-Plasma® technology and for working capital and other general corporate purposes, including capital expenditures, facilities expansion, acquisitions of complementary products, technologies or businesses and repaying indebtedness we may incur from time to time. The timing and amount of our actual expenditures will be based on many factors, including cash flows from operations and the anticipated growth of our business. As a result, unless otherwise indicated in the prospectus supplement, our management will have broad discretion to allocate the net proceeds of the offerings.

DESCRIPTION OF CAPITAL STOCK

The following is only a summary of the material terms of our common stock and preferred stock. Because it is only a summary, it does not contain all the information that may be important to you. Accordingly, you should carefully read the more detailed provisions of our certificate of incorporation, as amended, and our by-laws, each of which has been filed with the SEC, as well as applicable provisions of Delaware law.

Authorized Capitalization

Our authorized capital stock consists of 40,000,000 shares of Common Stock, par value \$0.001 per share, and 10,000,000 shares of "blank check" Preferred Stock, par value \$.001 per share. As of December 10, 2014, there were 17,981,516 shares of common stock issued and 17,838,437 shares outstanding held by approximately 612 stockholders of record and over 2,034 beneficial owners; and 3,500,000 shares of Series A 6% Convertible Preferred Stock ("Series A Preferred Stock") held by 6 holders.

Common Stock

Holders of shares of common stock are entitled to one vote for each share on all matters to be voted on by the stockholders, and do not have cumulative voting rights, subject to the preferences that may be applicable to any then outstanding shares of preferred stock. Holders of shares of common stock are entitled to share ratably in dividends, if any, as may be declared from time to time by the Board of Directors in its discretion, from funds legally available therefore. In the event of our liquidation, dissolution or winding up, holders of our common stock will be entitled to share ratably in the net assets legally available for distribution to shareholders after the payment of all of our debts and other liabilities. Holders of common stock have no preemptive or other subscription rights, and there are no conversion rights or redemption with respect to such shares.

Preferred Stock

Our certificate of incorporation, as amended, provides that our Board of Directors has the authority, without further action by the stockholders, to issue up to a specified number of shares of preferred stock in one or more series and to fix the rights, preferences, privileges and restrictions of this preferred stock, including dividend rights, conversion rights, voting rights, terms of redemption, liquidation preferences, sinking fund terms and the number of shares constituting any series or the designation of a series, without further vote or action by the stockholders.

If we issue preferred stock, our Board of Directors would fix the rights, preferences, privileges and restrictions of the preferred stock of each series in a Certificate of Designations relating to that series. We will incorporate by reference as an exhibit to the registration statement that includes this prospectus or as an exhibit to a current report on Form 8-K, the form of any Certificate of Designations that describes the terms of the series of preferred stock we are offering before the issuance of the related series of preferred stock. This description will include:

- the title and stated value:
- the number of shares we are offering;
- the liquidation preference per share;
- the purchase price;
- the dividend rate, period and payment date and method of calculation for dividends;
- whether dividends will be cumulative or non-cumulative and, if cumulative, the date from which dividends will
 accumulate;
- the procedures for any auction and remarketing, if any;

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the provisions for a sinking fund, if any;

- the provisions for redemption or repurchase, if applicable, and any restrictions on our ability to exercise those redemption and repurchase rights;
- any listing of the preferred stock on any securities exchange or market;
- whether the preferred stock will be convertible into our common stock, and, if applicable, the conversion price, or how it will be calculated, and the conversion period;
- voting rights, if any, of the preferred stock;
- preemption rights, if any;
- restrictions on transfer, sale or other assignment, if any;
- a discussion of any material or special United States federal income tax considerations applicable to the preferred stock;
- the relative ranking and preferences of the preferred stock as to dividend rights and rights if we liquidate, dissolve or wind up our affairs;
- any limitations on issuance of any class or series of preferred stock ranking senior to or on a parity with the series of preferred stock as to dividend rights and rights if we liquidate, dissolve or wind up our affairs; and
- any other specific terms, preferences, rights or limitations of, or restrictions on, the preferred stock.

The issuance of preferred stock, whether pursuant to this offering or otherwise, could adversely affect the voting power, conversion or other rights of holders of our common stock. Preferred stock could be issued quickly with terms designed to delay or prevent a change in control of our company or make removal of management more difficult. Additionally, the issuance of preferred stock may have the effect of decreasing the market price of our common stock.

On December 13, 2013, the Company filed a Certificate to Set Forth Designations, Voting Powers, Preferences, Limitations, Restrictions, and Relative Rights (the "Certificate of Designations") of its Series A Preferred Stock with the Secretary of State of the State of Delaware to amend our articles of incorporation. As of December 10, 2014, there were 3,500,000 shares of Series A Preferred Stock issued and outstanding. The following is a summary of the rights, privileges and preferences of the Series A Preferred Stock:

Number of Shares. The number of shares of Preferred Stock designated as Series A Preferred Stock is 3,500,000,000 (which shall not be subject to increase without the written consent of all of the holders of the Series A Preferred Stock).

Stated Value: The initial Stated Value of each share of Series A Preferred Stock is \$2.00 (as adjusted pursuant to the Certificate of Designation).

Conversion: The Series A Preferred Stock shall be convertible at the option of the holder, into common stock on a one-for-one basis, subject to adjustments for stock dividends, splits, combinations and similar events as described in the form of Certificate of Designations. In addition, the Company has the right to require the holders to convert to common stock under certain enumerated circumstances.

Redemption: At any time after the 48 month anniversary of the date of issuance of the Series A Preferred Stock, each share of Series A Preferred Stock shall be redeemable at the option of the holder thereof, for an amount equal to the Stated Value (the "Redemption Amount"). The Company shall pay the Redemption Amount as follows: (i) one third of such amount not later than five business days following the applicable Redemption Date (as defined in the Certificate of Designations); (ii) one third of such amount one year following the applicable Redemption Date; and (iii) one third of such amount two years following the applicable Redemption Date; provided, however, that if the applicable Redemption Date is a date following the eighty fourth (84th) anniversary of the issuance of the Series A Preferred Stock, the entire redemption amount shall be payable in one single payment.

Dividends: Dividends shall accrue on each share of Series A Preferred Stock at the rate of 6% of the stated value per year, compounded annually, whether or not declared. The holders of the Series A Preferred Stock, following notice, have the right to be paid an amount equal to one third of all accrued and unpaid dividends on the following dates: (i) the 48th month following the issuance of the Series A Preferred Stock; (ii) the 60th month following the issuance of the Series A Preferred Stock and (iii) the 72nd month following the issuance of the Series A Preferred Stock.

Voting Rights: Except as described in the Certificate of Designations, holders of the Series A Preferred Stock will vote together with holders of the Company common stock on all matters, on an as-converted to common stock basis, and not as a separate class or series (subject to limited exceptions).

Liquidation Preferences. In the event of any liquidation or winding up of the Company prior to and in preference to any Junior Securities (including common stock), the holders of the Series A Preferred Stock will be entitled to receive in preference to the holders of the Company common stock a per share amount equal to the Stated Value (as adjusted pursuant to the Certificate of Designations).

Transfer Agent and Registrar

The transfer agent and registrar for our common stock is Manhattan Transfer Registrar Co. Its telephone number is 800-786-0362.

Listing

Our common stock trades on the NYSE MKT Market under the symbol "BVX."

Delaware General Corporation Law Section 203

As a corporation organized under the laws of the State of Delaware, we are subject to Section 203 of the Delaware General Corporation Law (the "DGCL") which restricts certain business combinations between us and an "interested stockholder" (in general, a stockholder owning 15% or more of our outstanding voting stock) or its affiliates or associates for a period of three years following the date on which the stockholder becomes an "interested stockholder." The restrictions do not apply if (i) prior to an interested stockholder becoming such, the board of directors approves either the business combination or the transaction in which the stockholder becomes an interested stockholder, (ii) upon consummation of the transaction in which any person becomes an interested stockholder, such interested stockholder owns at least 85% of our voting stock outstanding at the time the transaction commences (excluding shares owned by certain employee stock ownership plans and persons who are both directors and officers of us) or (iii) on or subsequent to the date an interested stockholder becomes such, the business combination is both approved by the board of directors and authorized at an annual or special meeting of our stockholders, not by written consent, by the affirmative vote of at least 66-2/3% of the outstanding voting stock not owned by the interested stockholder.

Limitations of Liability and Disclosure of Commission Position On Indemnification for Securities Act Liabilities

As permitted under Delaware law, we have adopted provisions in our certificate of incorporation that limit or eliminate the personal liability of our directors for a breach of their fiduciary duty of care as a director. The duty of care generally requires that, when acting on behalf of the corporation, directors exercise an informed business judgment based on all material information reasonably available to them. Consequently, a director will not be personally liable to us or our stockholders for monetary damages or breach of fiduciary duty as a director, except for liability for:

- · Any breach of the director's duty of loyalty to us or our stockholders;
- · Any act or omission not in good faith or that involves intentional misconduct or a knowing violation of law;
- Any act related to unlawful stock repurchases, redemptions or other distributions or payment of dividends under DGCL Section 174; or
- · Any transaction from which the director derived an improper personal benefit.

These limitations of liability do not affect the availability of equitable remedies such as injunctive relief or rescission. Our certificate of incorporation also authorizes us to indemnify our officers, directors and other agents to the fullest extent permitted under Delaware law.

Insofar as indemnification for liabilities arising under the Securities Act of 1933 may be permitted to directors, officers and controlling persons of the company pursuant to the foregoing provisions, or otherwise, we have been informed that in the opinion of the SEC such indemnification is against public policy as expressed in the Securities Act of 1933 and is, therefore, unenforceable.

DESCRIPTION OF DEBT SECURITIES

We may issue debt securities, secured or unsecured, in one or more series, as either senior or subordinated debt or as senior or subordinated convertible debt. While the terms we have summarized below will apply generally to any debt securities that we may offer under this prospectus, we will describe the particular terms of any debt securities that we may offer in more detail in the applicable prospectus supplement. The terms of any debt securities offered under a prospectus supplement may differ from the terms described below. As you read this section, please remember that the specific terms of a debt security as described in the applicable prospectus supplement will supplement and may modify or replace the general terms described in this section. If there are any differences between the applicable prospectus supplement and this prospectus, the applicable prospectus supplement will control. Unless the context requires otherwise, whenever we refer to the indentures, we also are referring to any supplemental indentures that specify the terms of a particular series of debt securities.

We may issue the debt securities under an indenture that we would enter into with a trustee to be named in the indenture. If we enter into an indenture, the indenture would be qualified under the Trust Indenture Act of 1939, as in

effect on the date of the indenture. We use the term "trustee" to refer to the trustee under the indenture.

General

If we issue debt securities, we will describe in the applicable prospectus supplement the terms of the series of debt securities being offered, including:

- the title or designation of the debt securities;
- whether the debt securities will be secured or unsecured, and the terms of any secured debt;
- the terms of the subordination of any series of subordinated debt securities;
- any limit upon the aggregate principal amount of the debt securities;
- the date or dates on which the debt securities may be issued and on which we will pay the principal on the debt securities:
- the interest rate, which may be fixed or variable, or the method for determining the rate and the date interest will begin to accrue, the date or dates interest will be payable and the record dates for interest payment dates or the method for determining such dates;
- the manner in which the amounts of payment of principal of, premium or interest on the debt securities will be determined, if these amounts may be determined by reference to an index based on a currency or currencies other than that in which the debt securities are denominated or designated to be payable or by reference to a commodity, commodity index, stock exchange index or financial index;
- the currency of denomination of the debt securities;
- if payments of principal of, premium or interest on the debt securities will be made in one or more currencies or currency units other than that or those in which the debt securities are denominated, the manner in which the exchange rate with respect to these payments will be determined;
- the place or places where the principal of, premium, and interest on the debt securities will be payable, where debt securities of any series may be presented for registration of transfer, exchange or conversion, and where notices and demands to or upon us in respect of the debt securities may be made;
- the form of consideration in which principal of, premium or interest on the debt securities will be paid;
- the terms and conditions upon which we may redeem the debt securities;
- any obligation we have to redeem or purchase the debt securities pursuant to any sinking fund, amortization or analogous provisions or at the option of a holder of debt securities;
- the dates on which and the price or prices at which we will repurchase the debt securities at the option of the holders of debt securities and other detailed terms and provisions of these repurchase obligations;

- the denominations in which the debt securities will be issued, if other than denominations of \$1,000 and any integral multiple thereof;
- the portion of principal amount of the debt securities payable upon declaration of acceleration of the maturity date, if other than the principal amount;
- whether the debt securities are to be issued at any original issuance discount and the amount of discount with which such debt securities may be issued;
- whether the debt securities will be issued in the form of certificated debt securities or global debt securities and, in such case, the depositary for such global security or securities and the terms and conditions, if any, upon which interests in such global security or securities may be exchanged in whole or in part for the individual securities represented thereby;
- provisions, if any, for the defeasance of the debt securities of a series in whole or in part and any addition or change in the provisions related to satisfaction and discharge;
- the form of the debt securities:
- the terms and conditions upon which the debt securities will be so convertible or exchangeable into securities
 or property of another person, if at all, and any additions or changes, if any, to permit or facilitate such
 conversion or exchange;
- whether the debt securities will be subject to subordination and the terms of such subordination;
- provisions, if any, granting special rights to holders of the debt securities upon the occurrence of specified events;
- any restriction or condition on the transferability of the debt securities;
- any addition or change in the provisions related to compensation and reimbursement of the trustee which applies to securities of such series;
- any addition to or change in the events of default described in this prospectus or in the indenture with respect to
 the debt securities and any change in the acceleration provisions described in this prospectus or in the indenture
 with respect to the debt securities;
- any addition to or change in the covenants described in this prospectus or in the indenture with respect to the debt securities; and
- any other terms of the debt securities, which may modify or delete any provision of the indenture.

Conversion or Exchange Rights

If we issue debt securities, we will set forth in the prospectus supplement the terms, if any, on which a series of debt securities may be convertible into or exchangeable for our common stock or our other securities. We will include provisions as to whether conversion or exchange is mandatory, at the option of the holder or at our option. We may include provisions pursuant to which the number of shares of our common stock or our other securities that the holders of the series of debt securities receive would be subject to adjustment.

Consolidation, Merger or Sale

Unless we provide otherwise in the prospectus supplement applicable to a particular series of debt securities, the indentures will not contain any covenant that restricts our ability to merge or consolidate, or sell, convey, transfer or otherwise dispose of all or substantially all of our assets. However, any successor to or acquirer of such assets must assume all of our obligations under the indentures or the debt securities, as appropriate.

Unless we state otherwise in the applicable prospectus supplement, the debt securities will not contain any provisions that may afford holders of the debt securities additional protection in the event we have a change of control or in the event of a highly leveraged transaction (whether or not such transaction results in a change of control), which could adversely affect holders of debt securities.

Events of Default Under the Indenture

Unless we provide otherwise in the prospectus supplement applicable to a particular series of debt securities, the following are events of default under the indenture with respect to any series of debt securities that we may issue:

- if we fail to pay interest when due and payable and our failure continues for more than 30 days and the time for payment has not been extended or deferred;
- if we fail to pay the principal, premium, or sinking fund payment, if any, when due and payable and our failure continues for more than 30 days and the time for payment has not been extended or delayed;
- if we fail to observe or perform any other covenant relating to such series contained in the debt securities of such series or the indenture, other than a covenant specifically relating to and for the benefit of holders of another series of debt securities, and our failure continues for 60 days after we receive written notice from the trustee or holders of not less than a majority in aggregate principal amount of the outstanding debt securities of the applicable series;
- if specified events of bankruptcy, insolvency or reorganization occur as to us; and
- any other event of default provided in or pursuant to the applicable agreement or indenture, if any, or prospectus supplement with respect to the debt securities of that series.

Unless we provide otherwise in the prospectus supplement applicable to a particular series of debt securities, no event of default with respect to a particular series of debt securities (except as to certain events of bankruptcy, insolvency or reorganization) necessarily constitutes an event of default with respect to any other series of debt securities. The occurrence of an event of default may constitute an event of default under any bank credit agreements we may have in

existence from time to time. In addition, the occurrence of certain events of default or an acceleration under the indenture may constitute an event of default under certain of our other indebtedness outstanding from time to time.

If an event of default with respect to debt securities of any series at the time outstanding occurs and is continuing, then the trustee or the holders of not less than a majority in principal amount of the outstanding debt securities of that series may, by a notice in writing to us (and to the trustee if given by the holders), declare to be due and payable immediately the principal (or, if the debt securities of that series are discount securities, that portion of the principal amount as may be specified in the terms of that series) of and premium and accrued and unpaid interest, if any, on all debt securities of that series. The holders of a majority in principal amount of the outstanding debt securities of an affected series may waive any default or event of default with respect to the series and its consequences, except defaults or events of default regarding payment of principal, premium, if any, or interest, unless we have cured the default or event of default in accordance with the indenture. Any waiver shall cure the default or event of default.

We refer you to the prospectus supplement relating to any series of debt securities that are discount securities for the particular provisions relating to acceleration of a portion of the principal amount of such discount securities upon the occurrence of an event of default.

Subject to the terms of the indenture, if an event of default under the indenture shall occur and be continuing, the trustee will be under no obligation to exercise any of its rights or powers under such indenture at the request or direction of any of the holders of the applicable series of debt securities, unless such holders have offered the trustee reasonable indemnity. The holders of a majority in principal amount of the outstanding debt securities of any series will have the right to direct the time, method and place of conducting any proceeding for any remedy available to the trustee, or exercising any trust or power conferred on the trustee, with respect to the debt securities of that series, provided that, subject to the terms of the indenture, the trustee need not take any action that it believes, upon the advice of counsel, might involve it in personal liability or might be unduly prejudicial to the holders not involved in the proceeding.

A holder of the debt securities of any series will only have the right to institute a proceeding under the indenture or to appoint a receiver or trustee, or to seek other remedies if:

- the holder previously has given written notice to the trustee of a continuing event of default with respect to that series;
- the holders of at least a majority in aggregate principal amount of the outstanding debt securities of that series have made written request, and such holders have offered reasonable indemnity to the trustee to institute the proceeding as trustee; and
- the trustee does not institute the proceeding, and does not receive from the holders of a majority in aggregate principal amount of the outstanding debt securities of that series (or at a meeting of holders of such series at which a quorum is present, the holders of a majority in principal amount of the debt securities of such series represented at such meeting) other conflicting directions within 60 days after the notice, request and offer.

These limitations do not apply to a suit instituted by a holder of debt securities if we default in the payment of the principal, premium, if any, or interest on, the debt securities.

We will periodically file statements with the applicable trustee regarding our compliance with specified covenants in the applicable indenture.

Modification of Indenture; Waiver

The trustee and we may, without the consent of any holders, execute a supplemental indenture to change the applicable indenture with respect to specific matters, including, among other things:

- to surrender any right or power conferred upon us;
- to provide, change or eliminate any restrictions on the payment of principal of or premium, if any, on the debt securities; provided that any such action shall not adversely affect the interests of the holders of debt securities of any series in any material respect;
- to change or eliminate any of the provisions of the indenture; provided that any such change or elimination shall become effective only when there is no outstanding debt security of any series created prior to the execution of such supplemental indenture that is entitled to the benefit of such provision and as to which such supplemental indenture would apply;
- to evidence the succession of another corporation to us;
- to evidence and provide for the acceptance of appointment by a successor trustee with respect to one or more series of debt securities and to add or change provisions of the indenture to facilitate the administration of the trusts thereunder by more than one trustee;
- to cure any ambiguity, mistake, manifest error, omission, defect or inconsistency in the indenture or to conform the text of any provision in the indenture or in any supplemental indenture to any description thereof in the applicable section of a prospectus, prospectus supplement or other offering document that was intended to be a verbatim recitation of a provision of the indenture or of any supplemental indenture;
- to add to or change or eliminate any provision of the indenture as shall be necessary or desirable in accordance with any amendments to the Trust Indenture Act of 1939;
- to make any change in any series of debt securities that does not adversely affect in any material respect the interests of the holders of such debt securities; and
- to supplement any of the provisions of the indenture to such extent as shall be necessary to permit or facilitate the defeasance and discharge of any series of debt securities; provided that any such action shall not adversely affect the interests of the holders of debt securities of such series or any other series of debt securities.

In addition, under the indenture, the rights of holders of a series of debt securities may be changed by us and the trustee with the written consent of the holders of at least a majority in aggregate principal amount of the outstanding debt securities of each series that is affected. However, unless we provide otherwise in the prospectus supplement applicable to a particular series of debt securities, we and the trustee may make the following changes only with the consent of each holder of any outstanding debt securities affected:

- extending the fixed maturity of the series of debt securities;
- reducing the principal amount, reducing the rate of or extending the time of payment of interest, or reducing any premium payable upon the redemption of any debt securities;
- reducing the principal amount of discount securities payable upon acceleration of maturity;
- making the principal of or premium or interest on any debt security payable in currency other than that stated in the debt security;
- impairing the right to institute suit for the enforcement of any payment on or after the fixed maturity date of any series of debt securities;
- materially adversely affecting the economic terms of any right to convert or exchange any debt securities; and
- reducing the percentage of debt securities, the holders of which are required to consent to any amendment, supplement, modification or waiver.

Except for certain specified provisions, the holders of at least a majority in principal amount of the outstanding debt securities of any series (or, at a meeting of holders of such series at which a quorum is present, the holders of a majority in principal amount of the debt securities of such series represented at such meeting) may, on behalf of the holders of all debt securities of that series, waive our compliance with provisions of the indenture. The holders of a majority in principal amount of the outstanding debt securities of any series may, on behalf of the holders of all the debt securities of such series, waive any past default under the indenture with respect to that series and its consequences, other than a default in the payment of the principal of, premium or any interest on any debt security of that series; provided, however, that the holders of a majority in principal amount of the outstanding debt securities of any series may rescind an acceleration and its consequences, including any related payment default that resulted from the acceleration.

Discharge

The indenture provides that we can elect to be discharged from our obligations with respect to one or more series of debt securities. In order to exercise our rights to be discharged with respect to a series, we must deposit with the trustee money or government obligations sufficient to pay all the principal of, the premium, if any, and interest on, the debt securities of the series on the dates payments are due.

Form, Exchange and Transfer

We will issue the debt securities of each series only in fully registered form without coupons and, unless we otherwise specify in the applicable prospectus supplement, in denominations of \$1,000 and any integral multiple thereof. We may issue debt securities of a series in temporary or permanent global form and as book-entry securities that will be deposited with a depositary named by us and identified in a prospectus supplement with respect to that series.

At the option of the holder, subject to the terms of the indenture and the limitations applicable to global securities described in the applicable prospectus supplement, the holder of the debt securities of any series can exchange the debt securities for other debt securities of the same series, in any authorized denomination and of like tenor and aggregate principal amount.

Subject to the terms of the indenture and the limitations applicable to global securities set forth in the applicable prospectus supplement, holders of the debt securities may present the debt securities for exchange or for registration of transfer, duly endorsed or with the form of transfer endorsed thereon duly executed if so required by us or the security registrar, at the office of the security registrar or at the office of any transfer agent designated by us for this purpose. Unless otherwise provided in the debt securities that the holder presents for transfer or exchange or in the indenture, we will make no service charge for any registration of transfer or exchange, but we may require payment of any taxes or other governmental charges.

We will name in the applicable prospectus supplement the security registrar, and any transfer agent in addition to the security registrar, that we initially designate for any debt securities. We may at any time designate additional transfer agents or rescind the designation of any transfer agent or approve a change in the office through which any transfer agent acts, except that we will be required to maintain a transfer agent in each place of payment for the debt securities of each series.

If we elect to redeem the debt securities of any series, we will not be required to:

- issue, register the transfer of, or exchange any debt securities of that series during a period beginning at the opening of business 15 days before the day of mailing of a notice of redemption of any debt securities that may be selected for redemption and ending at the close of business on the day of the mailing; or
- register the transfer of or exchange any debt securities so selected for redemption, in whole or in part, except the unredeemed portion of any debt securities we are redeeming in part.

Information Concerning the Trustee

The trustee, other than during the occurrence and continuance of an event of default under the indenture, undertakes to perform only those duties as are specifically set forth in the indenture. Upon an event of default under the indenture, the trustee must use the same degree of care as a prudent person would exercise or use in the conduct of his or her own affairs. Subject to this provision, the trustee is under no obligation to exercise any of the powers given it by the indenture at the request of any holder of debt securities unless it is offered reasonable security and indemnity against the costs, expenses and liabilities that it might incur.

Payment and Paying Agents

Unless we otherwise indicate in the applicable prospectus supplement, we will make payment of the interest on any debt securities on any interest payment date to the person in whose name the debt securities, or one or more predecessor securities, are registered at the close of business on the regular record date for the interest.

Unless we otherwise indicate in the applicable prospectus supplement, we will pay principal of and any premium and interest on the debt securities of a particular series at the office of the indenture trustee or, at our option, by wire or check payable to the holder. Unless we otherwise indicate in a prospectus supplement, we will designate the corporate trust office of the trustee our sole paying agent for payments with respect to debt securities of a particular series. We will name in the applicable prospectus supplement any other paying agents that we initially designate for the debt securities of a particular series. We will maintain a paying agent in each place of payment for the debt securities of a particular series. All money we pay to a paying agent or the trustee for the payment of the principal of or any premium or interest on any debt securities which remains unclaimed at the end of two years after such principal, premium or interest has become due and payable will be repaid to us, and the holder of the security thereafter may look only to us for payment thereof.

Governing Law

Unless we otherwise indicate in the applicable prospectus supplement, each indenture and the debt securities will be governed and construed in accordance with the laws of the State of Delaware.

DESCRIPTION OF WARRANTS

We may issue warrants to purchase debt securities, preferred stock or common stock. We may issue warrants independently or together with any other securities we offer under a prospectus supplement. The warrants may be attached to or separate from the securities. We may issue each series of warrants under a separate warrant agreement that we will enter into with a bank or trust company, as warrant agent. The statements made in this section relating to the warrant agreement are summaries only. These summaries are not complete. When we issue warrants, we will provide the specific terms of the warrants and the applicable warrant agreement in a prospectus supplement. To the extent the information contained in the prospectus supplement differs from this summary description, you should rely on the information in the prospectus supplement. For more detail, we refer you to the applicable warrant agreement itself, which we will file as an exhibit to, or incorporate by reference in, the registration statement.

General

We will describe in the applicable prospectus supplement the terms relating to warrants being offered including:

- the offering price and aggregate number of warrants offered;
- · if applicable, the designation and terms of the securities with which the warrants are issued and the number of warrants issued with each such security or each principal amount of such security;
- · if applicable, the date on and after which the warrants and the related securities will be separately transferable;
- · in the case of warrants to purchase common stock or preferred stock, the number of shares of common stock or preferred stock purchasable upon the exercise of one warrant and the price at which these shares may be purchased upon such exercise;
- the terms of any rights to redeem or call the warrants;
- any provisions for changes to or adjustments in the exercise price or number of securities issuable upon exercise of the warrants;
- · the dates on which the right to exercise the warrants will commence and expire;
- the manner in which the warrant agreements and warrants may be modified;
- · federal income tax consequences of holding or exercising the warrants, if material;
- the terms of the securities issuable upon exercise of the warrants; and
- · any other specific terms, preferences, rights or limitations of or restrictions on the warrants.

Before exercising their warrants, holders of warrants will not have any of the rights of holders of the securities purchasable upon such exercise, including, in the case of warrants to purchase common stock, the right to receive dividends, if any, or payments upon our liquidation, dissolution or winding up of our affairs or to exercise voting rights, if any.

Exercise of Warrants

Each warrant will entitle the holder to purchase the securities that we specify in the applicable prospectus supplement at the exercise price that we describe in the applicable prospectus supplement. Unless we otherwise specify in the applicable prospectus supplement, holders of the warrants may exercise the warrants at any time up to the specified time on the expiration date that we set forth in the applicable prospectus supplement. After the close of business on the expiration date, unexercised warrants will become void.

Holders of the warrants may exercise the warrants by delivering the warrant certificate representing the warrants to be exercised together with specified information, and paying the required amount to the warrant agent in immediately available funds, as provided in the applicable prospectus supplement. We intend to set forth in any warrant agreement and in the applicable prospectus supplement the information that the holder of the warrant will be required to deliver to the warrant agent.

Upon receipt of the required payment and any warrant certificate or other form required for exercise properly completed and duly executed at the corporate trust office of the warrant agent or any other office indicated in the applicable prospectus supplement, we will issue and deliver the securities purchasable upon such exercise. If fewer than all of the warrants represented by the warrant or warrant certificate are exercised, then we will issue a new warrant or warrant certificate for the remaining amount of warrants. If we so indicate in the applicable prospectus supplement, holders of the warrants may surrender securities as all or part of the exercise price for warrants.

Governing Law

Unless we provide otherwise in the applicable prospectus supplement, the warrants and warrant agreements will be governed by and construed in accordance with the laws of the State of Delaware.

DESCRIPTION OF UNITS

We may issue units comprised of one or more debt securities, shares of common stock, preferred stock and/or warrants in any combination. Each unit will be issued so that the holder of the unit is also the holder of each security included in the unit. Thus, the holder of a unit will have the rights and obligations of a holder of each included security. The unit agreement under which a unit is issued may provide that the securities included in the unit may not be held or transferred separately, at any time or at any time before a specified date. The statements made in this section relating to the unit agreement are summaries only. These summaries are not complete. When we issue units, we will provide the specific terms of the units and the applicable unit agreement in a prospectus supplement. To the extent the information contained in the prospectus supplement differs from this summary description, you should rely on the information in the prospectus supplement. For more detail, we refer you to the applicable unit agreement itself, which we will file as an exhibit to, or incorporate by reference in, the registration statement.

We will describe in the applicable prospectus supplement the terms of the series of units being offered, including:

- the designation and terms of the units and of the securities comprising the units, including whether and under what circumstances those securities may be held or transferred separately;
- any provisions of the governing unit agreement that differ from those described below;
 and
- any provisions for the issuance, payment, settlement, transfer or exchange of the units or of the securities comprising the units.

The provisions described in this section, as well as those described under "Description of Capital Stock," "Description of Debt Securities" and "Description of Warrants" will apply to each unit and to any common stock, debt security or warrant included in each unit, respectively.

We may issue units in such amounts and in such numerous distinct series as we determine.

PLAN OF DISTRIBUTION

We may sell the securities through underwriters or dealers, through agents, or directly to one or more purchasers. We may sell the securities from time to time in one or more transactions at a fixed price or prices, which may be changed from time to time, at market prices prevailing at the times of sale, at prices related to such prevailing market prices, or at negotiated prices. The accompanying prospectus supplement will describe the terms of the offering of the securities, including:

- · the name or names of any underwriters;
- the purchase price of the securities being offered and the proceeds we will receive from the sale;
- · any over-allotment options pursuant to which underwriters may purchase additional securities from us;
- · any agency fees or underwriting discounts and other items constituting agents' or underwriters' compensation;
- · any public offering price;
- · any discounts or concessions allowed or re-allowed or paid to dealers; and
- any securities exchange or market on which the securities may be listed.

If underwriters are used in the sale, they will acquire the securities for their own account and may resell the securities from time to time in one or more transactions at a fixed public offering price or at varying prices determined at the time of the sale. The obligations of the underwriters to purchase the securities will be subject to the conditions set forth in the applicable underwriting agreement. We may offer the securities to the public through underwriting syndicates represented by managing underwriters or by underwriters without a syndicate. Subject to certain conditions, the underwriters will be obligated to purchase all the securities offered by the prospectus supplement. Any public offering price and any discounts or concessions allowed or re-allowed or paid to dealers may change from time to time. We may use underwriters with whom we have a material relationship. We will describe such relationships in the prospectus supplement naming the underwriter and the nature of any such relationship.

We may engage in "at the market" offerings of our common stock, which are offerings into an existing trading market, at other than a fixed price, on or through the facilities of a national securities exchange or to or through a market maker otherwise than on an exchange.

We may sell securities directly or through agents we designate from time to time. We will name any agent involved in the offering and sale of the securities, and we will describe any commissions we will pay the agent in the prospectus supplement. Unless the prospectus supplement states otherwise, our agent will act on a best efforts basis for the period of its appointment.

We 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 indicates, in connection with those derivatives, the third parties may sell securities covered by this prospectus and the applicable prospectus supplement, including short sale transactions. If so, the third party may use securities pledged by us or borrowed from us or others to settle those sales or to close out any related open borrowings of common shares, and may use securities received from us in settlement of those derivatives to close out any related open borrowings of common shares. The third party in such sale transactions will be an underwriter and, if not identified in this prospectus, will be identified in the applicable prospectus supplement or a post-effective amendment to this registration statement.

Some or all of the securities that we offer through this prospectus, other than common stock, may be new issues of securities with no established trading market. Any underwriters to whom we sell our securities for public offerings and sale may make a market for those securities, but they will not be obligated to do so and they may discontinue any market making at any time without notice. Accordingly, we cannot assure you of the liquidity of, or continued trading markets for, any securities that we offer.

All securities we offer, other than common stock, will be new issues of securities for which there is no established trading market. Any underwriters may make a market in these securities, but will not be obligated to do so and may discontinue any market making activities at any time without notice. We cannot guaranty the liquidity of the trading markets for any securities.

We may provide agents and underwriters with indemnification against civil liabilities related to this offering, including liabilities under the Securities Act, or contribution with respect to payments that the agents or underwriters may make with respect to these liabilities. Agents and underwriters may engage in transactions with, or perform services for, us in the ordinary course of business.

Any underwriter may also engage in stabilizing transactions, syndicate covering transactions and penalty bids in accordance with Rule 104 under the Securities Exchange Act of 1934, as amended. Stabilizing transactions involve bids to purchase the underlying security in the open market for the purpose of pegging, fixing or maintaining the price of the securities. Syndicate covering transactions involve purchases of the securities in the open market after the distribution has been completed in order to cover syndicate short positions.

Penalty bids permit the underwriters to reclaim a selling concession from a syndicate member when the securities originally sold by the syndicate member are purchased in a syndicate covering transaction to cover syndicate short positions. Stabilizing transactions, syndicate covering transactions and penalty bids may cause the price of the securities to be higher than it would be in the absence of the transactions. The underwriters may, if they commence these transactions, discontinue them at any time.

Similar to other purchase transactions, an underwriter's purchases to cover the syndicate short sales or to stabilize the market price of our securities may have the effect of raising or maintaining the market price of our securities or preventing or mitigating a decline in the market price of our securities. As a result, the price of the securities may be higher than the price that might otherwise exist in the open market. The imposition of a penalty bid might also have an effect on the price of shares if it discourages resales of the securities.

Any underwriters who are qualified market makers on the NYSE MKT Market may engage in passive market making transactions in our common stock on the NYSE MKT Market in accordance with Rule 103 of Regulation M, during the business day prior to the pricing of the offering, before the commencement of offers or sales of common stock. Passive market makers must comply with applicable volume and price limitations and must be identified as passive market makers. In general, a passive market maker must display its bid at a price not in excess of the highest independent bid for such security; if all independent bids are lowered below the passive market maker's bid, however, the passive market maker's bid must then be lowered when certain purchase limits are exceeded.

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

LEGAL MATTERS

The validity of the issuance of securities offered hereby will be passed upon for us by Ruskin Moscou Faltischek, P.C., of Uniondale, New York.

EXPERTS

The consolidated financial statements incorporated in this prospectus by reference from Bovie Medical Corporation's Annual Report on Form 10-K/A for the year ended December 31, 2013 have been audited by Kingery & Crouse, P.A., independent registered public auditors, as stated in their report, which is incorporated herein by reference, and have been so incorporated in reliance upon the report of such firm given upon their authority as experts in accounting and auditing.

WHERE YOU CAN FIND ADDITONAL INFORMATION

We file annual, quarterly and current reports, proxy statements and other information with the SEC. Our SEC filings are available to the public over the Internet at the SEC's website at www.sec.gov. You may also read and copy any document we file at the SEC's Public Reference Room at 100 F Street, N.E., Washington, D.C. 205409. Please call the SEC at 1-800-SEC-0330 for further information on the public reference room.

The registration statement and the documents referred to below under "Incorporation of Certain Information by Reference" are also available on our website at http://www.boviemedical.com. We have not incorporated by reference into this prospectus the information on our website, and you should not consider it to be a part of this prospectus.

INCORPORATION OF CERTAIN INFORMATION BY REFERENCE

The SEC allows us to incorporate by reference the information we file with it, which means that we can disclose important information to you by referring you to those documents. The information incorporated by reference is considered to be a part of this prospectus, and information in documents that we file later with the SEC will automatically update and supersede the information in this prospectus. We incorporate by reference into this prospectus the documents listed below and any future filings we make with the SEC under Section 13(a), 13(c) 14 or 15(d) of the Securities Exchange Act of 1934, as amended, until this offering is completed and all securities are sold or until the sale of securities pursuant to this prospectus is terminated by us:

- · Our Annual Report on Form 10-K and Form 10-K/A for the year ended December 31, 2013 filed with the SEC on March 31, 2014 and May 8, 2014, respectively; and
- Our Quarterly Report on Form 10-Q for the quarter ended March 31, 2014, filed with the SEC on May 15, 2014:
- Our Quarterly Report on Form 10-Q for the quarter ended June 30, 2014, filed with the SEC on August 8, 2014;
- Our Quarterly Report on Form 10-Q for the quarter ended September 30, 2014, filed with the SEC on November 10, 2014;
- Our Current Reports on Form 8-K filed with the SEC March 24, 2014, April 2, 2014, May 8, 2014, May 19, 2014, July 2, 2014, July 17, 2014, July 21, 2014, August 7, 2014, October 3, 2014, and November 7, 2014;
- Our Registration Statement on Form S-3 and S-3/A filed with the SEC on January 10, 2014 and January 24, 2014, respectively;
- Our Prospectus filed pursuant to Rule 424(b)(3) filed with the SEC on February 4, 2014;
- Our Registration Statement on Form S-8 filed with the SEC on May 1, 2014;
- · Our definitive proxy statement on Schedule 14A filed with the SEC on June 9, 2014.
- · Our Specialized Disclosure Report on Form SD filed with the SEC on June 2, 2014.

This prospectus is part of a registration statement on Form S-3 we have filed with the SEC. This prospectus does not contain all of the information in the registration statement. We have omitted certain parts of the registration statement as permitted under the rules and regulations of the SEC. You may view and inspect the registration statement and exhibits at the SEC's Public Reference Room at 100 F Street, N.E., Washington, D.C. 205409 by calling 1-800-SEC-0330 or on the SEC's website (see above "Where You Can Find Additional Information").

Upon request, we will provide, free of charge, to each person to whom a prospectus is delivered, including a beneficial owner, a copy of any or all information that has been incorporated by reference in the prospectus but not delivered with the prospectus. Any such request may be made orally or in writing to Bovie Medical Corporation, 4 Manhattanville Road, Purchase, New York 10577, Attention: Peter L. Donato, Chief Financial Officer and Secretary.

\$25,000,000

Common Stock

Preferred Stock

Debt Securities

Warrants

Units

BOVIE MEDICAL CORPORATION

PROSPECTUS

December 16, 2014

PART II

INFORMATION NOT REQUIRED IN PROSPECTUS

ITEM 14. OTHER EXPENSES OF ISSUANCE AND DISTRIBUTION

The following table sets forth the estimated costs and expenses, other than the underwriting discounts and commissions, payable by the Registrant in connection with the offering of the securities being registered.

SEC registration fee	\$ 2,905
Listing fee	*
Accounting fees and expenses	*
Legal fees and expenses	*
Transfer Agent fees and	
expenses	*
Trustee fees and expenses	*
Printing and miscellaneous	
expenses	*
Total	*

^{*} The amount of securities and number of offerings are indeterminable and the expenses cannot be estimated at this time.

ITEM 15. INDEMNIFICATION OF DIRECTORS AND OFFICERS

Section 145 of the Delaware General Corporation Law ("DGCL") states:

(a) A corporation shall have the power to indemnify any person who was or is a party or is threatened to be made a party to any threatened, pending or completed action, suit or proceeding, whether civil, criminal, administrative or investigative (other than an action arising by or in the right of the corporation) by reason of the fact that the person is or was a director, officer, employee or agent of the corporation, or is or was serving at the request of the corporation as a director, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise, against expenses (including attorneys' fees), judgments, fines and amounts paid in settlement actually and reasonably

incurred by the person in connection with such action, suit or proceeding if the person acted in good faith and in a manner the person reasonably believed to be in or not opposed to the best interests of the corporation, and, with respect to any criminal action or proceeding, had no reasonable cause to believe the person's conduct was unlawful. The termination of any action, suit or proceeding by judgment, order, settlement, conviction, or upon a plea of nolo contendere or its equivalent, shall not, of itself, create a presumption that the person did not act in good faith and in a manner which the person reasonably believed to be in or not opposed to the best interests of the corporation, and, with respect to any criminal action or proceeding, had reasonable cause to believe that the person's conduct was unlawful.

(b) A corporation shall have power to indemnify any person who was or is a party or is threatened to be made a party to any threatened, pending or completed action or suit by or in the right of the corporation to procure a judgment in its favor by reason of the fact that the person is or was a director, officer, employee or agent of the corporation, or is or was serving at the request of the corporation as a director, officer, employee or agent of another corporation, partnership, joint venture, trust, or other enterprise against expenses (including attorneys' fees) actually and reasonably incurred by the person in connection with the defense or settlement of such action or suit if the person acted in good faith and in a manner the person reasonably believed to be in or not opposed to the best interests of the corporation and except that no indemnification shall be made in respect of any claim, issue or matter as to which such person shall have been adjudged to be liable to the corporation unless and only to the extent that the Court of Chancery or the court in which such action or suit was brought shall determine upon application that, despite the adjudication of liability but in view of all the circumstances of the case, such person is fairly and reasonably entitled to indemnity for such expense which the Court of Chancery or such other court shall deem proper.

Our Certificate of Incorporation and Bylaws provide that we shall indemnify our directors, officers, employees and agents to the full extent permitted by the DGCL, including in circumstances in which indemnification is otherwise discretionary under such law. In addition, the employment agreements which we have with certain of our executive officers contain indemnification agreements which require us, among other things, to indemnify them against certain liabilities which may arise by reason of their status or service (other than liabilities arising from willful misconduct of a culpable nature).

These indemnification provisions may be sufficiently broad to permit indemnification of our officers, directors and other corporate agents for liabilities (including reimbursement of expenses incurred) arising under the Securities Act of 1933.

Insofar as indemnification for liabilities arising under the Securities Act of 1933 may be permitted to directors, officers and controlling persons of the company pursuant to the foregoing provisions, or otherwise, we have been informed that in the opinion of the SEC such indemnification is against public policy as expressed in the Securities Act of 1933 and is, therefore, unenforceable.

We have the power to purchase and maintain insurance on behalf of any person who is or was one of our directors or officers, or is or was serving at our request as a director, officer, employee or agent of another corporation, partnership, joint venture, trust or other business against any liability asserted against the person or incurred by the person in any of these capacities, or arising out of the person's fulfilling one of these capacities, and related expenses, whether or not we would have the power to indemnify the person against the claim under the provisions of the DGCL. We currently maintain and intend to maintain for the foreseeable future director and officer liability insurance on behalf of our directors and officers.

ITEM 16. EXHIBITS

The following exhibits are included herein or incorporated herein by reference:

Exhibit

Number	Exhibit
1.1	Form of Underwriting Agreement.*
3.1	Certificate of Incorporation, as amended (incorporated herein by reference to our Report on form 10-K/A filed on March 31, 2011).
3.2	Bylaws of Bovie Medical Corporation, as amended (incorporated herein by reference to our Report on Form 10-K/A filed on March 31, 2011).
4.1	Form of Indenture.
4.2	Form of Common Stock Warrant Agreement and Warrant Certificate.*
4.3	Form of Preferred Stock Warrant Agreement and Warrant Certificate.*
4.4	Form of Unit Agreement.*
5.1	Opinion of Ruskin Moscou Faltischek, P.C.
23.1	Consent of Ruskin Moscou Faltischek, P.C. (contained in Exhibit 5.1)
23.2	Consent of Kingery & Crouse, P.A.

^{*} To be filed by amendment or by a report filed under the Securities Exchange Act of 1934, as amended, and incorporated herein by reference, if applicable.

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 SEC 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.

(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;

(A) Paragraphs (i), (ii) and (iii) above do not apply if the information required to be included in a post-effective	
amendment by those paragraphs is contained in reports filed with or furnished to the SEC by the registrant pursuant	to
section 13 or section 15(d) of the Securities Exchange Act of 1934 that are incorporated by reference in the	
registration statement, or is contained in a form of prospectus filed pursuant to Rule 424(b) that is part of the	

- (2) 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) For the purpose of determining liability under the Securities Act of 1933 to any purchaser:

Provided, however, that:

registration statement.

- (i) Each prospectus filed by the registrant pursuant to Rule 424(b)(3) shall be deemed to be part of the registration statement as of the date the filed prospectus was deemed part of and included in the registration statement; and
- (ii) Each prospectus required to be filed pursuant to Rule 424(b)(2), (b)(5), or (b)(7) as part of a registration statement in reliance on Rule 430B relating to an offering made pursuant to Rule 415(a)(1)(i), (vii), or (x) for the purpose of providing the information required by section 10(a) of the Securities Act of 1933 shall be deemed to be part of and included in the registration statement as of the earlier of the date such form of prospectus is first used after effectiveness or the date of the first contract of sale of securities in the offering described in the prospectus. As provided in Rule 430B, for liability purposes of the issuer and any person that is at that date an underwriter, such date shall be deemed to be a new effective date of the registration statement relating to the securities in the registration statement to which that prospectus relates, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof. Provided, however, that no statement made in a registration statement or prospectus that is part 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 effective date, 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 effective date.

(5) For the purpose of determining liability of the registrant under the Securities Act of 1933 to any purchaser in the initial distribution of the securities: The undersigned registrant undertakes that in a primary offering of securities of the undersigned registrant pursuant to this registration statement, regardless of the underwriting method used to sell the securities to the purchaser, if the securities are offered or sold to such purchaser by means of any of the following communications, the undersigned registrant will be a seller to the purchaser and will be considered to offer or sell such securities to such purchaser:
(i) Any preliminary prospectus or prospectus of the undersigned registrant relating to the offering required to be filed pursuant to Rule 424;
(ii) Any free writing prospectus relating to the offering prepared by or on behalf of the undersigned registrant or used or referred to by the undersigned registrant;
(iii) The portion of any other free writing prospectus relating to the offering containing material information about the undersigned registrant or its securities provided by or on behalf of the undersigned registrant; and

- (iv) Any other communication that is an offer in the offering made by the undersigned registrant to the purchaser.
- (6) For purposes of determining any liability under the Securities Act of 1933, each filing of the registrant's annual report pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934 (and, where applicable, each filing of an employee benefit plan's annual report pursuant to Section 15(d) of the Securities Exchange Act of 1934) that is incorporated by reference in the registration statement 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.
- (7) 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.

- (8) That, for purposes of determining any liability under the Securities Act of 1933:
- (i) The information omitted from the form of prospectus filed as part of this registration statement in reliance upon Rule 430A and contained in a form of prospectus filed by the registrant pursuant to Rule 424(b)(1) or (4) or 497(h) under the Securities Act shall be deemed to be part of this registration statement as of the time it was declared effective; and
- (ii) Each post-effective amendment that contains a form of prospectus 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.
- (9) To file an application for the purpose of determining the eligibility of the trustee to act under subsection (a) of Section 310 of the Trust Indenture Act in accordance with the rules and regulations prescribed by the SEC under Section 305(b)(2) of the Act.

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, the Registrant certifies that it has reasonable grounds to believe that it meets all of the requirements for filing on Form S-3 and has duly caused this Registration Statement to be signed on its behalf by the undersigned, thereunto duly authorized in Purchase, NY on December 16, 2014.

BOVIE MEDICAL CORPORATION

By:/s/ Robert L. Gershon Robert L. Gershon Chief Executive Officer

POWER OF ATTORNEY

Each person whose signature appears below hereby constitutes and appoints Robert L. Gershon and Peter L. Donato, and each of them individually, as his true and lawful attorneys-in-fact and agents, with full power of substitution and resubstitution, for him and in his name, place and stead, in any and all capacities, to sign any and all amendments (including post-effective amendments) to this registration statement, and to file the same, with all exhibits thereto, and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorneys-in-fact and agents, full power and authority to do and perform each and every act and thing requisite and necessary to be done in connection therewith, as fully to all intents and purposes as he might or could do in person, hereby ratifying and confirming all that said attorney-in-fact and agent or his substitutes or substitute, may lawfully 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/ Robert L. Gershon Robert L. Gershon	Chief Executive Officer (Principal Executive Officer)	December 16, 2014
/s/ Peter L. Donato Peter L. Donato	Chief Financial Officer and Secretary (Principal Financial and Accounting Officer)	December 16, 2014

/s/ Andrew Makrides Andrew Makrides	Director	December 16, 2014
/s/ J. Robert Saron J. Robert Saron	President, Chief Sales and Marketing Officer and Director	December 16, 2014
/s/ Lawrence J. Waldman Lawrence J. Waldman	Director	December 16, 2014
/s/ Ian Sheffield Ian Sheffield	Director	December 16, 2014
/s/ Michael Geraghty Michael Geraghty	Director	December 16, 2014
/s/ John C. Andres John C. Andres	Director	December 16, 2014