LUNA INNOVATIONS INC
Form S-3
October 18, 2013
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As filed with the Securities and Exchange Commission on October 18, 2013

Registration No. 333-

**UNITED STATES**

**SECURITIES AND EXCHANGE COMMISSION**

**WASHINGTON, DC 20549**

# FORM S-3

**REGISTRATION STATEMENT UNDER**

**THE SECURITIES ACT OF 1933**

## LUNA INNOVATIONS INCORPORATED

(Exact name of registrant as specified in its charter)

| **Delaware** | **54-1560050** |
|---|---|
| (State or Other Jurisdiction of Incorporation or Organization) | (I.R.S. Employer Identification No.) |

**1 Riverside Circle, Suite 400**

**Roanoke, VA 24016**

**(540) 769-8400**

(Address, including zip code, and telephone number,

including area code, of Registrant s principal executive offices)

**My E. Chung**

**President and Chief Executive Officer**

**Luna Innovations Incorporated**

**1 Riverside Circle, Suite 400**

**Roanoke, VA 24016**

**(540) 769-8400**

(Name, address, including zip code, and telephone number,

including area code, of agent for service)

Copies to:

| | |
|---|---|
| **Talfourd H. Kemper, Jr., Esq.** | **Darren K. DeStefano** |
| **General Counsel** | **Brian F. Leaf** |
| **Luna Innovations Incorporated** | **Cooley LLP** |
| **1 Riverside Circle, Suite 400** | **One Freedom Square** |
| **Roanoke, VA 24016** | **Reston Town Center** |
| **(540) 769-8400** | **11951 Freedom Drive** |

**Reston, VA 20190-5656**

**(703) 456-8000**

**Approximate date of commencement of proposed sale to the public:**

From time to time after the effective date of this registration statement

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 reinvestment 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 statement 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 to 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. ¨

**CALCULATION OF REGISTRATION FEE**

| Title of Each Class of Securities To Be Registered | Amount to be Registered(1) | Proposed Maximum Offering Price Per Share(2) | Proposed Maximum Aggregate Offering Price(2) | Amount of Registration Fee |
|---|---|---|---|---|
| Common Stock, par value $0.001 | 2,637,161 | $1.34 | $3,533,795.74 | $455.15 |

(1) This amount represents shares to be offered by the Selling Stockholder from time to time after the effective date of this Registration Statement at prevailing market prices at time of sale. Pursuant to Rule 416 under the Securities Act, the shares being registered hereunder include such indeterminate number of shares of common stock as may be issuable with respect to the shares being registered hereunder as a result of stock splits, stock dividends or similar transactions.

(2) Estimated solely for the purpose of calculating the registration fee in accordance with Rule 457 under the Securities Act. The price per share and aggregate offering price are based on the average of the high and low sales prices of the registrant s common stock on October 11, 2013, as reported on The NASDAQ Capital Market.

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

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Subject to Completion, Dated October 18, 2013

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

**PROSPECTUS**

**2,637,161 Shares**

**LUNA INNOVATIONS INCORPORATED**

**Common Stock**

This prospectus relates to the resale from time to time of up to 2,637,161 shares of our outstanding common stock in the aggregate which were issued to the Selling Stockholder named in this prospectus and which may be held from time to time by such stockholder and his donees, pledgees, transferees or successors in interest. These shares were issued in connection with a private placement of our shares to an accredited investor. We are not selling any securities under this prospectus and will not receive any of the proceeds from the sale of shares by the Selling Stockholder.

The Selling Stockholder may sell the shares of common stock described in this prospectus from time to time in a number of different ways. These sales may be at negotiated prices, which may be at fixed prices, at prevailing market prices at the time of sale or at prices related to the prevailing market price, varying prices determined at the time of sale, or at negotiated prices. We provide more information about how the Selling Stockholder may sell his shares of common stock in the section entitled Plan of Distribution on page 24. We will not be paying any underwriting discounts or commissions in this offering.

The common stock is traded on The NASDAQ Capital Market under the symbol LUNA. On October 17, 2013, the reported closing price of the common stock was $1.35 per share.

**An investment in the shares offered hereby involves a high degree of risk. Before investing in our common stock, we recommend that you carefully read this entire prospectus, including the Risk Factors section beginning on page 7, our annual report on Form 10-K for the year ended December 31, 2012 and the other documents we file with the Securities and Exchange Commission from time to time.**

**Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or passed upon the adequacy or accuracy of this prospectus. Any representation to the contrary is a criminal offense.**

**The date of this prospectus is , 2013.**

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## ABOUT THIS PROSPECTUS

This prospectus is part of a registration statement that we filed with the Securities and Exchange Commission, or the SEC. The prospectus relates to 2,637,161 shares of our common stock which the Selling Stockholder named in this prospectus may sell from time to time. We will not receive any of the proceeds from these sales. We have agreed to pay the expenses incurred in registering these shares, including legal and accounting fees.

You should rely only on the information contained or incorporated by reference in this prospectus. We have not, and the Selling Stockholder has not, authorized anyone to provide you with information different from that contained in this prospectus. The Selling Stockholder is offering to sell, and seeking offers to buy, shares of our common stock only in jurisdictions where it is lawful to do so. The Selling Stockholder should not make an offer of these shares in any state where the offer is not permitted. Brokers or dealers should confirm the existence of an exemption from registration or effect a registration in connection with any offer and sale of these shares.

The information in this prospectus is accurate only as of the date of this prospectus, regardless of the time of delivery of this prospectus or any sale of our common stock.

You should read this prospectus together with the additional information described under the heading Where You Can Find More Information.

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## PROSPECTUS SUMMARY

*This summary highlights information contained elsewhere or incorporated by reference into this prospectus. Because it is a summary, it does not contain all of the information that you should consider before investing in our securities. You should read this entire prospectus carefully, including the section entitled Risk Factors and the documents that we incorporate by reference into this prospectus, before making an investment decision.*

## LUNA INNOVATIONS INCORPORATED

### COMPANY OVERVIEW AND BUSINESS MODEL

We develop, manufacture and market fiber optic test & measurement, sensing, and instrumentation products and are focused on bringing new and innovative technology solutions to measure, monitor, protect and improve critical processes in the telecommunications, medical, composite and defense industries. Our business model is designed to accelerate the process of bringing new and innovative products to market. We use our in-house technical expertise across a range of technologies to perform applied research services for companies and government-funded projects. We continue to invest in product development and commercialization, which we anticipate will lead to increased product sales growth.

Our corporate strategy focuses on two key objectives for growth as we seek to commercialize our technologies:

- Develop and become the leading supplier of fiber optic shape sensing technology for robotic and minimally invasive surgical systems.

- Become the leading provider of fiber optic sensing systems and standard test methods for composite materials.

We are organized into two main business segments, our Products and Licensing segment and our Technology Development segment. Our Products and Licensing segment develops, manufactures and markets our fiber optic test and measurement, sensing, and instrumentation products. Revenues in this segment are currently largely derived from sales of test and measurement equipment for optical components and networks. Our Products and Licensing segment is also focused on our key strategic objectives. We are working to develop and commercialize our fiber optic shape sensing technology in the medical industry with the goal of supplying fiber optic shape sensing components for use in robotic and minimally invasive surgical systems. We are also working to develop and commercialize our fiber optic technology for strain and temperature sensing applications for the composite materials industry.

Our Technology Development segment performs applied research principally in the areas of sensing and materials. Historically, this segment also included our secure computing and communications group, or SCC, which focused on technologies for ensuring the integrity of integrated circuits used in defense systems. On March 1, 2013, we sold the assets associated with SCC to MacAulay-Brown, Inc., or Mac-B, another defense contractor. Most of the government funding for our Technology Development segment outside of SCC is derived from the Small Business Innovation Research, or SBIR, program coordinated by the U.S. Small Business Administration, or SBA. Our SBIR research is focused on technological areas with commercial potential and we strive to commercialize any resulting scientific advancements.

**Products and Licensing**

In our Products and Licensing segment we have a history of marketing numerous fiber optic test and measurement products with a primary focus on the telecommunications industry. We are also pursuing our strategic goal of becoming a leading provider of fiber optic sensing systems and standard test methods for composite materials through the introduction of our Optical Distributed Sensor Interrogator, or ODiSI, product, which we believe represents a significant improvement over our previous products that serve this market. Our Products and Licensing segment is also performing the customer-driven development work to help accomplish our strategic goal of becoming the leading supplier of fiber optic shape sensing technology for robotic and minimally invasive surgical systems. Our primary product lines and development services in this segment are described in more detail below.

***Test & Measurement, Sensing, and Instrumentation Products***

*Test and Measurement Equipment for Fiber Optic Components and Sub-Assemblies*

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Our product lines in the test and measurement domain include our Optical Vector Analyzer, or OVA, our Optical Backscatter Reflectometer, or OBR, and the Phoenix family of tunable lasers.

Historically, our test and measurement products have primarily served the telecommunications industry, although most of our products have valuable applications in other fields. Our test and measurement products monitor the integrity of fiber optic network components and sub-assemblies. These products are designed for manufacturers and suppliers of optical components and sub-assemblies and allow them to reduce development, test and production costs and improve the quality of their products. Most manufacturers and suppliers of optical components and modules currently use a combination of different types of optical test equipment to identify and measure failures in optical networks, such as bad splices, bends, crimps and other reflective and non-reflective events that can cause defects and negatively impact product performance. Our optical test equipment products replace the need to employ multiple test products by addressing all stages of the end user s product development lifecycle, including design verification, component qualification, assembly process verification and failure analysis. Our OVA platform allows manufacturers and suppliers of optical components and sub-assemblies to reduce development, test and production costs and time-to-market by replacing multiple, time consuming and expensive measurement platforms with a single, integrated and easy-to-use instrument.

Our OBR is a highly sensitive diagnostic device which has application in the telecommunications industry and flexibility to provide measurements in various other applications. Our OBR allows data and telecommunications companies and the service providers who maintain their own fiber optic networks to reduce test time and improve product quality. Our OBR provides the ability to inspect fiber networks with higher resolution and better sensitivity than is possible with other existing test products. Its user-friendly graphical user interface also makes the OBR product suitable for both research and manufacturing applications. The OBR gives end users a very high resolution view that is similar to an X-Ray into the inner workings of a fiber optic network. The OBR also has a feature that allows users to turn standard optical fiber into multiple sensors that could be used in a variety of temperature measurement and monitoring applications including power generation: civil structure monitoring; industrial process control; component-level heating in optical amplifiers; strain and load distribution measurements of aircraft harnesses; and temperature monitoring inside telecommunications cabinets and enclosures.

*ODiSI Sensing Solution; Distributed Sensing Systems*

In 2011, we launched our new sensing platform called ODiSI. It provides fully distributed strain or temperature measurements and delivers an extraordinary amount of data by using an optical fiber as a continuous sensor over up to 50 meters of surface. Compared to traditional sensing methods, such as strain gages, this technology provides greater insight into the performance, tolerances and failure mechanisms of structures and vehicles. We believe the technology can provide exceptional value to the composites manufacturing market, particularly in aerospace and green energy applications.

We have significant expertise in distributed sensing systems, such as ODiSI, which are products composed of multiple sensors whose inputs are integrated through a fiber optic network and software. These products use fiber optic sensing technology with an innovative monitoring system that allows several thousand sensors to be networked along a single optical fiber.

Potential key applications and markets of our fiber optic sensing solutions include the airframe industry, integrated structural monitoring of civil structures and space applications. For example, a major airframe manufacturer has explored the use of our system during fatigue testing to measure strain through a network of sensors distributed throughout an aircraft. Our ODiSI platform also enables the direct monitoring of temperature. Potential markets include industrial process control and electrical system monitoring. For example, our network of distributed

temperature sensors has been tested by a major manufacturer of electrical generators for the purpose of increasing operational efficiency and prolonging generator life.

*Tunable Lasers*

We have acquired the rights to manufacture a line of swept tunable lasers to allow us to compete more effectively in our existing fiber optic test and measurement as well as sensing markets. This laser is in production, and this technology is being integrated into current and new products to help us provide our customers with faster, more flexible and cost-effective test and

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measurement products. The laser has desirable properties in the quality of the laser light produced, the speed at which it can operate, the small size of the package, and the environmental conditions in which it can operate. We believe that these traits make it possible for us to move our fiber optic sensing capabilities out of the laboratory, and into more demanding environments such as aircraft, operating rooms, and challenging industrial conditions. We are, therefore, using this technology to pursue business opportunities in new markets such as industrial and medical sensing, as described above and below.

*Sales & Marketing*

We market our fiber optic products to telecommunications companies, defense agencies, government system integrators, researchers, OEMs, distributors and strategic partners worldwide. We have a regional sales force that markets and sells our products through manufacturer representative organizations to customers in North America and through partner and distribution channels for other sales around the world.

We believe that we provide a high level of support in developing and maintaining our long-term relationships with our customers. Customer service and support are provided through our offices and those of our partners that are located throughout the world.

***Fiber Optic Shape Sensing Solutions for Robotic, Non-Robotic and Minimally Invasive Surgical Systems***

We are developing our fiber optic sensing technology to enhance medical devices used for minimally invasive procedures for diagnostics, surgery or therapy. This technology can be applied to measure the position and shape of an instrument inside the body, as well as to measure pressure and temperature. This information can be collected in real time and used as feedback to aid in the navigation of robotic surgical devices while inside the body by providing the device s current shape and position. It can also provide similar benefits to non-robotic devices.

We have entered into an intellectual property licensing, development and supply agreement with Intuitive Surgical, Inc., or Intuitive, a technology leader in robotic-assisted minimally invasive surgery and the manufacturer of the da Vinci® Surgical System. We have also entered into similar agreements with Hansen Medical, Inc., or Hansen, a global leader in flexible robotics and the manufacturer of the Sensei® and Magellan® robotic catheter systems.

Under our multi-year agreement with Intuitive, we are developing a fiber optic-based shape sensing and position tracking system to be integrated into Intuitive s products. We entered into the agreement with Intuitive to expand our presence within the medical devices market. Our shape sensing and position tracking system provides real-time shape and position measurements, which will help surgeons navigate through the body. The system consists of software, instrumentation and disposable optical sensing fiber. Our technology is unique and designed to provide the user with an accurate, direct and continuous measurement of device location within the body without limiting the surgeon s line of sight or introducing electrical signals or radiation into the body. Depending on the progress of these services and the development of a resulting product, we have certain exclusive supply rights for the component that would implement our fiber optic shape sensing technology.

We have a development and supply agreement with Hansen under which we are to develop localization and shape sensing solution for Hansen s medical robotics system. We have also agreed on certain terms under which we would supply fiber optic shape sensing systems to Hansen. At this time, however, Hansen is not requesting us to perform any significant amount of development work towards this solution.

In 2012, we entered into a development agreement with Philips Healthcare, acting through Philips Medical Systems Nederland BV, or Philips. Under the development agreement, we conducted certain development work during 2012 in

cooperation with Philips to advance our fiber-optic shape sensing technology towards commercialization in the non-robotic medical field. Under the development agreement, Philips agreed to pay us monthly on a time and materials basis, less a specified holdback amount, in accordance with corresponding milestones and estimated resource requirements. In addition, under the development agreement, Philips purchased specified prototype systems from us.

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**Technology Development**

We provide applied research for customers in our primary areas of focus, including sensing and materials such as nanomaterials, coatings, adhesives, composites and bio-engineered materials. Until our recent sale of SCC, we also provided applied research in the area of secure computing. We generally compete to win contracts in these areas on a fee-for-service basis. Our Technology Development segment has a successful track record of evaluating innovative technologies to address the needs of our customers.

We seek to maximize the benefits we derive from our contract research business, including revenue generation and identification of promising technologies for further development. We focus primarily on opportunities in which we develop intellectual property rights in areas that we believe have commercialization potential. We take a disciplined approach to contract research to try to ensure that the costs of any contract we undertake will be fully reimbursed. We believe that this model is cost-efficient and significantly reduces our development risk in that it enables us to defray the costs of riskier technology development with third-party funding.

As of June 30, 2013, our Technology Development segment, excluding SCC, was engaged in 76 active contracts, with typical terms ranging from six months to three years. These projects span a wide range of applications across our areas of focus.

Although we conduct our applied research on a fee-for-service basis for third parties, we seek to retain full or partial rights to the technologies and patents developed under those contracts and to continuously enlarge and strengthen our intellectual property portfolio. New technology that we develop may complement existing technologies and enable us to develop applications and products that were not previously possible. In addition, the technologies we develop may also be applicable to commercial markets beyond the scope of the applications originally contemplated in the contract research stage, and we endeavor to capture the value of those opportunities.

Each year, U.S. government federal agencies and departments are required to set aside a portion of their grant awards for SBIR-qualified organizations. SBIR contracts include Phase I feasibility contracts of up to $150,000 and Phase II proof-of-concept contracts, which can be as high as $1,000,000. We have won three National Tibbetts Awards from the SBA for outstanding SBIR performance. We have also won research contracts outside the SBIR program from corporations and government entities. These contracts typically have a longer duration and higher value than SBIR grants. In the future, we will seek to derive a larger portion of our contract research revenues from contracts outside of the SBIR program.

***Materials***

We are actively developing a wide variety of materials. One of these is a new class of non-halogenated fire retardant additives developed as a possible replacement for brominated fire retardants, which are coming under increasing criticism due to health concerns. Our non-halogenated fire retardant additives are being evaluated for use in composites, such as fiber reinforced composites.

We have developed a range of coatings, including both hydrophobic and superoleophobic coatings. These coatings are being evaluated for use in a number of applications. Other coatings under development include anti-corrosion and damage-indicating coatings.

We are also working on a variety of bioengineered materials for homeostatic agents and wound healing. These materials must be approved by the FDA or similar foreign regulatory agencies before they can be marketed, which we do not expect to occur for at least several years, if at all.

Our nanomaterials activity is focused on fullerenes and tri-metal nitride endohedral fullerene, or Trimetasphere®, materials. The Trimetasphere® nanomaterial is a carbon sphere with three metal atoms and an enclosed nitrogen atom. We have obtained an exclusive license from Virginia Tech to commercialize Trimetasphere nanomaterials under an issued U.S. patent and pending U.S. patent applications.

One potential market application of our nanomaterial technology is magnetic resonance imaging, or MRI. We believe that our Trimetasphere nanomaterial contrast agents may be able to provide a higher image contrast than existing contrast agents but with a lower risk of toxicity. Medical contrast agents for human use, such as our Trimetasphere nanomaterials, must be

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approved by the FDA or similar foreign regulatory agencies before they can be marketed, which we do not expect to occur for at least several years, if at all. This approval process can involve significant time and expense and may delay or prevent our products from reaching the market.

We are also researching other applications for nanomaterial-based drugs based on the anti-oxidative characteristics of fullerenes. These products are in the early stages of development, but if successful, could offer new market opportunities for us.

In 2009, we acquired a patent portfolio from Tego Biosciences, Inc., including in- and out-licenses, generally for the use of carbon fullerene nanomolecules in the treatment of human health. We believe this acquisition strengthened our patent position in this area, but there can be no assurances that we will be able to obtain commercial success as a result of these patents and licenses.

***Sensing***

Our Technology Development segment also performs a significant amount of applied research towards developing new sensors. This includes sensors for the purpose of corrosion, temperature, strain, pressure, structural health and chemical detection. Much of the work is directed to harsh environments and uses optics. Examples include measuring temperature and neutron flux in nuclear reactors, pressure and temperature in gas turbines, and temperatures of cryogenic lines. The effort utilizes both discrete and distributed sensors. Our technology development work in this area is closely aligned with our Products and Licensing segment and is directed at advancing the technology and the development of new applications.

**CORPORATE HISTORY**

We were incorporated in the Commonwealth of Virginia in 1990 and reincorporated in the State of Delaware in April 2003. We completed our initial public offering in June 2006. Our executive offices are located at 1 Riverside Circle, Suite 400, Roanoke, Virginia 24016 and our main telephone number is (540) 769-8400. Our Web site is located on the world wide web at http://www.lunainc.com. We do not incorporate by reference into this prospectus the information on, or accessible through, our website, and you should not consider it as part of this prospectus.

On July 17, 2009, we filed a voluntary petition for relief in order to reorganize under Chapter 11 of the United States Bankruptcy Code, including a proposed plan of reorganization, which we refer to in this report as the Reorganization Plan, with the United States Bankruptcy Court for the Western District of Virginia. On January 12, 2010, the Bankruptcy Court approved the Reorganization Plan and we emerged from bankruptcy on that date.

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**THE OFFERING**

| | |
|---|---|
| Issuer | Luna Innovations Incorporated |
| Selling Stockholder | Kent A. Murphy, Ph.D. |
| Securities offered | 2,637,161 shares of our common stock |
| Use of proceeds | We will not receive any proceeds from sales of the shares of common stock sold from time to time under this prospectus by the Selling Stockholder. |
| Risk Factors | An investment in the common stock involves a high degree of risk. See Risk Factors beginning on page 7 for a discussion of certain factors that you should consider when evaluating an investment in the common stock. |
| NASDAQ Capital Market symbol | LUNA |

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## RISK FACTORS

*You should carefully consider the risks described below before deciding whether to invest in our common stock. The risks described below are not the only ones we face. Additional risks not presently known to us or that we currently believe are immaterial may also impair our business operations and financial results. If any of the following risks actually occurs, our business, financial condition or results of operations could be adversely affected. In such case, the trading price of our common stock could decline and you could lose all or part of your investment. Our filings with the Securities and Exchange Commission also contain forward-looking statements that involve risks or uncertainties. Our actual results could differ materially from those anticipated or contemplated by these forward-looking statements as a result of a number of factors, including the risks we face described below, as well as other variables that could affect our operating results. Past financial performance should not be considered to be a reliable indicator of future performance, and investors should not use historical trends to anticipate results or trends in future periods.*

### RISKS RELATING TO OUR BUSINESS GENERALLY

***We rely and will continue to rely on contracts and grants awarded under the SBIR program for a significant portion of our revenues. A finding by the SBA that we no longer qualify to receive SBIR awards could adversely affect our business.***

We compete as a small business for some of our government contracts. As described above, our revenues derived from the SBIR program account for a significant portion of our consolidated total revenues, and contract research, including SBIR contracts, will remain a significant portion of our consolidated total revenues for the foreseeable future.

We may not continue to qualify to participate in the SBIR program or to receive new SBIR awards from federal agencies. In order to qualify for SBIR contracts and grants, we must meet certain size and ownership eligibility criteria. These eligibility criteria are applied as of the time of the award of a contract or grant. A company can be declared ineligible for a contract award as a result of a size challenge filed with the SBA by a competitor or a federal agency.

In order to be eligible for SBIR contracts and grants, under current SBA rules we must be more than 50% owned and controlled by individuals who are U.S. citizens or permanent resident aliens, and/or other small business concerns (each of which is more than 50% owned and controlled by individuals who are U.S. citizens or permanent resident aliens). In the event our institutional ownership significantly increases, either because of increased buying by institutions or selling by individuals, including any purchases of securities from the Selling Stockholder pursuant to the registration statement of which this prospectus is a part, we could lose eligibility for new SBIR contracts and grants.

Also, in order to be eligible for SBIR contracts and grants, the number of our employees, including those of any entities that are considered to be affiliated with us, cannot exceed 500. As of June 30, 2013, we had approximately 124 full-time employees. In determining whether we are affiliated with any other entity, the SBA may analyze whether another entity controls or has the power to control us. Carilion Clinic, or Carilion, is our largest institutional stockholder. The SBA has, since early 2011, been in the process of performing a formal size determination that focused on whether or not Carilion is or was our affiliate. Although we do not believe that Carilion has or had the power to control our company, we cannot assure you that the SBA will interpret its regulations in our favor on this question. Under its then-existing regulations, the SBA could conclude that a stockholder that was large compared to others had the power to control us and is our affiliate. The resale of Dr. Murphy s stock, pursuant to the registration

statement of which this prospectus is a part, to more than one buyer may impact the SBA s determination as to whether Carilion is or was a large stockholder compared to others. If the SBA were to make a determination that we are or were affiliated with Carilion, we would exceed the size limitations, as Carilion has over 500 employees. In that case, we would lose eligibility for new SBIR contracts and grants and other awards that are set aside for small businesses based on the criterion of number of employees, and the relevant government agency would have the discretion to suspend performance on existing SBIR grants.

In addition, it is possible that the sale of common stock in the future by our founder, Dr. Murphy, including the resale of Dr. Murphy s stock pursuant to the registration statement of which this prospectus is a part, could negatively affect the interpretation of SBA regulations on this question of affiliation, as well as possibly result in an increase in our institutional ownership. If Dr. Murphy sells a substantial portion of his shares to institutions, large business concerns or non-U.S. citizens, we may no longer meet the 50% ownership requirement described above, in which case we would become ineligible to receive SBIR contract awards.

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Moreover, if Dr. Murphy were to sell any portion of his shares without corresponding sales by Carilion, such sales may increase the likelihood that the SBA may conclude that Carilion is or was a large stockholder compared to others and hence has or had the power to control us and is or was our affiliate, in which case we would lose SBIR eligibility, as described above. The loss of our eligibility to receive SBIR awards would have a material adverse effect on our revenues, cash flows and ability to fund our growth.

Moreover, as we grow our business, it is foreseeable that we will eventually exceed the SBIR size limitations, in which case we may be required to seek alternative sources of revenues or capital.

***If there are substantial sales of our common stock, or the perception that such sales may occur, our stock price could decline.***

If any of our stockholders were to sell substantial amounts of our common stock, including the resale of stock by the Selling Stockholder pursuant to this prospectus, the market price of our common stock may decline, which might make it more difficult for us to sell equity or equity-related securities in the future at a time and price that we deem appropriate. Substantial sales of our common stock, or the perception that such sales may occur, may have a material adverse effect on the prevailing market price of our common stock.

Pursuant to an Investor Rights Agreement, Carilion, Dr. Murphy and certain other stockholders have rights to require us, subject to certain conditions, to file one or more registration statements providing for the sale of up to an aggregate of approximately 6.5 million shares of our common stock (which number includes approximately 2.8 million shares of common stock owned by Dr. Murphy, approximately 2.2 million shares of common stock owned by Carilion, approximately 1.2 million shares of common stock issuable to Carilion upon conversion of shares of Series A Preferred Stock it currently holds and approximately 275,000 shares of common stock issuable to Carilion as dividends on that preferred stock). Under the agreement, these stockholders also have the right to include their shares in registration statements that we may file for ourselves or other stockholders. The registration statement of which this prospectus is a part includes the resale of Dr. Murphy s stock pursuant to our contractual obligations with Dr. Murphy described above. Once we register the resale of these shares, they can generally be freely sold in the public market.

Sales of shares by Dr. Murphy or Carilion pursuant to the registration statement of which this prospectus is a part, or otherwise, or the sale of shares by any of our other significant stockholders, or even the filing of a registration statement registering the resale of such shares at any time, may have a material adverse effect on the market price of our stock. Any such continuing material adverse effect on the market price of our stock could impair our ability to comply with NASDAQ s continuing listing standards in respect of our minimum stock price, as further described below.

***A decline in government research contract awards or government funding for existing or future government research contracts, including SBIR contracts, could adversely affect our revenues, cash flows and ability to fund our growth.***

Technology development revenue, which consists primarily of government-funded research, accounted for approximately 52%, 65% and 63% of our consolidated total revenues for the six months ended June 30, 2013 and the years ended December 31, 2012 and 2011, respectively. As a result, we are vulnerable to adverse changes in our revenues and cash flows if a significant number of our research contracts and subcontracts were to be simultaneously delayed or canceled for budgetary, performance or other reasons. For example, the U.S. government may cancel these contracts at any time without cause and without penalty or may change its requirements, programs or contract budget, any of which could reduce our revenues and cash flows from U.S. government research contracts. Our revenues and cash flows from U.S. government research contracts and subcontracts could also be reduced by declines or other

changes in U.S. defense, homeland security and other federal agency budgets. In addition, we compete as a small business for some of these contracts, and in order to maintain our eligibility to compete as a small business, we, together with any affiliates, must continue to meet size and revenue limitations established by the U.S. government.

Our contract research customer base includes government agencies, corporations and academic institutions. Our customers are not obligated to extend their agreements with us and may elect not to do so. Also, our customers priorities regarding funding for certain projects may change and funding resources may no longer be available at previous levels.

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In addition, the Budget Control Act commits the U.S. Government to reduce the federal deficit by $1.2 trillion over ten years through a combination of automatic, across-the-board spending cuts and caps on discretionary spending. This sequestration under the Budget Control Act is split equally between defense and non-defense programs. Originally scheduled to take effect on January 2, 2013, the deadline for averting sequestration was delayed until March 1, 2013 by the by the American Taxpayer Relief Act of 2012. Congress and the Administration continue to debate these issues. Any automatic across-the-board cuts required by sequestration could have a material adverse effect on our technology development revenue and, consequently, our results of operations. While the exact manner in which this sequestration may impact our business remains unclear, funding for programs in which we participate could be reduced, delayed or cancelled. Our ability to obtain new contract awards also could be negatively affected.

In addition to contract cancellations and changes in agency budgets, our future financial results may be adversely affected by curtailment of or restrictions on the U.S. government s use of contract research providers, including curtailment due to government budget reductions and related fiscal matters or any legislation or resolution limiting the number or amount of awards we may receive. These or other factors could cause U.S. defense and other federal agencies to conduct research internally rather than through commercial research organizations or direct awards to other organizations, to reduce their overall contract research requirements or to exercise their rights to terminate contracts. Alternatively, the U.S. government may discontinue the SBIR program or its funding altogether. Also, final regulations implementing the recently-enacted SBIR reauthorization will allow increased competition for SBIR awards from companies that may not have previously been eligible, such as those backed by venture capital operating companies, hedge funds and private equity firms. Any of these developments could limit our ability to obtain new contract awards and adversely affect our revenues, cash flows and ability to fund our growth.

***Our failure to attract, train and retain skilled employees or members of our senior management and to obtain necessary security clearances for such persons or maintain a facility security clearance would adversely affect our business and operating results.***

The availability of highly trained and skilled technical and professional personnel is critical to our future growth and profitability. Competition for scientists, engineers, technicians and professional personnel is intense and our competitors aggressively recruit key employees. In the past, we have experienced difficulties in recruiting and hiring these personnel as a result of the tight labor market in certain fields. Any difficulty in hiring or retaining qualified employees, combined with our growth strategy and future needs for additional experienced personnel, particularly in highly specialized areas such as nanomaterial manufacturing and fiber optic sensing technologies, may make it more difficult to meet all of our needs for these employees in a timely manner. Although we intend to continue to devote significant resources to recruit, train and retain qualified employees, we may not be able to attract and retain these employees, especially in technical fields in which the supply of experienced qualified candidates is limited, or at the senior management level. Any failure to do so would have an adverse effect on our business. Any loss of key personnel could have a material adverse effect on our ability to meet key operational objectives, such as timely and effective project milestones and product introductions, which in turn could adversely affect our business, results of operations and financial condition. We also have contractual obligations to adequately staff certain development projects, and a loss of key personnel could lead to our inability to meet these obligations, which in turn could expose us to claims for significant damages under any such agreement.

We provide certain services to the U.S. government that require us to maintain a facility security clearance and for certain of our employees and our board chairman to hold security clearances. In general, the failure for necessary persons to obtain or retain sufficient security clearances, any loss by us of a facility security clearance or any public reprimand related to security matters could result in a U.S. government customer terminating an existing contract or choosing not to renew a contract or prevent us from bidding on or winning certain new government contracts.

In addition, our future success depends in a large part upon the continued service of key members of our senior management team. We do not maintain any key-person life insurance policies on our officers. The loss of any members of our management team or other key personnel could seriously harm our business.

***The results of our operations could be adversely affected by economic and political conditions and the effects of these conditions on our customers businesses and levels of business activity.***

Global economic and political conditions affect our customers businesses and the markets they serve. A severe or prolonged economic downturn or a negative or uncertain political climate could adversely affect our customers financial conditions and the timing or levels of business activity of our customers and the industries we serve. This may reduce the demand for our products or depress pricing for our products and have a material adverse effect on our results of operations. Changes in global economic

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conditions could also shift demand to products or services for which we do not have competitive advantages, and this could negatively affect the amount of business we are able to obtain. In addition, if we are unable to successfully anticipate changing economic and political conditions, we may be unable to effectively plan for and respond to those changes, and our business could be negatively affected as a result.

There was a rapid softening of the economy and tightening of the financial markets in the second half of 2008 that has continued into 2013. This slowing of the economy has reduced the financial capacity of our customers and possibly our potential customers, thereby slowing spending on the products and services we provide. The outlook for the economy for the remainder of 2013 and beyond remains uncertain, and until there is a sustained economic recovery our revenues and results of operations could be negatively impacted.

***We have a history of losses, and because our strategy for expansion may be costly to implement, we may experience continuing losses and may never achieve or maintain profitability or positive cash flow.***

We realized a consolidated net loss from continuing operations of $1.9 million for the six months ended June 30, 2013 and net loss attributable to common stockholders of $1.5 million for each of the years ended December 31, 2012 and 2011. We expect to continue to incur significant expenses as we pursue our strategic initiatives, including increased expenses for research and development, sales and marketing and manufacturing. We may also grow our business in part through acquisitions of additional companies and complementary technologies which could cause us to incur greater than anticipated transaction expenses, amortization or write-offs of intangible assets and other acquisition-related expenses. As a result, we expect to incur net losses for the foreseeable future, and these losses could be substantial. At a certain level, continued net losses could impair our ability to comply with NASDAQ continued listing standards, as described further below.

Our ability to generate additional revenues and to become profitable will depend on our ability to develop and commercialize innovative technologies, expand our contract research capabilities and sell the products that result from those development initiatives. We are unable to predict when or if we will be able to achieve profitability. If our revenues do not increase, or if our expenses increase at a greater rate than our revenues, we will continue to experience losses. Even if we do achieve profitability, we may not be able to sustain or increase our profitability on a quarterly or annual basis.

***We have obtained capital by borrowing money under a credit facility and we might require additional capital to support and expand our business; our credit facility has various loan covenants with which we must comply and if we need any such additional capital or we fail to comply with our loan covenants, this capital might not be available or only available on unfavorable terms.***

We intend to continue to make investments to support our business growth, including developing new products, enhancing our existing products, obtaining important regulatory approvals, enhancing our operating infrastructure, completing our development activities and building our commercial scale manufacturing facilities. To the extent that we are unable to become or remain profitable and to finance our activities from our continuing operations, we may require additional funds to support these initiatives and to grow our business.

If we are successful in raising additional funds through issuances of equity or convertible debt securities, our existing stockholders could suffer significant dilution, including as the result of the issuance of warrants in connection with the financing, and any new equity securities we issue could have rights, preferences and privileges superior to those of our existing common stock. Furthermore, such financings may jeopardize our ability to apply for SBIR grants or qualify for SBIR contracts or grants, and our dependence on SBIR grants may restrict our ability to raise additional outside capital. If we raise additional funds through debt financings, these financings may involve significant cash payment

obligations and covenants that restrict our ability to operate our business and make distributions to our stockholders.

We maintain a credit facility with Silicon Valley Bank, or SVB, which requires us to observe certain financial and operational covenants, including maintenance of a specified cash balance, protection and registration of intellectual property rights, and certain customary negative covenants, as well as other customary events of default. If any event of default occurs SVB may declare due immediately all borrowings under our credit facility and foreclose on the collateral. Furthermore, an event of default would result in an increase in the interest rate on any amounts outstanding.

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If we are unable to borrow under the SVB credit facility or otherwise obtain adequate financing or financing terms satisfactory to us when we require it, our ability to continue to support our business growth and to respond to business challenges could be significantly limited.

## RISKS RELATING TO OUR OPERATIONS AND BUSINESS STRATEGY

***If we cannot successfully transition our revenue mix from contract research revenues to product sales and license revenues, we may not be able to fully execute our business model or grow our business.***

Our business model and future growth depend on our ability to transition to a revenue mix that contains significantly larger product sales and revenues from the provision of services or from licensing. Product sales and these revenues potentially offer greater scalability than contract research revenues. Our current plan is to increase our sales of commercial products, our licensing revenue and our provision of non-research services to customers so as to represent a larger percentage of our total revenues. If we are unable to develop and grow our product sales and revenues from the provision of services or from licensing to augment our contract research revenues, however, our ability to execute our business model or grow our business could suffer. There can be no assurance that we will be able to achieve increased revenues in this manner.

***If we are unable to manage growth effectively, our revenue and net loss could be adversely affected.***

While historically we have developed and commercialized only a few products at a time, we plan to grow our revenues by developing and commercializing multiple products concurrently across many industries, technologies and markets. Our ability to expand our business by developing and commercializing multiple products simultaneously requires that we manage a diverse range of projects and expand our personnel resources. Our inability to do any of these could prevent us from successfully implementing our growth strategy, causing our revenues and profits to be adversely affected.

To advance the development of multiple promising potential products concurrently, we need to manage effectively the logistics of maintaining the requisite corporate, operational, administrative and financing functions for each of these product opportunities. Potentially expanding our operations into new geographic areas and relying on multiple facilities to develop and manufacture different products concurrently pose additional challenges. We have little experience in managing these functions simultaneously for multiple projects in development or in building new infrastructure and integrating the operations of various facilities. If we cannot manage this process successfully, we may experience operating difficulties, additional expenditures and limited revenue growth.

We may need to expand our personnel resources to grow our business effectively. We believe that sustained growth at a higher rate will place a strain on our management as well as on our other human resources. To manage this growth, we must continue to attract and retain qualified management, professional, scientific and technical and operating personnel. If we are unable to recruit a sufficient number of qualified personnel, we may be unable to staff and manage projects adequately, which in turn may slow the rate of growth of our contract research revenue or our product development efforts.

***We may not be successful in identifying market needs for new technologies and developing new products to meet those needs.***

The success of our business model depends on our ability to correctly identify market needs for new technologies. We intend to identify new market needs, but we may not always have success in doing so in part because our contract research largely centers on identification and development of unproven technologies, often for new or emerging

markets. Furthermore, we must identify the most promising technologies from a sizable pool of projects. If our commercialization strategy process fails to identify projects with commercial potential or if management does not ensure that such projects advance to the commercialization stage, we may not successfully commercialize new products and grow our revenues.

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Our growth strategy requires that we not only identify new technologies that meet market needs, but that we also develop successful commercial products that address those needs. We face several challenges in developing successful new products. Many of our existing products and those currently under development are technologically innovative and require significant and lengthy product development efforts. These efforts include planning, designing, developing and testing at the technological, product and manufacturing-process levels. These activities require us to make significant investments. Although there are many potential applications for our technologies, our resource constraints require us to focus on specific products and to forgo other opportunities. We expect that one or more of the potential products we choose to develop will not be technologically feasible or will not achieve commercial acceptance, and we cannot predict which, if any, of our products we will successfully develop or commercialize. The technologies we research and develop are new and steadily changing and advancing. The products that are derived from these technologies may not be applicable or compatible with the state of technology or demands in existing markets. Our existing products and technologies may become uncompetitive or obsolete if our competitors adapt more quickly than we do to new technologies and changes in customers requirements. Furthermore, we may not be able to identify if and when new markets will open for our products given that future applications of any given product may not be readily determinable, and we cannot reasonably estimate the size of any markets that may develop. If we are not able to successfully develop new products, we may be unable to increase our product revenues.

***We depend on third-party vendors for specialized components in our manufacturing operations, making us vulnerable to supply shortages and price fluctuations that could harm our business.***

We primarily rely on third-party vendors for the manufacture of the specialized components used in our products. The highly specialized nature of our supply requirements poses risks that we may not be able to locate additional sources of the specialized components required in our business. For example, there are few manufacturers who produce the special lasers used in our optical test equipment. Our reliance on these vendors subjects us to a number of risks that could negatively affect our ability to manufacture our products and harm our business, including interruption of supply. Although we are now manufacturing tunable lasers in low-rate initial production, we expect our overall reliance on third-party vendors to continue. Any significant delay or interruption in the supply of components, or our inability to obtain substitute components or materials from alternate sources at acceptable prices and in a timely manner could impair our ability to meet the demand of our customers and could harm our business.

***We face and will face substantial competition in several different markets that may adversely affect our results of operations.***

We face and will face substantial competition from a variety of companies in several different markets. Our competitors in contract research include, but are not limited to, companies such as General Dynamics Corporation, Lockheed Martin Corporation, SAIC, Inc. and SRA International, Inc. In the instrumentation and test and measurement products market, our competitors include, but are not limited to, large companies such as Agilent Technologies, Inc., Analog Devices, Inc., Freescale Semiconductor, Inc., JDS Uniphase Corp., Robert Bosch GmbH and Silicon Sensing, as well as emerging companies.

The products that we have developed or are currently developing will compete with other technologically innovative products as well as products incorporating conventional materials and technologies. We expect that our products will face competition in a wide range of industries, including telecommunications, industrial instrumentation, healthcare, military and security applications.

Many of our competitors have longer operating histories, greater name recognition, larger customer bases and significantly greater financial, sales and marketing, manufacturing, distribution, technical and other resources than we do. These competitors may be able to adapt more quickly to new or emerging technologies and changes in customer

requirements. In addition, current and potential competitors have established or may establish financial or strategic relationships among themselves or with existing or potential customers or other third parties. Accordingly, new competitors or alliances among competitors could emerge and rapidly acquire significant market share. We cannot assure you that we will be able to compete successfully against current or new competitors, in which case our revenues may fail to increase or may decline.

***We have limited experience manufacturing our products in commercial quantities in a cost-effective manner, which could adversely impact our business.***

In the past, we produced most of our products on a custom order basis rather than pursuant to large contracts that require production on a large volume basis. Accordingly, other than the commercial manufacture of products by our Products and Licensing

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segment, we have no experience manufacturing products in large volumes. Because our experience in large scale manufacturing is limited, we may encounter unforeseen difficulties in our efforts to manufacture other products or materials in commercial quantities or have to rely on third-party contractors over which we may not have direct control to manufacture our products. We may also encounter difficulties and delays in manufacturing our products for any of the following reasons:

- we may need to expand our manufacturing operations, and our production processes may have to change to accommodate this growth;
- to increase our manufacturing output significantly, we will have to attract and retain qualified employees, who are in short supply, for the assembly and testing operations;
- we might have to sub-contract to outside manufacturers which might limit our control of costs and processes; and
- our manufacturing operations may have to comply with government or customer-mandated specifications.

If we are unable to keep up with demand for our products, our revenues could be impaired, market acceptance of our products could be adversely affected and our customers might instead purchase our competitors products. Moreover, failure to develop and maintain a U.S. market for goods developed with U.S. government-licensed technology may result in the cancellation of the relevant U.S. government licenses. Our inability to manufacture our products successfully would have a material adverse effect on our revenues.

Even if we are able to manufacture our products on a commercial scale, the cost of manufacturing our products may be higher than we expect. If the costs associated with manufacturing are not significantly less than the prices at which we can sell our products, we may not be able to operate at a profit.

***Our nanotechnology-enabled products are new and may be, or may be perceived as being, harmful to human health or the environment.***

While we believe that none of our current products contain chemicals known by us to be hazardous or subject to environmental regulation, it is possible that our current or future products, particularly carbon-based nanomaterials, may become subject to environmental or other regulation. We intend to develop and sell carbon-based nanomaterials as well as nanotechnology-enabled products, which are products that include nanomaterials as a component to enhance those products performance. Nanomaterials and nanotechnology-enabled products have a limited historical safety record. Because of their size or shape or because they may contain harmful elements, such as gadolinium and other rare-earth metals, our products could pose a safety risk to human health or the environment. These characteristics may also cause countries to adopt regulations in the future prohibiting or limiting the manufacture, distribution or use of nanomaterials or nanotechnology-enabled products. Such regulations may inhibit our ability to sell some products containing those materials and thereby harm our business or impair our ability to develop commercially viable products.

The subject of nanotechnology has received negative publicity and has aroused public debate. Government authorities could, for social or other purposes, prohibit or regulate the use of nanotechnology. Ethical and other concerns about

nanotechnology could adversely affect acceptance of our potential products or lead to government regulation of nanotechnology-enabled products.

***We face risks associated with our international business.***

We currently conduct business internationally and we might considerably expand our international activities in the future. Our international business operations are subject to a variety of risks associated with conducting business internationally, including:

having to comply with U.S. export control regulations and policies that restrict our ability to communicate with non-U.S. employees and supply foreign affiliates and customers;

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changes in or interpretations of foreign regulations that may adversely affect our ability to sell our products, perform services or repatriate profits to the United States;

the imposition of tariffs;

hyperinflation or economic or political instability in foreign countries;

imposition of limitations on, or increase of withholding and other taxes on remittances and other payments by foreign subsidiaries or joint ventures;

conducting business in places where business practices and customs are unfamiliar and unknown;

the imposition of restrictive trade policies;

the imposition of inconsistent laws or regulations;

the imposition or increase of investment and other restrictions or requirements by foreign governments;

uncertainties relating to foreign laws and legal proceedings;

having to comply with a variety of U.S. laws, including the Foreign Corrupt Practices Act; and

having to comply with licensing requirements.

We do not know the impact that these regulatory, geopolitical and other factors may have on our international business in the future.

***We could be negatively affected by a security breach, either through cyber attack, cyber intrusion or other significant disruption of our IT networks and related systems.***

We face the risk, as does any company, of a security breach, whether through cyber attack or cyber intrusion over the Internet, malware, computer viruses, attachments to e-mails, persons inside our organization or persons with access to systems inside our organization, or other significant disruption of our IT networks and related systems. The risk of a security breach or disruption, particularly through cyber attack or cyber intrusion, including by computer hackers, foreign governments and cyber terrorists, has increased as the number, intensity and sophistication of attempted attacks and intrusions from around the world have increased.

As a technology company, and particularly as a government contractor, we may face a heightened risk of a security breach or disruption from threats to gain unauthorized access to our proprietary, confidential or classified information

on our IT networks and related systems. These types of information and IT networks and related systems are critical to the operation of our business and essential to our ability to perform day-to-day operations, and, in some cases, are critical to the operations of certain of our customers. In addition, as certain of our technological capabilities become widely known, it is possible that we may be subjected to cyber attack or cyber intrusion as third parties seek to gain improper access to information regarding these capabilities and cyber attacks or cyber intrusion could compromise our confidential information or our IT networks and systems generally, as it is not practical as a business matter to isolate all of our confidential information and trade secrets from email and internet access. There can be no assurance that our security efforts and measures will be effective or that attempted security breaches or disruptions would not be successful or damaging.

A security breach or other significant disruption involving these types of information and IT networks and related systems could disrupt the proper functioning of these networks and systems and therefore our operations, compromise our confidential information and trade secrets, or damage our reputation among our customers, and the public generally. Any or all of foregoing developments could have a negative impact on our results of operations, financial condition and cash flows.

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## RISKS RELATING TO OUR REGULATORY ENVIRONMENT

***As a provider of contract research to the U.S. government, we are subject to federal rules, regulations, audits and investigations, the violation or failure of which could adversely affect our business.***

We must comply with and are affected by laws and regulations relating to the award, administration and performance of U.S. government contracts. Government contract laws and regulations affect how we do business with our government customers and, in some instances, impose added costs on our business. A violation of a specific law or regulation could result in the imposition of fines and penalties, termination of our contracts or debarment from bidding on contracts. In some instances, these laws and regulations impose terms or rights that are more favorable to the government than those typically available to commercial parties in negotiated transactions. For example, the U.S. government may terminate any of our government contracts and, in general, subcontracts, at their convenience, as well as for default based on performance.

In addition, U.S. government agencies, including the Defense Contract Audit Agency and the Department of Labor, routinely audit and investigate government contractors. These agencies review a contractor s performance under its contracts, cost structure and compliance with applicable laws, regulations and standards. The U.S. government also may review the adequacy of, and a contractor s compliance with, its internal control systems and policies, including the contractor s purchasing, property, estimating, compensation and management information systems. Any costs found to be improperly allocated to a specific contract will not be reimbursed, while such costs already reimbursed must be refunded. If an audit uncovers improper or illegal activities, we may be subject to civil and criminal penalties and administrative sanctions, including termination of contracts, forfeiture of profits, suspension of payments, fines and suspension or prohibition from doing business with the U.S. government. In addition, our reputation could suffer serious harm if allegations of impropriety were made against us.

In addition to the risk of government audits and investigations, U.S. government contracts and grants impose requirements on contractors and grantees relating to ethics and business practices, which carry civil and criminal penalties including monetary fines, assessments, loss of the ability to do business with the U.S. government and certain other criminal penalties.

We may also be prohibited from commercially selling certain products that we develop under our Technology Development segment or related products based on the same core technologies if the U.S. government determines that the commercial availability of those products could pose a risk to national security. For example, certain of our wireless technologies have been classified as secret by the U.S. government and as a result we cannot sell them commercially. Any of these determinations would limit our ability to generate product sales and license revenues.

***Our operations are subject to domestic and foreign laws, regulations and restrictions, and noncompliance with these laws, regulations and restrictions could expose us to fines, penalties, suspension or debarment, which could have a material adverse effect on our profitability and overall financial position.***

Our operations, particularly our international sales, subject us to numerous U.S. and foreign laws and regulations, including, without limitation, regulations relating to imports, exports (including the Export Administration Regulations and the International Traffic in Arms Regulations), technology transfer restrictions, anti-boycott provisions, economic sanctions and the Foreign Corrupt Practices Act. The number of our various emerging technologies, the development of many of which has been funded by the Department of Defense, presents us with many regulatory challenges. Failure by us or our sales representatives or consultants to comply with these laws and regulations could result in administrative, civil, or criminal liabilities and could result in suspension of our export privileges, which could have a material adverse effect on our business. Changes in regulation or political environment

may affect our ability to conduct business in foreign markets including investment, procurement and repatriation of earnings.

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***Our healthcare and medical products are and may continue to be subject to a lengthy and uncertain domestic regulatory approval process. If we do not obtain and maintain the necessary domestic regulatory approvals or clearances, we will not be able to market and sell our products for clinical use in the United States. Complying with applicable regulations is an expensive and time-consuming process and any failure to fully comply with such regulations could subject us to enforcement actions.***

Certain of our current and potential products could require regulatory clearances or approvals prior to commercialization. For example, any nanomaterial-based MRI contrast agent is likely to be considered a drug under the Federal Food, Drug and Cosmetic Act, or the FDC Act. Drugs and some medical devices are subject to rigorous preclinical testing and other approval requirements by the U.S. Food and Drug Administration, or the FDA, pursuant to the FDC Act, and regulations under the FDC Act, as well as by similar health authorities in foreign countries.

Various federal statutes and regulations also govern or influence the testing, manufacturing, safety, labeling, packaging, advertising, storage, registration, listing and recordkeeping related to marketing of pharmaceuticals. The process of obtaining these clearances or approvals and the subsequent compliance with appropriate federal statutes and regulations require the expenditure of substantial resources, which we may not be able to obtain on favorable terms, if at all. We cannot be certain that any required FDA or other regulatory approval will be granted or, if granted, will not be withdrawn. Our failure to obtain the necessary regulatory approvals, or our failure to obtain them in a timely manner, will prevent or delay our commercialization of new products and our business or our stock price could be adversely affected as a result.

Our commercially distributed medical device products will be subject to various post-market regulatory requirements, compliance with which will be expensive and time-consuming.

We will also become subject to inspection and marketing surveillance by the FDA to determine our compliance with regulatory requirements. If the FDA determines that we have failed to comply, it can institute a wide variety of enforcement actions ranging from a regulatory letter to a public warning letter to more severe civil and criminal sanctions. Our failure to comply with applicable requirements could lead to an enforcement action that may have an adverse effect on our financial condition and results of operations.

***If our manufacturing facilities do not meet Federal, state or foreign country manufacturing standards, we may be required to temporarily cease all or part of our manufacturing operations, which would result in product delivery delays and negatively impact revenue.***

Our manufacturing facilities are subject to periodic inspection by regulatory authorities and our operations will continue to be regulated by the FDA for compliance with Good Manufacturing Practice requirements contained in the quality systems regulations. We are also required to comply with International Organization for Standardization, or ISO, quality system standards in order to produce products for sale in Europe. If we