IsoRay, Inc.
Form 424B5
March 23, 2007

Filed pursuant to
Rule 424(b)(5)
File No. 333-140246

PROSPECTUS SUPPLEMENT
(To Prospectus dated January 26, 2007)

4,000,000 Shares
800,000 Warrants

Common Stock

We are offering all of the 4,000,000 shares of common stock and warrants to purchase 800,000 shares of common stock offered by this prospectus supplement. We will sell our common stock and warrants to investors at the negotiated price of $20.00 per five shares of common stock. Each purchaser of our common stock will receive a warrant to purchase one share of our common stock at an exercise price of $5.00 per share for each five shares of our common stock they purchase in the offering. The warrants are immediately exercisable. For a more detailed description of our warrants, see the section entitled "Description of Warrants" beginning on page S-19. For a more detailed description of our common stock, see the section entitled "Description of Capital Stock" beginning on page 3 of the accompanying prospectus.

The warrants will not be listed on any securities exchange or market. Our common stock is traded on the Over the Counter Bulletin Board under the symbol “ISRY.OB.” On March 19, 2007, the last reported sales price of our common stock on the Over the Counter Bulletin Board was $4.47 per share.

Investing in our common stock involves a high degree of risk. Before buying any shares, you should read the discussion of material risks of investing in our common stock referred to under the heading “Risk Factors” beginning on page S-7 of this prospectus supplement.

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

	Per share	Total
Public offering price	$ 4.00	$ 16,000,000
Placement agent fees [(1)]	$ 0.24	$ 960,000
Proceeds, before expenses, to us	$ 3.76	$ 15,040,000

(1) Excludes that portion of the placement agents' fees payable in warrants. See "Plan of Distribution."

In connection with this offering, we will pay fees to the placement agents as set forth under “Plan of Distribution.” We have entered into an Escrow Agreement with the placement agents that provides for a minimum offering amount of $15 million in both escrowed funds and direct funding. Because the minimum offering amount required as a condition to closing in this offering is less than the full amount being offered, the placement agent fees and net proceeds to us, if any, in this offering may be less than the maximum offering amounts set forth above. Delivery of the shares and warrants will be made on or about March 22, 2007.

Placement Agents

Punk, Ziegel & Company **Maxim Group LLC**

The date of this prospectus supplement is March 21, 2007.

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ABOUT THIS PROSPECTUS

A registration statement on Form S-3 (File no. 333-140246) utilizing a shelf registration process relating to the securities described in this prospectus supplement has been filed with the Securities and Exchange Commission, or the SEC, and was declared effective on February 15, 2007. Under this shelf registration process, of which this offering is a part, we may, from time to time, sell up to $20,000,000 of common stock and other securities.

This document is in two parts. The first part is this prospectus supplement, which describes the terms of this offering of our common stock and warrants and also adds, updates and changes information contained in the accompanying prospectus and the documents incorporated by reference. The second part is the accompanying prospectus, which gives more general information, some of which may not apply to this offering of our common stock and warrants. To the extent the information contained in this prospectus supplement differs or varies from the information contained in the accompanying prospectus or any document filed prior to the date of this prospectus supplement and incorporated by reference, the information in this prospectus supplement will control.

You should rely only on the information contained in or incorporated by reference into this prospectus supplement and the accompanying prospectus. We have not, and the placement agents have not, authorized anyone to provide you with information that is different. This prospectus supplement is not an offer to sell or solicitation of an offer to buy these shares of common stock and warrants in any circumstances under which

the offer or solicitation is unlawful. You should not assume that the information we have included in this prospectus supplement or the accompanying prospectus is accurate as of any date other than the date of this prospectus supplement or the accompanying prospectus, respectively, or that any information we have incorporated by reference is accurate as of any date other than the date of the document incorporated by reference, regardless of the time of delivery of this prospectus supplement or of any shares of our common stock and warrants. It is important for you to read and consider all information contained in this prospectus supplement and the accompanying prospectus, including the documents incorporated by reference herein and therein, in making your investment decision. You should also read and consider the information in the documents we have referred you to in "Incorporation of Certain Information by Reference" and "Where You Can Find More Information" in this prospectus supplement.

SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

In addition to the other information contained or incorporated by reference in this prospectus supplement and accompanying prospectus, you should carefully consider the risk factors contained in this prospectus supplement when evaluating an investment in our common stock and warrants. This prospectus supplement and accompanying prospectus and the documents incorporated by reference into this prospectus supplement and accompanying prospectus include “forward-looking statements”, which include all statements other than statements of historical fact, including but not limited to:

- any projections of earnings, revenues or other financial items;
- any statements of the plans and objectives of management for future operations;
- any statements concerning proposed new products or services;
- any statements regarding future operations, plans, regulatory filings or approvals;
- any statements concerning proposed new products or services, any statements regarding pending or future mergers or acquisitions; and
- any statements regarding future economic conditions or performance, and any statement of assumptions underlying any of the foregoing.

In some cases, forward-looking statements can be identified by the use of terminology such as “may”, “will”, “expects”, “plans”, “anticipates”, “estimates”, “potential”, or “continue” or the negative thereof or other comparable terminology. There c be no assurance that such expectations or any of the forward-looking statements will prove to be correct, and actual results could differ materially from these projected or assumed in the forward-looking statements. Our future financial condition and results of operations, as well as any forward-looking statements, are subject to inherent risks and uncertainties, including, but not limited to, the risk factors set forth in this prospectus supplement, or incorporated by reference herein. All forward-looking statements and reasons why results may differ included in this prospectus supplement are made as of the date hereof, and we assume no obligation to update any such forward-looking statement or reason why actual results might differ.

This prospectus supplement and the accompanying prospectus, contains and incorporates by reference market data, industry statistics and other data that have been obtained from, or compiled from, information made available by third parties. We have not independently verified their data.

PROSPECTUS SUPPLEMENT SUMMARY

This summary highlights selected information appearing elsewhere or incorporated by reference in this prospectus supplement and accompanying prospectus and may not contain all of the information that is important to you. This prospectus supplement and the accompanying prospectus include or incorporate by reference information about the shares and warrants we are offering as well as information regarding our business and detailed financial data. You should read this prospectus supplement and the accompanying prospectus in their entirety, including the information incorporated by reference in this prospectus supplement and the accompanying prospectus.

Unless the context requires otherwise, the words "IsoRay," "we," "company," "us" and "our" refer to IsoRay, Inc. and its subsidiaries.

BUSINESS OVERVIEW

IsoRay is utilizing its patented radioisotope technology, experienced chemists and engineers, and management team to create a major therapeutic medical isotope and medical device company with a goal of providing improved patient outcomes in the treatment of solid tumor cancers. IsoRay began production and sales of its Food and Drug Administration ("FDA") cleared product, the IsoRay ^{131}Cs brachytherapy seed, in October 2004 for the treatment of prostate cancer. Cesium-131 could also enable meaningful penetration in other solid tumor applications such as breast, lung, liver, brain and pancreatic cancer, expanding the total available market opportunity. Management believes its technology will allow it to capture a leadership position in an expanded brachytherapy market. The more clinically beneficial characteristics of the Cesium-131 (Cs-131 or ^{131}Cs) isotope are expected to decrease radiation exposure to the patient and reduce the severity and duration of side effects, while treating cancer cells as effectively, if not more so than other isotopes used in seed brachytherapy.

Brachytherapy seeds are small devices used in an internal radiation therapy procedure. In recent years the procedure has become one of the primary treatments for prostate cancer and is now used more often than surgical removal of the prostate. The brachytherapy procedure places radioactive seeds as close as possible to (in or near) the cancer tumor (the word "brachytherapy" means close therapy). The seeds deliver therapeutic radiation by killing the tumor cells and cells located in the immediate vicinity of the tumor while minimizing exposure to adjacent healthy tissue. This allows doctors to administer a higher dose of radiation at one time than is possible with external beam radiation. Each seed contains a radioisotope sealed within a welded titanium capsule. Approximately 70 to 120 seeds are permanently implanted in the prostate in a 45-minute outpatient procedure. The isotope decays over time and the seeds become inert. The seeds may be used as a primary treatment or, in conjunction with other treatment modalities such as external beam radiation therapy, chemotherapy, or as treatment for residual disease after excision of primary tumors.

Management believes that the IsoRay ^{131}Cs seed represents the first major advancement in brachytherapy technology in over 18 years with attributes that could make it the long term "seed of choice" for internal radiation procedures. The ^{131}Cs seed has FDA clearance for treatment of malignant disease (e.g. cancers of the head and neck, brain, liver, lung, breast, prostate, etc.) and may be used in surface, interstitial, and intracavity applications for tumors with known radiosensitivity.

The ^{131}Cs isotope appears to have specific advantages for treating cancer over Iodine-125 (I-125 or ^{125}I) and Palladium-103 (Pd-103 or ^{103}Pd), the other isotopes commonly used in brachytherapy procedures. IsoRay believes that the short half-life and higher dose rate characteristics of ^{131}Cs will expand industry applications and facilitate meaningful penetration into the treatment of other forms of cancer such as breast cancer. The shorter half-life of 9.7 days for ^{131}Cs (versus 17 days for ^{103}Pd and 60 days for ^{125}I) mitigates negative effects of long radiation periods on healthy tissue and is believed to reduce the duration of certain side effects. The higher initial dose rate is believed to be more effective on fast growing cancers by aggressively attacking cancer cells and disrupting cancer cell

re-population cycles. The characteristics of ^{131}Cs may result in the use of 10-30% fewer seeds per procedure compared to Pd-103, thereby reducing the total physical radiation dose to the patient and reducing the costs of the procedure for both third-party payers and the patient.

IsoRay and its predecessor companies have accomplished the following key milestones:

- Treated 900th patient (February 2007);
- Raised over $25.0 M in debt and equity funding (September 2003 - January 2007)
- Opened a new manufacturing and production facility (October 2005);
- Deployed a direct sales force to the market (July 2004 - July 2005);
- Developed a treatment protocol for prostate cancer with a leading oncologist (January 2005);
- Treated the first patient (October 2004);
- Commenced production of the ^{131}Cs seed (August 2004);
- Filed five additional patent applications for the ^{131}Cs process (November 2003 - August 2004);
- Obtained a Nuclear Regulatory Commission Sealed Source and Device Registration required by the Washington State Department of Health and the FDA (September 2004);
- Received a Radioactive Materials License from the Washington State Department of Health (July 2004);
- Implemented an ISO-9000 Quality Management System and production operating procedures (under continuing development);
- Signed a Commercial Work for Others Agreement between Battelle (manager of the Pacific Northwest National Laboratory or PNNL) and IsoRay, allowing initial production of seeds through 2006 at PNNL (April 2004);
- Obtained favorable Medicare reimbursement codes for the Cs-131 brachytherapy seed (November 2003);
- Obtained FDA 510(k) clearance to market the first product: the ^{131}Cs brachytherapy seed (March 2003);
- Completed initial radioactive seed production, design verification, computer modeling of the radiation profile, and actual dosimetric data compiled by the National Institute of Standards and Technology and PNNL (October 2002); and
- Obtained initial patent for ^{131}Cs isotope separation and purification (May 2000).

Our Strategy

The key elements of IsoRay's strategy include:

- *Continue to introduce the IsoRay ^{131}Cs seed into the U.S. brachytherapy market*. Utilizing a direct sales organization and selected channel partners, IsoRay intends to capture a leadership position by expanding overall use of the brachytherapy procedure for prostate cancer, capturing much of the incremental market growth and taking market share from existing competitors.
- *Create a state-of-the-art manufacturing process*. IsoRay has constructed a state-of-the-art manufacturing facility in Richland, Washington in its leased facility, to implement our proprietary manufacturing process which is designed to improve profit margins and ensure quality control. IsoRay may construct a permanent manufacturing facility in another state. Working with leading scientists, IsoRay intends to design and create a proprietary separation process to manufacture enriched barium, a key source material for ^{131}Cs, to ensure adequate supply and greater manufacturing efficiencies.
- *Introduce Cesium-131 therapies for other cancers*. IsoRay intends to partner with other companies to develop the appropriate delivery technology and therapeutic delivery systems for treatment of other solid tumors such as breast, lung, liver, pancreas, neck, and brain cancer. IsoRay's management believes that the first major opportunities may be for the use of Cesium-131 in adjunct therapy for the treatment of residual lung and breast cancers.
- *Support clinical research and sustained product development*. The Company plans to structure and support clinical studies on the therapeutic benefits of Cs-131 for the treatment of solid tumors and other patient benefits. We are and intend to continue to support clinical studies with several leading radiation oncologists to clinically document patient outcomes, provide support for our product claims and compare the performance of our seeds to competing seeds. IsoRay plans to sustain long-term growth by implementing research and development programs with leading medical institutions in the U.S. to identify and develop other applications for IsoRay's core radioisotope technology.

Cs-131 Manufacturing Process

Cs-131 is a radioactive isotope that can be produced by the neutron bombardment of Barium-130. When Ba-130 is put into a nuclear reactor it becomes Ba-131, the radioactive material that is the parent isotope of Cs-131. The overall process includes the following:

- *Isotope Generation*. The radioactive isotope Cs-131 is normally produced by placing a quantity of stable non-radioactive barium (ideally pure Ba-130) into the neutron flux of a nuclear reactor. The irradiation process converts a small fraction of this material into a radioactive form of barium (Ba-131). The Ba-131 decays by electron capture to the radioactive isotope of interest (Cs-131). Due to the short half-life of both the Ba-131 and Cs-131 isotopes, potential suppliers must be capable of removing irradiated materials from the reactor core on a routine basis for subsequent processing to produce ultra-pure Cs-131. The Company has identified more than five reactors facilities in the U.S., Europe and the former Soviet Union that are capable of meeting these requirements. As of November 10, 2006, IsoRay had agreements in place with three suppliers of irradiated Ba-131 or Cs-131. The Company's agreement with Russia's Institute of Nuclear Materials (which commenced as of August 25, 2005 and ends August 25, 2012) allows the Company to purchase irradiated Ba-131 for $300.00 per Curie of the isotope. The projected value of the agreement as indicated therein over its term is $30,000,000 with $300,000 worth of isotope projected therein to be delivered in the first full year of production, although neither of these amounts are obligations to purchase any given quantity of the isotopes in a particular time period. Through September 30, 2006, the Company had paid approximately $202,000 to the Institute of Nuclear Materials. On October 6, 2006, our operating subsidiary, IsoRay Medical, Inc. ("Medical"), entered into a Contract with FSUE "SSE - Research Institute of Atomic Reactors ("RIAR") in Russia. The Contract provides for delivery to Medical of purified Cs-131 isotope, which is used by Medical to produce its proprietary Cs-131 brachytherapy seed used in the treatment of prostate cancer. The total stated value of the Contract over its term, which expires on May 1, 2014, is $6,300,000. Delivery of the isotope is scheduled to commence in October 2007 and continue through December 2013, upon submission of written orders by Medical forty-five days in advance of the planned date of delivery. Medical also entered into an Agreement for Exclusive Rights to Buy on October 6, 2006 with RIAR. This Agreement gives Medical the exclusive right to purchase the Cs-131 isotope produced by RIAR for a period of seven years, or through October 6, 2013. In addition, the Company is engaged in the development of a barium enrichment device that, if successful, should reduce the cost of producing Cs-131 while maintaining the purity and consistency required in the end product.
- *Isotope Separation and Purification*. Upon irradiation of the barium feedstock, the Ba-131 begins decaying to Cs-131. At pre-determined intervals the Cs-131 produced is separated from the barium feedstock and purified using a proprietary radiochemical separations process (patent applied for). Due to the high-energy decay of Ba-131, this process is performed under stringent radiological controls in a highly shielded isolator or "hot cell" using remote manipulators. After separating Cs-131 from the energetic Ba-131, subsequent seed processing may be performed in locally shielded fume hoods or glove boxes. If enriched barium feedstock is used, the residual barium remaining after subsequent Cs-131 separation cycles ("milkings") will be recycled back to the reactor facility for re-irradiation. This material will be recycled as many times as economically feasible, which should make the process more cost effective. As an alternative to performing the Cs-131 separation in our own facilities, IsoRay may enter into agreements with other entities to supply "raw" Cs-131 by performing the initial barium/cesium separation at their facilities, followed by final purification at IsoRay's facility.
- *Internal Seed Core Technology*. The purified Cs-131 isotope is incorporated into an internal assembly that contains a binder, spacer and a gold X-ray marker. This internal core assembly is subsequently inserted into a titanium case. The dimensional tolerance for each material is extremely important. Several carrier materials and placement methods have been evaluated, and through a process of elimination, we have developed favored materials and methods during our laboratory testing. The equipment necessary to produce the internal core includes accurate cutting and gauging devices, isotope incorporation vessels, reaction condition stabilization and monitoring systems,

and tools for placing the core into the titanium tubing prior to seed welding.

- *Seed Welding.* Following production of the internal core and placement into the titanium capsule, each seed is laser welded to produce a sealed radioactive source and biocompatible medical device. This manufacturing technology requires: accurate placement of seed components with respect to the welding head, accurate control of welding parameters to ensure uniform temperature and depth control of the weld, quality control assessment of the weld integrity, and removal of the finished product for downstream processing or rejection of unacceptable materials to waste. Inspection systems are capable of identifying and classifying these variations for quality control and to ensure low scrap rates. Finally, the rapid placement and removal of components from the welding zone affects overall product throughput.
- *Quality Control*. We have established procedures and controls to meet all FDA and ISO 9001:2000 Quality Standards. Product quality and reliability will be secured by utilizing multiple sources of irradiation services, feedstock material, and other seed manufacturing components. An intensive production line preventive maintenance and spare parts program will be implemented. Also, an ongoing training program will be established for customer service to ensure that all regulatory requirements for the FDA, DOT and applicable nuclear radiation and health authorities are fulfilled.

Additional Growth Opportunities

The Cs-131 isotope has the performance characteristics to be a technological platform for sustained long-term growth. The most immediate opportunities are introducing Cs-131 to Canada, Europe and other international markets, introducing Cs-131-based therapies for other forms of solid tumors focusing first on breast tumors, and through the marketing of other radioactive isotopes. These growth initiatives are in the early stages of planning and we believe may be significant incremental opportunities.

The Company plans to introduce Cs-131 initially into Europe and later into other international markets through partnerships and strategic alliances with channel partners for manufacturing and distribution. Another advantage of the Cs-131 isotope is its potential applicability to other cancers and other diseases. Cs-131 has FDA clearance to be used for treatments for a broad spectrum of cancers including breast, brain, lung, and liver cancer, and the Company believes that a major opportunity exists as an adjunct therapy for the treatment of breast cancer. Preliminary discussions have begun with prominent physicians regarding the use of Cs-131-based therapies for the treatment of lung, pancreatic and brain cancer. There is the opportunity to develop and market other radioactive isotopes to the US market, and to market the Cs-131 isotope itself, separate from its use in our seeds. The Company is also in the preliminary stages of exploring alternate methods of delivering our isotopes to various organs of the body, as it may be advantageous to use delivery methods other than a titanium-encapsulated seed to deliver radiation to certain organs.

OUR CORPORATE INFORMATION

Our principal executive offices are located at 350 Hills Street, Suite 106, Richland, Washington 99354, and our telephone number is (509) 375-1202. We maintain an Internet website at *www.isoray.com*. We have not incorporated by reference into this prospectus supplement or the accompanying prospectus the information in, or that can be accessed through, our website, and you should not consider it to be a part of this prospectus supplement or the accompanying prospectus.

Our independent auditors have expressed doubt about our ability to continue as a going concern due to ongoing operating losses, which our management expects to continue for the foreseeable future. Because our revenues from sales of our ^{131}Cs seed are insufficient to fund our operations at this time, we will need financing or growth of our revenues to meet our expenses. Management believes that this offering, if fully sold, will provide sufficient capital to fund operations for the next twelve months.

Although our predecessor operating company was organized in 1998, IsoRay, Inc. was incorporated in 1983 in Minnesota and operated under the name Century Park Pictures Corporation until the merger with IsoRay Medical, Inc. on July 28, 2005.

THE OFFERING

The following is a brief summary of some of the terms of the offering and is qualified in its entirety by reference to the more detailed information appearing elsewhere in this prospectus supplement and the accompanying prospectus. For a more complete description of the terms of our common stock, see the "Description of Capital Stock" section in the accompanying prospectus. For a more complete description of the warrants, see the "Description of Warrants" section in this prospectus supplement.

Securities We Are Offering	4,000,000 shares of common stock Warrants to purchase 800,000 shares of common stock
Common Stock To Be Outstanding After This Offering	21,059,462 shares
Description of Warrants	Each purchaser of five shares of our common stock will receive a warrant to purchase one share of common stock. The warrants are immediately exercisable at an exercise price of $5 per share of our common stock and have a four year term. See "Description of Warrants" in this prospectus supplement.
Use of Proceeds	We estimate that the net proceeds to us from this offering after expenses will be approximately $14,872,860 million. We intend to use the net proceeds from the sale of our shares of common stock offered by this prospectus supplement for general corporate purposes, including without limitation, capital expenditures and working capital needs. Proceeds from the exercise of the warrants being sold through this offering are estimated to be $4,000,000, and may be received by the Company at any time following the offering depending on when the warrants are exercised by investors. These proceeds when received will be used for general corporate purposes, including without limitation, capital expenditures and working capital needs. See "Use of Proceeds."
Market for the Warrants	There is no established public trading market for the warrants, and we do not expect a market to develop. In addition, we do not intend to apply for listing of the warrants on any securities exchange.
Risk Factors	

	See “Risk Factors” and other information included in this prospectus supplement, or incorporated herein by reference, for a discussion of factors you should carefully consider before deciding to invest in the common stock, the warrants or our shares of common stock issuable upon exercise of the warrants.
OTC Bulletin Board Symbol	ISRY.OB

Except as otherwise provided for herein, the information contained in this prospectus supplement assumes (i) the sale of all of the shares and warrants offered hereby and (ii) that none of the warrants sold hereunder have been exercised.

The number of shares of our common stock outstanding after this offering is based on approximately 17,059,462 shares outstanding as of March 6, 2007 and excludes:

- 4,157,402 shares of common stock issuable upon the exercise of warrants outstanding at March 6, 2007;
- 59,065 shares of common stock issuable upon the conversion of preferred stock outstanding at March 6, 2007;
- 3,088,439 shares of common stock issuable upon the exercise of options outstanding at March 6, 2007;
- 85,542 shares of common stock issuable upon the conversion of convertible debentures outstanding at March 6, 2007;
- 911,778 shares of common stock reserved for future stock option grants as of March 6, 2007 under our equity compensation plans; and
- 800,000 shares of common stock issuable upon the exercise of the warrants included in this offering at an exercise price of $5.00 per share.

RISK FACTORS

Investing in our common stock involves a high degree of risk. You should carefully consider the risks listed below and other information included and incorporated by reference in this prospectus supplement and accompanying prospectus. There may also be risks of which we are currently unaware, or that we currently regard as immaterial based on the information available to us that later prove to be material. If any of these risks occur, our business, operating results and financial condition could be seriously harmed, the trading price of our common stock could decline, and you could lose some or all of your investment.

Risks Related to this Offering

There Is A Limited Market For Our Common Stock. Currently only a limited trading market exists for our common stock. Our common stock currently trades on the Over-The-Counter Bulletin Board, a market with limited liquidity and minimal listing standards, under the symbol "ISRY.OB." While management has applied for listing on the American Stock Exchange, the Company is uncertain as to when its application will be approved, if at all, assuming it continues to meet the applicable listing requirements. Any broker-dealer that makes a market in our stock or other person that buys or sells our stock could have a significant influence over its price at any given time. Shareholders may experience more difficulty in attempting to sell their shares than if the shares were listed on a national stock exchange or quoted on the NASDAQ Stock Market. We cannot assure our shareholders that a market for our stock will be sustained. There is no assurance that our shares will have any greater liquidity than shares that do not trade on a public market.

Our Stock Price Is Likely To Be Volatile. There is generally significant volatility in the market prices and limited liquidity of securities of early stage companies, and particularly of early stage medical product companies. Contributing to this volatility are various events that can affect our stock price in a positive or negative manner. These events include, but are not limited to: governmental approvals, refusals to approve, regulations or actions; market acceptance and sales growth of our products; litigation involving the Company or our industry; developments or disputes concerning our patents or other proprietary rights; changes in the structure of healthcare payment systems; departure of key personnel; future sales of our securities; fluctuations in our financial results or those of companies that are perceived to be similar to us; investors' general perception of us; and general economic, industry and market conditions. If any of these events occur, it could cause our stock price to fall.

Our Common Stock May be Subject To Penny Stock Regulation. So long as our shares' market price is below $5.00 per share, our shares are subject to the provisions of Section 15(g) and Rule 15g-9 of the Securities Exchange Act of 1934, as amended, commonly referred to as the "penny stock" rule. Section 15(g) sets forth certain requirements for transactions in penny stocks and Rule 15g-9(d)(1) incorporates the definition of penny stock as that used in Rule 3a51-1 of the Exchange Act. The SEC generally defines penny stock to be any equity security that has a market price less than $5.00 per share, subject to certain exceptions. Rule 3a51-1 provides that any equity security is considered to be penny stock unless that security is: registered and traded on a national securities exchange meeting specified criteria set by the SEC; authorized for quotation on The NASDAQ Stock Market; issued by a registered investment company; excluded from the definition on the basis of price (at least $5.00 per share) or the Company's net tangible assets; or exempted from the definition by the SEC. As our shares may be deemed to be "penny stocks", trading in the shares may be subject to additional sales practice requirements on broker-dealers who sell penny stocks to persons other than established customers and accredited investors. This classification also could make our shares ineligible for market coverage by many established brokerage firms.

There Is No Public Market For The Warrants To Purchase Common Stock In This Offering. There is no established public trading market for the warrants being offered in this offering, and we do not expect a market to develop. In

addition, we do not intend to apply for listing the warrants on any securities exchange or for quotation on the any securities market. Without an active market, the liquidity of the warrants will be limited.

Since We Have Broad Discretion In How We Use The Proceeds From This Offering, We May Use The Proceeds In Ways In Which You Disagree. Our management will have significant flexibility in applying the net proceeds of this offering. You will be relying on the judgment of our management with regard to the use of these net proceeds, and you will not have the opportunity, as part of your investment decision, to assess whether the proceeds are being used appropriately. It is possible that the net proceeds will be invested in a way that does not yield a favorable, or any, return for our company. The failure of our management to use such funds effectively could have a material adverse effect on our business, financial condition, operating results and cash flow.

Purchasers Of The Shares And Purchasers Of The Warrants Who Convert Their Warrants Will Incur Immediate Dilution. Purchasers of shares of common stock in this offering and purchasers who convert their warrants into shares of common stock will experience immediate and substantial dilution because the purchase price of the common stock and the per share exercise price of the warrants will be higher than the net tangible book value per share of the outstanding common stock immediately after this offering. In addition, purchasers will experience dilution, which may be substantial, when we issue additional shares of common stock that we are permitted or required to issue under options, warrants, our stock option plans or other employee or director compensation plans.

Future Sales By Shareholders, Or The Perception That Such Sales May Occur, May Depress The Price Of Our Common Stock. The sale or availability for sale of substantial amounts of our shares in the public market, including shares covered by this prospectus and shares issuable upon exercise or conversion of outstanding preferred stock and derivative securities, or the perception that such sales could occur, could adversely affect the market price of our common stock and also could impair our ability to raise capital through future offerings of our shares. As of March 6, 2007, we had 17,059,462 outstanding shares of common stock, and the following additional shares were reserved for issuance: 3,088,439 shares upon exercise of outstanding options, 4,157,402 shares upon exercise of outstanding warrants, 59,065 shares upon conversion of preferred stock, and 85,542 shares upon conversion of convertible debentures. On the effective date of this prospectus supplement, a total of 23,906,759 shares of common stock (including 800,000 shares issuable upon exercise of warrants registered hereunder and including not only shares registered through this prospectus but also the 13,701,990 shares registered through our Form SB-2 registration statements initially filed on November 10, 2005 and October 16, 2006, the 4,800,000 shares registered through our Form S-8 registration statements initially filed on August 19, 2005 and August 18, 2006, and 604,769 shares eligible for resale under Rule 144(k)) will be eligible for sale in the public market. As additional shares of our common stock become available for resale in the public market, the price of our common stock may decrease due to the additional shares in the market. Any decline in the price of our common stock may encourage short sales, which could place further downward pressure on the price of our common stock and may impair our ability to raise additional capital through the sale of equity securities.

The Issuance Of Shares Upon Conversion Or Exercise Of The Preferred Stock And Derivative Securities May Cause Immediate And Substantial Dilution To Our Existing Shareholders. The issuance of shares upon conversion of the preferred stock and convertible debentures and the exercise of warrants and options may result in substantial dilution to the interests of other shareholders, including purchasers in this offering, since the selling shareholders may ultimately convert or exercise and sell all or a portion of the full amount issuable upon conversion or exercise. If all derivative securities being registered through this prospectus and through our other currently effective registration statements were converted or exercised into shares of common stock, there would be an additional 9,102,216 shares of common stock outstanding as a result. The issuance of these shares will have the effect of further diluting the proportionate equity interest and voting power of holders of our common stock, including investors in this offering.

We Do Not Expect To Pay Any Dividends For The Foreseeable Future. We do not anticipate paying any dividends to our shareholders for the foreseeable future. The terms of certain of our and our subsidiary's outstanding indebtedness substantially restrict the ability of either company to pay dividends. Accordingly, investors must be prepared to rely on sales of their common stock after price appreciation to earn an investment return, which may never occur. Investors seeking cash dividends should not purchase our common stock. Any determination to pay dividends in the future will be made at the discretion of our Board of Directors and will depend on our results of operations, financial conditions, contractual restrictions, restrictions imposed by applicable law and other factors our Board deems relevant.

Certain Provisions Of Minnesota Law And Our Charter Documents Have An Anti-Takeover Effect. There exist certain mechanisms under Minnesota law and our charter documents that may delay, defer or prevent a change of control. Anti-takeover provisions of our articles of incorporation, bylaws and Minnesota law could diminish the opportunity for shareholders to participate in acquisition proposals at a price above the then-current market price of our common stock. For example, while we have no present plans to issue any preferred stock, our Board of Directors, without further shareholder approval, may issue shares of undesignated preferred stock and fix the powers, preferences, rights and limitations of such class or series, which could adversely affect the voting power of your shares. In addition, our bylaws provide for an advance notice procedure for nomination of candidates to our Board of Directors that could have the effect of delaying, deterring or preventing a change in control. Further, as a Minnesota corporation, we are subject to provisions of the Minnesota Business Corporation Act, or MBCA, regarding "business combinations," which can deter attempted takeovers in certain situations. Pursuant to the terms of a shareholder rights plan adopted in February 2007, each outstanding share of common stock has one attached right. The rights will cause substantial dilution of the ownership of a person or group that attempts to acquire the Company on terms not approved by the Board of Directors and may have the effect of deterring hostile takeover attempts. The effect of these anti-takeover provisions may be to deter business combination transactions not approved by our Board of Directors, including acquisitions that may offer a premium over the market price to some or all stockholders. We may, in the future, consider adopting additional anti-takeover measures. The authority of our Board to issue undesignated preferred or other capital stock and the anti-takeover provisions of the MBCA, as well as other current and any future anti-takeover measures adopted by us, may, in certain circumstances, delay, deter or prevent takeover attempts and other changes in control of the company not approved by our Board of Directors.

Risks Related To Our Business

Our Independent Accountants Have Expressed Doubt About Our Ability To Continue As A Going Concern And We Only May Have Sufficient Capital To Fund Our Operations For The Next Twelve Months. IsoRay, Inc. has generated material operating losses since inception. We expect to continue to experience net operating losses. Our ability to continue as a going concern is subject to our ability to obtain necessary funding from outside sources, including obtaining additional funding from the sale of our securities, the exercise of our warrants, or obtaining loans and grants from various financial institutions where possible. The substantial doubt expressed by our auditors about our ability to continue as a going concern increases the difficulty in meeting such goals. However, following the sale of this offering, management believes that we will have sufficient proceeds to fund our operations for the next twelve months. There can be no assurance that the Company will attain profitability.

Our Revenues Depend Upon One Product. Until such time as we develop additional products, our revenues depend upon the successful production, marketing, and sales of the IsoRay ^{131}Cs seed. The rate and level of market acceptance of this product may vary depending on the perception by physicians and other members of the healthcare community of its safety and efficacy as compared to that of competing products, if any; the clinical outcomes of the patients treated; the effectiveness of our sales and marketing efforts in the United States and Europe; any unfavorable publicity concerning our product or similar products; our product's price relative to other products or competing treatments; any decrease in current reimbursement rates from the Centers for Medicare and Medicaid Services or third-party payers; regulatory developments related to the manufacture or continued use of the product; availability of sufficient supplies of enriched barium for ^{131}Cs seed production; ability to produce sufficient quantities of this product; and the ability of physicians to properly utilize the device and avoid excessive levels of radiation to patients. Because of our reliance on this product as the sole source of our revenue, any material adverse developments with respect to the commercialization of this product may cause us to continue to incur losses rather than profits in the future.

Although Approved To Treat Any Malignant Tissue, Our Sole Product Is Currently Used To Treat One Type Of Cancer. As of the date of this prospectus supplement, the IsoRay ^{131}Cs seed is used exclusively for the treatment of

prostate cancer. We believe the ^{131}Cs seed will be used to treat cancers of other sites as well, as is currently the case with our competitors' ^{125}I and ^{103}Pd seeds. However, we believe that clinical data gathered by select groups of physicians under treatment protocols specific to other organs will be needed prior to widespread acceptance of our product for treating other cancer sites. If our current and future products do not become accepted in treating cancers of other sites, our sales will depend solely on treatment of prostate cancer and we will require ever increasing market share to increase revenues.

The Lease On Our Production Facility Ends In October 2007. The Company's current production facility lease ends in October 2007. While the landlord has agreed to work with the Company to minimize production disruptions, the landlord has indicated that it does not intend to enter into a long-term leasing agreement with the Company. Management is in the final stages of negotiation to lease space for a new production facility. Once the new lease is signed, the Company will begin to obtain the necessary permits and licenses and to make the necessary leasehold improvements. Management believes that the Company will be able to obtain the necessary permits for the new facility in a timely manner that will not cause delays in the leasehold improvements construction schedule. This new facility is expected to be operational at the end of calendar year 2007. Management believes that the new production facility lease currently being negotiated will be able to accommodate the Company's anticipated future growth for several years. The Company continues to use PNNL to provide third-party assay of its products, but has otherwise vacated PNNL facilities. Management believes that if the Company is unable to obtain the new lease, the necessary permits, or finish the leasehold improvements before having to vacate the present manufacturing facility, that a temporary manufacturing facility is available and could be used although production capacity and scheduling flexibility would be limited.

We Have Limited Data On The Clinical Performance Of ^{131}Cs. As of February 15, 2007, the IsoRay ^{131}Cs seed had been implanted in over 900 patients. While this number of patients may prevent us from drawing statistically significant conclusions, the side effects experienced by these patients were less severe than side effects observed in seed brachytherapy with ^{125}I and ^{103}Pd and in other forms of treatment such as radical prostatectomy. These early results indicate that the onset of side effects generally occurs between one and three weeks post-implant, and the side effects are resolved between five and eight weeks post-implant, indicating that, at least for these initial patients, side effects resolved more quickly than the side effects that occur with competing seeds or with other forms of treatment. These limited findings support management's belief that the^{131}Cs seed will result in less severe side effects than competing treatments, but we may have to gather data on outcomes from additional patients before we can establish statistically valid conclusions regarding the incidence of side effects from our seeds.

We Will Need To Raise Additional Capital. The hiring of upper level executives and increasing production requirements significantly increased IsoRay's monthly cash requirements since August 2005. Monthly operating cash requirements as of February 1, 2007 were approximately $700,000, excluding capitalized items. Capital expenditures typically include the purchase or capital lease of equipment, with a life-expectancy of more than 12 months, costing in excess of $2,500, which would include among other things: analytical systems, improved packaging for final products and, new production systems which increase manufacturing throughput. Ongoing requirements to meet greater payroll obligations coupled with legal and accounting fees associated with our public reporting status have resulted in greater amounts of short-term cash demands. We will also need substantial funds to complete the development, manufacturing, and marketing of our current and future products. If we raise the full net approximately $15 million being offered hereunder, management believes that we will have sufficient capital to fund our operations for the next twelve months.

We will seek to raise any needed additional capital through not only warrant solicitation, public and private offerings of equity and debt securities, but also collaborative arrangements, strategic alliances, or from other sources. We may be unable to raise additional capital on commercially acceptable terms, if at all, and if we raise capital through additional equity financing, existing shareholders may have their ownership interests diluted. Our failure to be able to generate adequate funds from operations or from additional sources would harm our business, requiring us to scale back our operations, potentially significantly, or delay the implementation of our business strategy.

The Passage Of Initiative 297 In Washington May Result In The Relocation Of Our Manufacturing Operations. Washington voters approved Initiative 297 in late 2004, which may impose restrictions on sites at which mixed radioactive and hazardous wastes are generated and stored. IsoRay has been assured by the Attorney General's office of the State of Washington that medical isotopes are not included in Initiative 297 and that manufacturing in IsoRay's

new production facility would not be interrupted, but there is no assurance that this interpretation of Initiative 297 by the Attorney General's Office will continue to exclude medical isotopes. In June 2006, a U.S. District Court judge ruled that Initiative 297 was unconstitutional in its entirety. However, the State of Washington has indicated that it may appeal the decision. If this decision is overturned and Initiative 297 is enforced it could impact our ability to manufacture our seeds in the State of Washington.

Management believes that we will be able to continue our manufacturing operations in the State of Washington for the foreseeable future. In the event Initiative 297 is enforced against us, management may consider establishing an alternate manufacturing facility outside of Washington, and we may consider moving all or part of our operations to another state even if Initiative 297 is not enforced against us.

We Have Limited Manufacturing Experience And May Not Be Able To Meet Demand. The existing management team and staff of IsoRay have experience primarily in research and development of products and our experience in commercial-scale manufacturing is limited. We began commercial production of the ^{131}Cs seed in the fourth quarter of 2004. Although our management team has significant radiochemistry experience, there is a possibility that production demands may result in challenges that may be too difficult or expensive to overcome. We have developed and deployed semi-automated laser welding equipment that can produce seeds faster than fully-automated equipment the Company has reviewed that would cost several million dollars to design and fabricate. We believe we will continually find more efficient means of welding the titanium seeds; however, there is a possibility that future demand will outstrip our ability to produce seeds using the semi-automated process. Management believes that the new production facility lease currently being negotiated will be able to accommodate the Company's anticipated future growth for several years. The Company continues to use PNNL to provide third-party assay of its products, but has otherwise vacated PNNL facilities.

We Are Subject To The Risk That Certain Third Parties May Mishandle Our Product. We rely on third parties, such as Federal Express, to deliver our ^{131}Cs seed, and on other third parties, including various radiopharmacies, to package our ^{131}Cs seed in certain specialized packaging forms that, as of the date of this prospectus supplement, we do not provide at our own facilities. We are subject to the risk that these third parties may mishandle our product, which could result in adverse effects, particularly given the radioactive nature of our product. As an example, on January 5, 2006, we were notified by one of our primary customers, Chicago Prostate Cancer Center ("CPCC"), that it would no longer accept ^{131}Cs products from the radiopharmacy exclusively used by us at that time due to quality control concerns. The role of the radiopharmacy is to provide third-party assay, preloading, and sterilization of the ^{131}Cs seeds which are then shipped directly to customers for use in patient implants. We immediately began working to bring these functions in house. On March 28, 2006, CPCC resumed ordering from us.

Our Operating Results Will Be Subject To Significant Fluctuations. Our quarterly revenues, expenses, and operating results are likely to fluctuate significantly in the future. Fluctuation may result from a variety of factors, which are discussed in detail throughout this "Risk Factors" section, including:

- our achievement of product development objectives and milestones;
- demand and pricing for the Company's products;
- effects of aggressive competitors;
- hospital, clinic and physician buying decisions;
- research and development and manufacturing expenses;
- patient outcomes from our therapy;
- physician acceptance of our products;
- government or private healthcare reimbursement policies;
- our manufacturing performance and capacity;
- incidents, if any, that could cause temporary shutdown of our manufacturing facilities;
- the amount and timing of sales orders;
- rate and success of future product approvals;
- timing of FDA clearance, if any, of competitive products and the rate of market penetration of competing products;
- seasonality of purchasing behavior in our market;

- overall economic conditions; and
- the successful introduction or market penetration of alternative therapies.

We Rely Heavily On A Limited Number Of Suppliers. Some materials used in our products are currently available only from a limited number of suppliers. For example, virtually all titanium tubing used in brachytherapy seed manufacture comes from a single source, Accellent Corporation. We currently obtain a key component of our seed core from a single supplier. We do not have formal written agreements with either this key supplier or with Accellent Corporation. Any interruption or delay in the supply of materials required to produce our products could harm our business if we were unable to obtain an alternative supplier or substitute equivalent materials in a cost-effective and timely manner. Over sixty percent (60%) of our cesium is now supplied through the Institute of Nuclear Materials ("INM") located in the former Soviet Union. This percentage will continue to increase as demand for our products increases. Management expects that we will be able to supplement our supply of cesium with deliveries under our recent contract with the Russian Research Institute of Atomic Reactors ("RIAR"), although deliveries have not yet begun under this contract and are now not expected until October 2007. Failure to obtain deliveries of cesium from these sources would have a material adverse effect on seed production and there may be a delay before we could locate alternative suppliers. Additional factors that could cause interruptions or delays in our source of materials include limitations on the availability of raw materials or manufacturing performance experienced by our suppliers and a breakdown in our commercial relations with one or more suppliers. Some of these factors may be completely out of our and our suppliers' control.

Future Production Increases Will Depend on Our Ability to Acquire Larger Quantities of ^{131}Cs and Hire More Employees. IsoRay currently obtains ^{131}Cs through its contract with INM and through reactor irradiation of natural barium and subsequent separation of cesium from the irradiated barium targets. The amount of ^{131}Cs that can be produced from a given reactor source is limited by the power level and volume available within the reactor for irradiating targets. This limitation can be overcome by utilizing barium feedstock that is enriched in the stable isotope ^{130}Ba. However, the number of suppliers of enriched barium is limited and they may be unable to produce this material in sufficient quantities at a reasonable price.

IsoRay has entered into exclusive agreements with the Institute of Nuclear Materials and the Russian Research Institute of Atomic Reactors in Russia to provide ^{131}Cs in quantities sufficient to supply a significant percentage of future demand for this isotope. Delivery of the isotope from the Institute of Nuclear Materials began in January 2006 and delivery of initial quantities of the isotope from RIAR are expected to begin during October 2007. IsoRay believes these suppliers may also provide access to sufficient quantities of enriched barium that may be recycled for use in other reactors to increase the production of ^{131}Cs. Although the agreements provide for supplying ^{131}Cs in significant quantities, there is no assurance that this will result in IsoRay gaining access to a sufficient supply of enriched barium feedstock and if sufficient supplies are attained we will need to increase our manufacturing staff. If we were unable to obtain supplies of isotopes from Russia in the future, our overall supply of cesium and barium would be reduced significantly.

We Are Subject To Uncertainties Regarding Reimbursement For Use Of Our Products. Hospitals and freestanding clinics may be less likely to purchase our products if they cannot be assured of receiving favorable reimbursement for treatments using our products from third-party payers, such as Medicare, Medicaid and private health insurance plans. Currently, Medicare reimburses hospitals, clinics and physicians for the cost of seeds used in brachytherapy procedures on a per seed basis. Historically, private insurers have followed Medicare guidelines in establishing reimbursement rates. However, third-party payers are increasingly challenging the pricing of certain medical services or devices, and we cannot be sure that they will reimburse our customers at levels sufficient for us to maintain favorable sales and price levels for our products. There is no uniform policy on reimbursement among third-party payers, and we can provide no assurance that our products will continue to qualify for reimbursement from all third-party payers or that reimbursement rates will not be reduced. A reduction in or elimination of third-party reimbursement for treatments using our products would likely have a material adverse effect on our revenues.

In 2003, we applied to the Centers for Medicare and Medicaid Services (CMS) and received reimbursement codes for use of our ^{131}Cs seed (HCPCS code C2633 and APC code 2633). Reimbursement amounts are reviewed and revised periodically on an ad hoc basis. Adjustments could be made to these reimbursement amounts or policies, which could result in reduced reimbursement for brachytherapy services, which could negatively affect market demand for our products.

Furthermore, any federal and state efforts to reform government and private healthcare insurance programs could significantly affect the purchase of healthcare services and products in general and demand for our products in particular. We are unable to predict whether potential healthcare reforms will be enacted, whether other healthcare legislation or regulations affecting the business may be proposed or enacted in the future or what effect any such legislation or regulations would have on our business, financial condition or results of operations.

It Is Possible That Other Treatments May Be Deemed Superior To Brachytherapy. Our ^{131}Cs seed faces competition not only from companies that sell other radiation therapy products, but also from companies that are developing alternative therapies for the treatment of cancers. It is possible that advances in the pharmaceutical, biomedical, or gene therapy fields could render some or all radiation therapies, whether conventional or brachytherapy, obsolete. If alternative therapies are proven or even perceived to offer treatment options that are superior to brachytherapy, physician adoption of our product could be negatively affected and our revenues from our product could decline.

Our Industry Is Intensely Competitive. The medical products industry is intensely competitive. We compete with both public and private medical device, biotechnology and pharmaceutical companies that have been established longer than we have, have a greater number of products on the market, have greater financial and other resources, and have other technological or competitive advantages. In addition, centers that wish to offer the ^{131}Cs seed must comply with licensing requirements specific to the state in which they do business and these licensing requirements may take a considerable amount of time to comply with. Certain centers may choose to not offer our ^{131}Cs seed due to the time required to obtain necessary license amendments. We also compete with academic institutions, government agencies, and private research organizations in the development of technologies and processes and in acquiring key personnel. Although we have patents granted and patents applied for to protect our isotope separation processes and ^{131}Cs seed manufacturing technology, we cannot be certain that one or more of our competitors will not attempt to obtain patent protection that blocks or adversely affects our product development efforts. To minimize this potential, we have entered into exclusive agreements with key suppliers of isotopes and isotope precursors.

We May Be Unable To Adequately Protect Or Enforce Our Intellectual Property Rights Or Secure Rights To Third-Party Patents. Our ability and the abilities of our partners to obtain and maintain patent and other protection for our products will affect our success. We are assigned, have rights to, or have exclusive licenses to patents and patents pending in the U.S. and numerous foreign countries. The patent positions of medical device companies can be highly uncertain and involve complex legal and factual questions. Our patent rights may not be upheld in a court of law if challenged. Our patent rights may not provide competitive advantages for our products and may be challenged, infringed upon or circumvented by our competitors. We cannot patent our products in all countries or afford to litigate every potential violation worldwide.

Because of the large number of patent filings in the medical device and biotechnology field, our competitors may have filed applications or been issued patents and may obtain additional patents and proprietary rights relating to products or processes competitive with or similar to ours. We cannot be certain that U.S. or foreign patents do not exist or will not be issued that would harm our ability to commercialize our products and product candidates.

One Of Our Licensed Patents May Be Terminated Under Certain Conditions. Our ^{131}Cs separation patent is essential for the production of Cesium-131. The owner of the patent, Lane Bray, a shareholder of the Company and Chief Chemist of Medical, has the right to terminate the license agreement that allows the Company to use this patent if we discontinue production for any consecutive 18 month period. The Company has no plans to discontinue production, and management considers it highly unlikely that production will be discontinued for any significant period at any time in the future.

Failure To Comply With Government Regulations Could Harm Our Business. As a medical device and medical isotope manufacturer, we are subject to extensive, complex, costly, and evolving governmental rules, regulations and restrictions administered by the FDA, by other federal and state agencies, and by governmental authorities in other countries. Compliance with these laws and regulations is expensive and time-consuming, and changes to or failure to comply with these laws and regulations, or adoption of new laws and regulations, could adversely affect our business.

In the United States, as a manufacturer of medical devices and devices utilizing radioactive by-product material, we are subject to extensive regulation by federal, state, and local governmental authorities, such as the FDA and the Washington State Department of Health, to ensure such devices are safe and effective. Regulations promulgated by the FDA under the U.S. Food, Drug and Cosmetic Act, or the FDC Act, govern the design, development, testing, manufacturing, packaging, labeling, distribution, marketing and sale, post-market surveillance, repairs, replacements, and recalls of medical devices. In Washington State, the Department of Health, by agreement with the federal Nuclear Regulatory Commission ("NRC"), regulates the possession, use, and disposal of radioactive byproduct material as well as the manufacture of radioactive sealed sources to ensure compliance with state and federal laws and regulations. Our ^{131}Cs brachytherapy seeds constitute both medical devices and radioactive sealed sources and are subject to these regulations.

Under the FDC Act, medical devices are classified into three different categories, over which the FDA applies increasing levels of regulation: Class I, Class II, and Class III. Our ^{131}Cs seed has been classified as a Class II device and has received clearance from the FDA through the 510(k) pre-market notification process. Although not anticipated, any modifications to the device that would significantly affect safety or effectiveness, or constitute a major change in intended use, would require a new 510(k) submission. As with any submittal to the FDA, there is no assurance that a 510(k) clearance would be granted to the Company.

In addition to FDA-required market clearances and approvals for our products, our manufacturing operations are required to comply with the FDA's Quality System Regulation, or QSR, which addresses requirements for a company's quality program such as management responsibility, good manufacturing practices, product and process design controls, and quality controls used in manufacturing. Compliance with applicable regulatory requirements is monitored through periodic inspections by the FDA Office of Regulatory Affairs ("ORA"). We anticipate both announced and unannounced inspections by the FDA. Such inspections could result in non-compliance reports (Form 483) which, if not adequately responded to, could lead to enforcement actions. The FDA can institute a wide variety of enforcement actions, ranging from public warning letters to more severe sanctions such as fines, injunctions, civil penalties, recall of our products, operating restrictions, suspension of production, non-approval or withdrawal of pre-market clearances for new products or existing products, and criminal prosecution. There can be no assurance that we will not incur significant costs to comply with these regulations in the future or that the regulations will not have a material adverse effect on our business, financial condition and results of operations.

The marketing of our products in foreign countries will, in general, be regulated by foreign governmental agencies similar to the FDA. Foreign regulatory requirements vary from country to country. The time and cost required to obtain regulatory approvals could be longer than that required for FDA clearance in the United States and the requirements for licensing a product in another country may differ significantly from FDA requirements. We will rely, in part, on foreign distributors to assist us in complying with foreign regulatory requirements. We may not be able to obtain these approvals without incurring significant expenses or at all, and the failure to obtain these approvals would prevent us from selling our products in the applicable countries. This could limit our sales and growth.

Our Business Exposes Us To Product Liability Claims. Our design, testing, development, manufacture, and marketing of products involve an inherent risk of exposure to product liability claims and related adverse publicity. Insurance coverage is expensive and difficult to obtain, and, although we currently have a five million dollar policy, in the future we may be unable to obtain or renew coverage on acceptable terms, if at all. If we are unable to obtain or renew sufficient insurance at an acceptable cost or if a successful product liability claim is made against us, whether fully covered by insurance or not, our business could be harmed.

Our Business Involves Environmental Risks. Our business involves the controlled use of hazardous materials, chemicals, biologics, and radioactive compounds. Manufacturing is extremely susceptible to product loss due to radioactive, microbial, or viral contamination; material or equipment failure; vendor or operator error; or due to the very nature of the product’s short half-life. Although we believe that our safety procedures for handling and disposing of such materials comply with state and federal standards there will always be the risk of accidental contamination or injury. In addition, radioactive, microbial, or viral contamination may cause the closure of the respective manufacturing facility for an extended period of time. By law, radioactive materials may only be disposed of at state-approved facilities. At our leased facility we use commercial disposal contractors. We may incur substantial costs related to the disposal of these materials. If we were to become liable for an accident, or if we were to suffer an extended facility shutdown, we could incur significant costs, damages, and penalties that could harm our business.

We Rely Upon Key Personnel. Our success will depend, to a great extent, upon the experience, abilities and continued services of our executive officers and key scientific personnel. IsoRay has an employment agreement with Roger Girard, its Chief Executive Officer, and Lori Woods, its Vice President, and its subsidiary has employment agreements with most of its executive officers and key scientific personnel. If we lose the services of several of these officers or key scientific personnel, our business could be harmed. Our success also will depend upon our ability to attract and retain other highly qualified scientific, managerial, sales, and manufacturing personnel and their ability to develop and maintain relationships with key individuals in the industry. Competition for these personnel and relationships is intense and we compete with numerous pharmaceutical and biotechnology companies as well as with universities and non-profit research organizations. We may not be able to continue to attract and retain qualified personnel.

The Value Of Our Granted Patent, and Our Patents Pending, Is Uncertain. Although our management strongly believes that our patent on the process for producing ^{131}Cs, our patent pending on the manufacture of the brachytherapy seed, our patent applications on additional methods for producing ^{131}Cs and other isotopes which have been filed, and anticipated future patent applications, which have not yet been filed, have significant value, we cannot be certain that other like-kind processes may not exist or be discovered, that any of these patents is enforceable, or that any of our patent applications will result in issued patents.

Our Ability To Expand Into Foreign Markets Is Uncertain. Our future growth will depend in part on our ability to establish, grow and maintain product sales in foreign markets, particularly in Europe and Asia. However, we have limited experience in marketing and distributing products in other countries. Any foreign operations would subject us to additional risks and uncertainties, including our customers' ability to obtain reimbursement for procedures using our products in foreign markets; the burden of complying with complex and changing foreign regulatory requirements; language barriers and other difficulties in providing long-range customer service; potentially longer accounts receivable collection times; significant currency fluctuations, which could cause third-party distributors to reduce the number of products they purchase from us because the cost of our products to them could fluctuate relative to the price they can charge their customers; reduced protection of intellectual property rights in some foreign countries; and the possibility that contractual provisions governed by foreign laws would be interpreted differently than intended in the event of a contract dispute. Any future foreign sales of our products could also be adversely affected by export license requirements, the imposition of governmental controls, political and economic instability, trade restrictions, changes in tariffs and difficulties in staffing and managing foreign operations. Many of these factors may also affect our ability to import enriched barium from Russia under our contracts with the INM and RIAR.

Our Ability To Initiate Operations And Manage Growth Is Uncertain. Our efforts to commercialize our medical products will result in new and increased responsibilities for management personnel and will place a strain upon the entire company. To compete effectively and to accommodate growth, if any, we may be required to continue to implement and to improve our management, manufacturing, sales and marketing, operating and financial systems, procedures and controls on a timely basis and to expand, train, motivate and manage our employees. There can be no assurance that our personnel, systems, procedures, and controls will be adequate to support our future operations. If the IsoRay ^{131}Cs seed were to rapidly become the "seed of choice," it is unlikely that we could meet demand. We could experience significant cash flow difficulties and may have difficulty obtaining the working capital required to manufacture our products and meet demand. This would cause customer discontent and invite competition.

Our Reporting Obligations As A Public Company Are Costly. Operating a public company involves substantial costs to comply with reporting obligations under federal securities laws that are continuing to increase as provisions of the Sarbanes Oxley Act of 2002 are implemented. These reporting obligations increase our operating costs. We may not reach sufficient business volume to justify our public reporting status.

USE OF PROCEEDS

We estimate that the net proceeds from the sale of the 4,000,000 shares of common stock and warrants to purchase 800,000 shares of common stock we are offering will be approximately $14,872,860 million, after deducting placement agent fees and the estimated offering expenses payable by us and assuming that we sell all of the shares and warrants offered hereunder but none of the warrants are exercised.

We intend to use the net proceeds from the sale of our shares of common stock offered by this prospectus supplement for general corporate purposes, including without limitation capital expenditures and working capital needs, as described below:

Salaries, fees and expenses	$ 1,160,000
Sales, marketing and advertising	2,000,000
Purchase, rental or leasing and installation of machinery and equipment[1]	2,500,000
Construction or leasing of plant and facilities[2]	2,000,000
Licensing and acquisitions of new products or business units	1,167,860
Research and development	2,172,140
Repayment of indebtedness	590,000
Working capital and payment of offering expenses	3,450,000
Total	$ 15,040,000

[1] Includes production equipment such as hot cells, gloveboxes, laser welders, and automation equipment. No vendors have been selected for these items.

[2] Includes tenant improvements and lease payments for our new production facility.

Although we have identified some of the potential uses of the proceeds from this offering, we have and reserve broad discretion in the application of these proceeds. Accordingly, we reserve the right to use these proceeds for different purposes or uses which we have not listed above. See "Risk Factors - *Since We Have Broad Discretion In How We Use The Proceeds From This Offering, We May Use The Proceeds In Ways In Which You Disagree*."

Pending any ultimate use of any portion of the proceeds from this offering, we intend to invest the proceeds in short-term US governmental securities.

Proceeds from the exercise of the warrants being sold through this offering are estimated to be $4,000,000, assuming all warrants are exercised using cash, and may be received by the Company at any time following the offering depending on when and if the warrants are exercised by investors. These proceeds when and if received are expected to be used for general corporate purposes, including without limitation, capital expenditures and working capital needs.

DETERMINATION OF OFFERING PRICE

We will sell our common stock and warrants in this offering at a negotiated price of $20 per five shares of common stock. Each purchaser of five shares of our common stock will receive a warrant to purchase one share of common stock at an exercise price of $5.00 per share. Prior to this offering, there was no public market for the warrants. The terms and conditions of the warrants, including exercise price, were determined by negotiation by us and the purchasers. The principal factors considered in determining these terms and conditions include:

- the market price of our common stock;
- the recent market prices of, and demand for, publicly traded common stock and warrants to purchase publicly traded common stock of generally comparable companies; and
- other factors deemed relevant by the purchasers and us.

DILUTION

Our net tangible book value on December 31, 2006 was approximately $4,056,916, or approximately $0.25 per share. “Net tangible book value” is total assets minus the sum of liabilities and intangible assets. “Net tangible book value per share” is net tangible book value divided by the total number of shares of common stock outstanding at December 31, 2006.

Net tangible book value dilution per share to new investors represents the difference between the amount per share paid by purchasers of shares of common stock in this offering and the net tangible book value per share of our common stock immediately after completion of this offering. For purposes of this calculation, the entire purchase price for the shares and warrants is being allocated to the shares of common stock and assumes no exercise of the warrants. After giving effect to the sale of 4,000,000 shares of our common stock in this offering and after deducting the placement agent fees and our estimated offering expenses, at a public offering price of $4.00 per share, our net tangible book value as of December 31, 2006 would have been $0.92 per share. This amount represents an immediate increase in net tangible book value of $0.67 per share to existing shareholders and an immediate dilution of $3.08 per share to purchasers of common stock in this offering, as illustrated in the following table:

Public offering price per share	$	4.00
Net tangible book value per share as of December 31, 2006	$	0.25
Increase in net tangible book value per share attributable to this offering	$	0.67
Pro forma net tangible book value per share as of December 31, 2006 after giving effect to this offering	$	0.92
Dilution per share to new investors in this offering	$	3.08

The table above excludes, as of December 31, 2006, the following securities:

- 4,707,131 shares of common stock issuable upon the exercise of warrants with a weighted average exercise price of $4.36;
- 77,080 shares of common stock issuable upon the conversion of preferred stock;
- 3,184,639 shares of common stock issuable upon the exercise of options with a weighted average exercise price of $2.49;
- 109,639 shares of common stock issuable upon the conversion of convertible debentures at $4.15 per share;
- 970,578 shares of common stock reserved for future stock option grants under our equity compensation plans; and
- 800,000 shares of common stock issuable upon the exercise of the warrants included in this offering at an exercise price of $5.00 per share and up to 200,000 shares of common stock issuable upon the exercise of the warrants to be issued to the placement agents at an exercise price of $4.40 per share.

To the extent that any of these options, warrants and convertible securities are exercised or converted, there may be further dilution to new investors.

DESCRIPTION OF WARRANTS

The material terms and provisions of the warrants being offered pursuant to this prospectus supplement and the accompanying prospectus are summarized below. This summary is subject to, and qualified in its entirety by, the form of warrant filed as an exhibit to our current report on Form 8-K, which we will file prior to the opening of the market on the day following the pricing of the offering.

Each warrant entitles the registered holder to purchase the number of shares of our common stock set forth on the cover thereof at a price of $5.00 per share, subject to adjustment, as discussed below, at any time commencing on the closing date. The warrants will expire on the fourth anniversary of the closing date. We will not make an application to list the warrants on the OTC Bulletin Board, any national securities exchange or other nationally recognized trading system. The common stock underlying the warrants is quoted on the OTC Bulletin Board.

The exercise price and number of shares of common stock issuable upon exercise of the warrants may be adjusted in certain circumstances, including in the event of our reorganization, reclassification, merger, consolidation, sale of substantially all assets, subdivision or combination of stock, or payment of any stock dividend.

The warrants may be exercised upon surrender of the warrant on or prior to the expiration date at the offices of the Company, with the subscription form set forth in the warrant completed and executed as indicated, accompanied by full payment of the exercise price, in certified or other immediately available funds, for the number of warrants being exercised as provided for in the warrant. In the event that a registration statement covering the shares issuable upon the exercise of a warrant is not effective at the time the warrant is exercised, the holder of the warrant may elect a cashless exercise of the warrant.

The warrantholders do not have the rights or privileges of holders of common stock, including any voting rights, until they exercise their warrants and receive shares of common stock. After the issuance of shares of common stock upon exercise of the warrants, each holder will be entitled to one vote for each share held of record on all matters to be voted on by stockholders.

No fractional shares will be issued upon exercise of the warrants.

PLAN OF DISTRIBUTION

We are offering the shares and warrants through placement agents. Subject to the terms and conditions contained in the placement agent agreements, dated March 14, 2007 and February 2, 2006, Punk Ziegel & Company, L.P. and Maxim Group LLC have agreed to act as the placement agents for the sale of up to 4,000,000 shares of common stock and warrants to purchase 800,000 shares of common stock. The placement agents are not purchasing or selling any shares or warrants by this prospectus supplement, nor are they required to arrange for the purchase or sale of any specific number or dollar amount of shares and warrants, but have agreed to use their best efforts to arrange for the sale of all shares and warrants.

The placement agents propose to arrange for the sale to one or more purchasers of the common stock and warrants offered pursuant to this prospectus supplement and the accompanying prospectus through direct purchase agreements between the purchasers and us.

Our obligation to issue and sell shares of our common stock and warrants to the purchasers is subject to the conditions set forth in the purchase agreements, which may be waived by us in our discretion. A purchaser's obligation to purchase our common stock and warrants is subject to conditions set forth in the purchase agreement as well, which also may be waived.

It is expected that the sale of up to 4,000,000 shares of our common stock and warrants to purchase up to 800,000 shares of our common stock will be completed on or about March 19, 2007. We have entered into an Escrow Agreement dated March 14, 2007 with the placements agents and American Stock Transfer & Trust Company as escrow agent whereby the escrow agent will receive and hold funds from purchasers and release them to us only if the minimum offering amount of $15 million is raised through escrowed funds in combination with any direct funding. If the minimum offering amount is not raised, the escrow agent will return the money raised to purchasers without any deduction or interest.

Because the minimum offering amount required as a condition to closing in this offering is $15 million, the actual total offering commissions are not presently determinable and may be less than the maximum amount set forth above.

We will pay the placement agents an aggregate cash commission equal to 6.0% of the gross proceeds of the sale of the shares and warrants. We will also reimburse the placement agents for up to $35,000 in documented expenses in addition to legal expenses incurred by them in connection with this offering. In no event will the total amount of compensation paid to the placement agents and other securities brokers and dealers upon completion of this offering exceed 8% of the gross proceeds of this offering. The estimated offering expenses payable by us, in addition to the placement agents' fee of $960,000, and not including any expense reimbursement payable to the placement agents, are approximately $167,140, which includes legal, accounting and printing costs and various other fees associated with registering and listing the common stock. After deducting certain fees due to the placement agents and our estimated offering expenses, we expect the net proceeds from this offering to be approximately $14.9 million, excluding any exercise of the warrants.

The placement agents will receive warrants to purchase 5% of the aggregate shares of common stock sold pursuant to this offering. These warrants will have an exercise price equal to 110% of the price of the shares sold pursuant to this offering, or $4.40 per share, a four year term, and will provide for cashless exercise. These warrants are not registered hereunder but the Company has agreed to grant registration rights for the warrants consisting of a one-time demand registration right and future piggyback registration rights.

The securities to be received by Punk, Ziegel & Company, L.P. and Maxim Group LLC will not be sold, transferred, hypothecated, assigned, pledged or otherwise subjected to any hedging, short sale, put, derivative or call transaction for a period of 180-days from the date of the consummation of this offering as outlined in Rule 2710(g)(1) of the

National Association of Securities Dealers, Inc.

We have agreed to indemnify the placement agents against certain liabilities, including liabilities under the Securities Act of 1933, as amended, and liabilities arising from breaches of representations and warranties contained in the placement agent agreement. We have also agreed to contribute to payments the placement agents may be required to make in respect of such liabilities.

The placement agents have informed us that they will not engage in over-allotment, stabilizing transactions or syndicate covering transactions in connection with this offering.

The placement agent agreements are included as exhibits to our Current Report on Form 8-K that we will file with the SEC in connection with the consummation of this offering.

Our common stock is traded on the OTC Bulletin Board under the symbol “ISRY.OB.”

The placement agents and their affiliates have provided and may provide certain financial advisory and investment banking services for us for which they receive fees. The placement agents and their affiliates may from time to time in the future engage in transactions with us and perform services for us in the ordinary course of their business.

WHERE YOU CAN FIND MORE 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 *http://www.sec.gov.* The SEC's website contains reports, proxy and information statements and other information regarding issuers, such as us, that file electronically with the SEC. You may also read and copy any document we file with the SEC at the SEC's Public Reference Room at 100 F Street, N.E., Room 1580, Washington, D.C. 20549. You may also obtain copies of these documents at prescribed rates by writing to the SEC. Please call the SEC at 1-800-SEC-0330 for further information on the operation of its Public Reference Room. We maintain a website at *www.isoray.com.* We have not incorporated by reference into this prospectus supplement or the accompanying prospectus the information in, or that can be accessed through, our website, and you should not consider it to be a part of this prospectus supplement or the accompanying prospectus.

INCORPORATION OF CERTAIN DOCUMENTS BY REFERENCE

The SEC allows us to "incorporate by reference" into this prospectus the information we file with it. This means that we can disclose important information to you by referring you to those documents. The information we incorporate by reference is considered to be a part of this prospectus, and later information we file with the SEC will automatically update and supersede this information. The following documents filed with the SEC (in each case, Commission File No. 000-14247) are incorporated by reference in this prospectus:

(a) Our Annual Report on Form 10-KSB for the fiscal year ended June 30, 2006 (filed September 28, 2006), which contains audited financial statements for our latest fiscal year for which such statements have been filed.

(b) Our Quarterly Reports on Form 10-QSB for the fiscal quarters ended September 30, 2006 (filed November 14, 2006) and December 31, 2006 (filed February 14, 2007).

(c) Our Current Reports on Form 8-K filed on August 10, 2006, August 18, 2006, September 8, 2006, September 11, 2006, November 6, 2006 and February 7, 2007.

(d) The description of our common stock contained in our Registration Statement on Form SB-2, filed with the Commission on October 16, 2006, including any amendments or reports filed for the purpose of updating such description.

(e) Our Proxy Statement on Schedule 14A filed on January 16, 2007.

We are also incorporating by reference any future filings we make with the SEC under Section 13(a), 13(c), 14 or 15(d) of the Exchange Act until this offering is completed, except for information furnished under Item 2.02 or Item 7.01 of our Current Reports on Form 8-K which is not deemed to be filed and not incorporated by reference herein.

You may request a copy of these filings (other than an exhibit to a filing unless that exhibit is specifically incorporated by reference into that filing), at no cost, by writing or calling us at IsoRay, Inc., 350 Hills Street, Suite 106, Richland, Washington 99354, telephone number (509) 375-1202, Attention: Chief Financial Officer.

ISORAY, INC.

$20,000,000
Common Stock
Warrants

We may, from time to time in one or more offerings, sell up to $20,000,000 in the aggregate, inclusive of any exercise price thereof, of:

- shares of our common stock;
- warrants to purchase shares of our common stock; or
- any combination of the foregoing.

We will provide the specific terms of these securities in supplements to this prospectus. The prospectus supplement may also add, update or change information in this prospectus. You should read this prospectus and any prospectus supplement, as well as the documents incorporated by reference or deemed to be incorporated by reference into this prospectus, carefully before you invest. **This prospectus may not be used to offer or sell securities unless accompanied by a prospectus supplement**.

Our principal executive offices are located at 350 Hills Street, Suite 106, Richland, Washington 99354, and our telephone number is (509) 375-1202.

Our common stock is listed on the Over the Counter Bulletin Board under the symbol "ISRY." Each prospectus supplement will contain information, where applicable, as to any listing on the Over the Counter Bulletin Board or any other securities exchange covered by the prospectus supplement.

Investing in the securities we may offer involves various risks. See the sections entitled "Risk Factors" on page 2 and "Note Regarding Forward-Looking Statements" on page 2. Additional risks associated with an investment in us as well as with the particular types of securities will be described in the related prospectus supplement.

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

The date of this prospectus is January 26, 2007.

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ABOUT THIS PROSPECTUS

This prospectus is part of a registration statement that we have filed with the Securities and Exchange Commission, or the SEC, using a “shelf” registration process. Under this shelf registration process, we may offer from time to time up to $20,000,000 in the aggregate, inclusive of any exercise price thereof, of the following securities:

- shares of our common stock;
- warrants to purchase shares of our common stock; or
- any combination of the foregoing.

This prospectus provides you with a general description of the securities we may offer. Each time we offer securities, we will provide you with a prospectus supplement that describes the specific amounts, prices and terms of the securities we may offer. The prospectus supplement also may add, update or change information contained in this prospectus. You should read carefully both this prospectus and any prospectus supplement together with additional information described below under “Information Incorporated By Reference.”

This prospectus does not contain all the information provided in the registration statement we filed with the SEC. For further information about us or the securities offered hereby, you should refer to that registration statement, which you can obtain from the SEC as described below under “Where You Can Find More Information.”

You should rely only on the information contained or incorporated by reference in this prospectus or a prospectus supplement. We have not authorized any other person to provide you with different information. If anyone provides you with different or inconsistent information, you should not rely on it. This prospectus is not an offer to sell these securities and it is not soliciting an offer to buy these securities in any jurisdiction where the offer or sale is not permitted. You should assume that the information appearing in this prospectus or any prospectus supplement, as well as information we have previously filed with the SEC and incorporated by reference, is accurate only as of the date on the front of those documents. Our business, financial condition, results of operations and prospects may have changed since those dates.

We may sell the securities to or through placement agents, dealers or agents or directly to purchasers. We and our agents reserve the sole right to accept or reject in whole or in part any proposed purchase of securities. The prospectus supplement, which we will provide to you each time we offer securities, will set forth the names of any placement agents, dealers or agents involved in the sale of the securities, and any applicable fee, commission or discount arrangements with them. See “Plan of Distribution.”

ABOUT ISORAY

In this prospectus, the terms “IsoRay,” the “Company,” “we,” “us,” and “our” refer to IsoRay, Inc. and its subsidiary IsoR Medical, Inc.

We are a medical technology company focusing on innovative treatments for prostate cancer and other solid cancer tumors, with a goal of improved patient outcomes. Our wholly-owned subsidiary, IsoRay Medical, Inc., a Delaware corporation ("Medical"), began selling its initial product, the Food and Drug Administration cleared IsoRay Cesium-131 brachytherapy seed, in October 2004 for the treatment of prostate cancer. Cesium-131 or ^{131}Cs is an isotope of the element Cesium that gives off low energy, “soft” x-rays as it decays killing diseased tissue by irradiating it

where it is placed. Brachytherapy seeds allow physicians to place ^{131}Cs or another radioactive isotope within the body to kill cancerous tissue. Our management believes that the clinical benefits of Cesium-131 will enable us to capture market share within the existing brachytherapy market, which uses the radioactive isotopes Palladium-103 and Iodine-125.

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More comprehensive information about us is available through our Internet website at http://www.isoray.com. The information on our website is not incorporated by reference into this prospectus. Our executive offices are located at 350 Hills Street, Suite 106, Richland, Washington 99354, and our telephone number is (509) 375-1202.

RISK FACTORS

Before making an investment decision, you should carefully consider the risks described under "Risk Factors" in the applicable prospectus supplement and in our most recent Annual Report on Form 10-KSB, or any updates in our Quarterly Reports on Form 10-QSB, together with all of the other information appearing in this prospectus or incorporated by reference into this prospectus and any applicable prospectus supplement, in light of your particular investment objectives and financial circumstances. The risks so described are not the only risks facing our company. Additional risks not presently known to us or that we currently deem immaterial may also impair our business operations. Our business, financial condition or results of operations could be materially adversely affected by any of these risks. The trading price of our securities could decline due to any of these risks, and you may lose all or part of your investment.

NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus, any prospectus supplement and the documents incorporated by reference herein include "forward-looking statements". Forward-looking statements are those that predict or describe future events or trends and that do not relate solely to historical matters. You can generally identify forward-looking statements as statements containing the words "believe," "expect," "will," "anticipate," "intend," "estimate," "project," "plan," "assume" or ot expressions, or negatives of those expressions, although not all forward-looking statements contain these identifying words. All statements contained or incorporated by reference in this prospectus and any prospectus supplement other than statements of historical fact are statements that could be deemed forward-looking statements, including any statements of the plans, strategies and objectives of management for future operations; any statements concerning proposed new products, services, developments or industry rankings; any statements regarding future economic conditions or performance; any statements of belief, any statements regarding the validity of our intellectual property and patent protection; and any statements of assumptions underlying any of the foregoing.

You should not place undue reliance on our forward-looking statements because the matters they describe are subject to known and unknown risks, uncertainties and other unpredictable factors, many of which are beyond our control. Our forward-looking statements are based on the information currently available to us and speak only as of the date on the cover of this prospectus, the date of any prospectus supplement, or, in the case of forward-looking statements incorporated by reference, as of the date of the filing that includes the statement. New risks and uncertainties arise from time to time, and it is impossible for us to predict these matters or how they may affect us. Over time, our actual results, performance or achievements will likely differ from the anticipated results, performance or achievements that are expressed or implied by our forward-looking statements, and such difference might be significant and materially adverse to our security holders. We do not undertake and specifically decline any obligation to update any forward-looking statements or to publicly announce the results of any revisions to any statements to reflect new information or future events or developments.

We have identified some of the important factors that could cause future events to differ from our current expectations and they are described in this prospectus and supplements to this prospectus under the caption "Risk Factors" as well as in our most recent Annual Report on Form 10-KSB, including without limitation under the captions "Risk Factors" and "Management's Discussion and Analysis of Financial Condition and Results of Operations" and in other documents that

we may file with the SEC, all of which you should review carefully. Please consider our forward-looking statements in light of those risks as you read this prospectus and any prospectus supplement.

USE OF PROCEEDS

We will retain broad discretion over the use of the net proceeds from the sale of our securities offered by us hereby. Except as described in any prospectus supplement, we currently intend to use the net proceeds from the sale of securities offered by us pursuant to this prospectus for working capital, capital expenditures and other general corporate purposes. We may also use such proceeds to fund acquisitions of businesses, technologies or product lines that complement our current business. However, we currently have no commitments or agreements for any specific acquisitions. Pending application of the net proceeds, we intend to invest the net proceeds of the offering of securities by us in investment-grade, interest-bearing securities.

GENERAL DESCRIPTION OF SECURITIES

We, directly or through agents, dealers or placement agents designated from time to time, may offer, issue and sell, together or separately, in one or more offerings, up to $20,000,000 in the aggregate, inclusive of any exercise price thereof, of:

- shares of our common stock, par value $0.001 per share;
- warrants to purchase shares of our common stock; or
- any combination of the foregoing, either individually or as units consisting of one or more of the foregoing, each on terms to be determined at the time of sale.

The common stock and the warrants are collectively referred to herein as the securities. This prospectus provides you with a general description of the securities we may offer. Each time we offer securities, we will provide you with a prospectus supplement that describes the specific amounts, prices and terms of the securities we offer. The securities involve various risks that we will describe in the section entitled “Risk Factors” that will be included in each prospectus supplement.

DESCRIPTION OF CAPITAL STOCK

Common Stock

The Company’s Articles of Incorporation provide that the Company has the authority to issue 200 million shares of capital stock, which are currently divided into two classes as follows: 194 million shares of common stock, par value of $0.001 per share; and 6 million shares of preferred stock, also with a par value of $0.001 per share. As of January 5, 2007, there were 16,296,045 shares of our common stock issued and outstanding. As of January 5, 2007, the Company also had 77,080 shares of Series B preferred stock, options to purchase 3,436,176 shares of common stock, warrants to purchase 4,772,068 shares of common stock, warrants to purchase 173,292 shares of preferred stock, and $455,000 in principal amount of convertible debentures (convertible into common stock at $4.15 per share) outstanding.

Holders of shares of our common stock are entitled to one vote per share held of record on all matters submitted to a vote of stockholders, including the election of directors. The holders are entitled to receive dividends when, as and if declared by our board of directors, in its discretion, out of funds legally available therefor, subject to preferences that may be applicable to any outstanding shares of our preferred stock. The Company has not paid any cash dividends on its common stock and does not plan to pay any cash dividends on its common stock for the foreseeable future. In the

event of our liquidation, dissolution or winding up, the holders of our common stock are entitled to share ratably in all of our assets remaining after payment of liabilities and after payment of any preferential amounts to which holders of shares of any series of our preferred stock that are or may be outstanding in the future, may be entitled. The holders of our common stock have no preemptive or other subscription rights, and there are no conversion rights or redemption or sinking fund provisions with respect to such shares. All of the outstanding shares of our common stock are, and the shares of our common stock when issued will be, fully paid and nonassessable.

Anti-Takeover Effects of Provisions of the Articles of Incorporation

The authorized but unissued shares of our common and preferred stock are available for future issuance without our shareholders' approval. These additional shares may be utilized for a variety of corporate purposes including but not limited to future public or direct offerings to raise additional capital, corporate acquisitions and employee incentive plans. The issuance of such shares may also be used to deter a potential takeover of IsoRay that may otherwise be beneficial to shareholders by diluting the shares held by a potential suitor or issuing shares to a shareholder that will vote in accordance with IsoRay's Board of Directors' desires. A takeover may be beneficial to shareholders because, among other reasons, a potential suitor may offer shareholders a premium for their shares of stock compared to the then-existing market price.

DESCRIPTION OF THE WARRANTS

We may issue warrants to purchase shares of our common stock, with the stock underlying the warrants being registered rather than the warrants themselves. The warrants may be issued independently or together with shares of our common stock and may be attached to or separate from the shares of our common stock. The warrants may be issued under warrant agreements to be entered into between us and a bank or trust company, as warrant agent, all as shall be set forth in the prospectus supplement relating to warrants being offered pursuant to such prospectus supplement. The following description of the warrants will apply to the warrants offered by this prospectus unless we provide otherwise in the applicable prospectus supplement. The applicable prospectus supplement for a particular series of warrants may specify different or additional terms.

The applicable prospectus supplement will describe the following terms of warrants offered:

- the title of the warrants;
- the securities for which the warrants are exercisable;
- the price or prices at which the warrants will be issued;
- the provisions, if any, for changes to or adjustments in the exercise price;
- the provisions, if any, for call rights or put rights relating to the warrants or the underlying securities;
- the date on which the right to exercise the warrants shall commence and the date on which the right will expire;
- if applicable, the number of warrants issued with each share of our common stock;
- if applicable, the date on and after which the warrants and the related common stock will be separately transferable;
- a discussion of any material federal income tax consequences of holding or exercising the warrants; and

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

Holders of warrants will not be entitled, by virtue of being such holders, to vote, consent, receive dividends, receive notice as stockholders with respect to any meeting of stockholders for the election of our directors or any other matter, or to exercise any rights whatsoever as our stockholders.

The exercise price payable and the number of shares of our common stock purchasable upon the exercise of each warrant will be subject to adjustment in certain events, including the issuance of a stock dividend to holders of our common stock and/or our preferred stock or a stock split, reverse stock split, combination, subdivision or reclassification of our common stock. In lieu of adjusting the number of shares of our common stock purchasable upon exercise of each warrant, we may elect to adjust the number of warrants. No fractional shares will be issued upon exercise of the warrants, but we will pay the cash value of any fractional shares otherwise issuable. Notwithstanding the foregoing, in case of any consolidation, merger, or sale or conveyance of our property as an entirety or substantially as an entirety, the holder of each outstanding warrant shall have the right to the kind and amount of shares of stock and other securities and property, including cash, receivable by a holder of the number of shares of our common stock into which the warrant was exercisable immediately prior to such transaction.

Each warrant will entitle the holder to purchase for cash such shares of our common stock at such exercise price as shall in each case be set forth in, or be determinable as set forth in, the prospectus supplement relating to the warrants offered thereby. Warrants may be exercised at any time up to the close of business on the expiration date set forth in the prospectus supplement relating to the warrants offered thereby. After the close of business on the expiration date, unexercised warrants will become void.

The warrants may be exercised as set forth in the prospectus supplement relating to the warrants offered. Upon receipt of payment and the warrant certificate properly completed and duly executed at the corporate trust office of the warrant agent or any other office indicated in the prospectus supplement, we will, as soon as practicable, forward the shares of our common stock purchasable upon such exercise. If less than all of the warrants represented by such warrant certificate are exercised, a new warrant certificate will be issued for the remaining warrants.

PLAN OF DISTRIBUTION

We may sell the securities through placement agents or dealers, through agents, or directly to one or more purchasers or through a combination of these methods. The applicable prospectus supplement will describe the terms of the offering of the securities, including:

- the name or names of any placement agents, if any, and if required, any dealers or agents;
- the purchase price of the securities and the proceeds we will receive from the sale;
- any underwriting discounts and other items constituting placement agents' compensation;
- any discounts or concessions allowed or reallowed or paid to dealers; and
- any securities exchange or market on which the securities may be listed.

We may distribute the securities from time to time in one or more transactions at:

- fixed price or prices, which may be changed from time to time;
- market prices prevailing at the time of sale;
- prices related to such prevailing market prices; or
- negotiated prices.

Only placement agents named in the prospectus supplement are placement agents of the securities offered by the prospectus supplement.

If we use placement agents in the sale of securities, they will acquire the securities for their own account and may resell them from time to time in one or more transactions at a fixed public offering price or at varying prices determined at the time of sale. We may offer the securities to the public through underwriting syndicates represented by managing placement agents or by placement agents without a syndicate. Any public offering price and any discounts or concessions allowed or reallowed or paid to dealers may change from time to time.

If we use a dealer in the sale of the securities being offered pursuant to this prospectus, we or such selling stockholders will sell the securities to the dealer, as principal. The dealer may then resell the securities to the public at varying prices to be determined by the dealer at the time of resale.

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 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 authorize agents or placement agents to solicit offers by institutional investors to purchase securities from us at the public offering price set forth in the prospectus supplement pursuant to delayed delivery contracts providing for payment and delivery on a specified date in the future. We will describe the conditions to these contracts and the commissions we must pay for solicitation of these contracts in the prospectus supplement.

In connection with the sale of the securities, placement agents, dealers or agents may receive compensation from us, or from purchasers of the securities for whom they act as agents, in the form of discounts, concessions or commissions. Placement agents may sell the securities to or through dealers, and those dealers may receive compensation in the form of discounts, concessions or commissions from the placement agents or commissions from the purchasers for whom they may act as agents. Placement agents, dealers and agents that participate in the distribution of the securities, and any institutional investors or others that purchase securities directly and then resell the securities, may be deemed to be placement agents, and any discounts or commissions received by them from us and any profit on the resale of the securities by them may be deemed to be placement agent fees under the Securities Act.

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

In addition, we may enter into derivative transactions with third parties (including the writing of options), or sell securities not covered by this prospectus to third parties in privately negotiated transactions. If the applicable prospectus supplement indicates, in connection with such a transaction, the third parties may, pursuant to this prospectus and the applicable prospectus supplement, sell securities covered by this prospectus and the applicable prospectus supplement. If so, the third party may use securities borrowed from us or others to settle such sales and may use securities received from us to close out any related short positions. We may also loan or pledge securities covered by this prospectus and the applicable prospectus supplement to third parties, who may sell the loaned securities or, in an event of default in the case of a pledge, sell the pledged securities pursuant to this prospectus and the applicable prospectus supplement. The third party in such sale transactions will be an underwriter and will be identified in the applicable prospectus supplement or in a post-effective amendment.

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

Placement agents may engage in stabilizing and syndicate covering transactions in accordance with Rule 104 under the Exchange Act. Rule 104 permits stabilizing bids to purchase the securities being offered as long as the stabilizing bids do not exceed a specified maximum. Placement agents may over-allot the offered securities in connection with the offering, thus creating a short position in their account. Syndicate covering transactions involve purchases of the offered securities by placement agents in the open market after the distribution has been completed in order to cover syndicate short positions. Placement agents may also cover an over-allotment or short position by exercising their

over-allotment option, if any. Stabilizing and syndicate covering transactions may cause the price of the offered securities to be higher than it would otherwise be in the absence of these transactions. These transactions, if commenced, may be discontinued at any time.

LEGAL MATTERS

The validity of the securities being offered hereby will be passed on by Keller Rohrback, PLC, Phoenix, Arizona. Mr. Boatwright, a member of Keller Rohrback, PLC, is a director of the Company. Mr. Boatwright beneficially owned options to purchase 210,000 shares of our common stock as of the date of the opinion.

EXPERTS

DeCoria, Maichel & Teague, P.S., independent registered public accounting firm, has audited our consolidated balance sheets as of June 30, 2006 and June 30, 2005, and related consolidated statements of operations, stockholders' equity (deficit) and cash flows for the years ended June 30, 2006 and 2005, included in our Annual Report on Form 10-KSB for the fiscal year ended June 30, 2006, as set forth in their report, which is incorporated by reference in this prospectus and elsewhere in the registration statement. Our financial statements are incorporated by reference in reliance on DeCoria, Maichel & Teague, P.S.'s report, given on the authority of said firm as experts in accounting and auditing.

WHERE YOU CAN FIND ADDITIONAL INFORMATION

We have filed a registration statement on Form S-3 with the SEC relating to the common stock, and the warrants offered by this prospectus. This prospectus does not contain all of the information set forth in the registration statement and the exhibits and schedules thereto. We have omitted parts of the registration statement, as permitted by the rules and regulations of the SEC. Statements contained in this prospectus as to the contents of any contract or other document referred to are not necessarily complete and in each instance reference is made to the copy of such contract or other document filed as an exhibit to the registration statement, each such statement being qualified in all respects by such reference. For further information with respect to us and the common stock, and the warrants offered hereby, reference is made to such registration statement, exhibits and schedules.

We are subject to the information and periodic reporting requirements of the Exchange Act, and in accordance therewith file periodic reports, current reports, proxy statements and other information with the SEC. Such periodic reports, current reports, proxy statements, other information and a copy of the registration statement on Form S-3 may be inspected by anyone without charge and copies of these materials may be obtained upon the payment of the fees prescribed by the SEC, at the Public Reference Room maintained by the SEC at 100 F Street, N.E., Washington, D.C. 20549. The public may obtain information on the operation of the Public Reference Room by calling the SEC at 1-800-SEC-0330. The registration statement on Form S-3 and the periodic reports, current reports, proxy statements and other information filed by us are also available through the Internet web site maintained by the SEC at the following address: http://www.sec.gov.

INCORPORATION BY REFERENCE

The SEC allows us to "incorporate by reference" into this prospectus the information we file with it. This means that we can disclose important information to you by referring you to those documents. The information we incorporate by reference is considered to be a part of this prospectus, and later information we file with the SEC will automatically update and supersede this information. The following documents filed with the SEC (in each case, Commission File No. 000-14247) are incorporated by reference in this prospectus:

(a) Our Annual Report on Form 10-KSB for the fiscal year ended June 30, 2006 (filed September 28, 2006), which contains audited financial statements for our latest fiscal year for which such statements have been filed.

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(b) Our Quarterly Report on Form 10-QSB for the fiscal quarter ended September 30, 2006 (filed November 14, 2006).

(c) Our Current Reports on Form 8-K filed on August 10, 2006, August 18, 2006, September 8, 2006, September 11, 2006 and November 6, 2006.

(d) The description of our common stock contained in our Registration Statement on Form SB-2, filed with the Commission on October 16, 2006, including any amendments or reports filed for the purpose of updating such description.

(e) Our Proxy Statement on Schedule 14A filed on January 16, 2007.

(f) The prospectus contained as part of our Registration Statements on Form SB-2, filed with the Commission on December 1, 2006, and November 17, 2006, including any amendments filed to such Registration Statements.

We are also incorporating by reference any future filings we make with the SEC under Section 13(a), 13(c), 14 or 15(d) of the Exchange Act until this offering is completed, including those made between the date of filing of the initial registration statement and prior to effectiveness of the registration statement, except for information furnished under Item 2.02 or Item 7.01 of our Current Reports on Form 8-K which is not deemed to be filed and not incorporated by reference herein.

You may request a copy of these filings (other than an exhibit to a filing unless that exhibit is specifically incorporated by reference into that filing), at no cost, by writing or calling us at IsoRay, Inc., 350 Hills Street, Suite 106, Richland, Washington 99354, telephone number (509) 375-1202, Attention: Chief Financial Officer.

INDEMNIFICATION OF DIRECTORS AND OFFICERS

The Company's Articles of Incorporation provide to directors and officers indemnification to the full extent provided by law, and provide that, to the extent permitted by Minnesota law, a director will not be personally liable for monetary damages to the Company or its shareholders for breach of his or her fiduciary duty as a director, except for liability for certain actions that may not be limited under Minnesota law. On July 1, 2006, the Company entered into Indemnification Agreements with each of its directors and executive officers, and the Company intends to enter into substantially identical agreements with any officers and directors who take office in the future. The purpose of the Indemnification Agreements is to provide all officers and directors with indemnification to the fullest extent permitted under the Minnesota Business Corporations Act.

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