
**UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, DC 20549**

**Pre-Effective Amendment No. 1
to
FORM S-1**

REGISTRATION STATEMENT UNDER THE
SECURITIES ACT OF 1933

STEREOTAXIS, INC.

Delaware
*(State or other jurisdiction of
incorporation or organization)*

94-3120386
(I.R.S. Employer Identification No.)

4320 Forest Park Avenue, Suite 100
St. Louis, Missouri 63108
(314) 678-6100

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

Michael P. Kaminski
Chief Executive Officer
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(314) 678-6100
*(Name, address, including zip code, and
telephone number, including area code, of agent for service)*

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Approximate date of commencement of proposed sale to public: From time to time after this registration statement becomes effective.

If any of the securities being registered on this form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act of 1933, other than securities offered only in connection with dividend or interest reinvestment plans, check the following box.

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

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

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

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

Large accelerated filer

Accelerated filer

Non-accelerated filer
(Do not check if a smaller
reporting company)

Smaller reporting company

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

THE INFORMATION IN THIS PROSPECTUS IS NOT COMPLETE AND MAY BE CHANGED. THE SECURITIES MAY NOT BE SOLD UNTIL THE REGISTRATION STATEMENT FILED WITH THE SECURITIES AND EXCHANGE COMMISSION IS EFFECTIVE. THIS PROSPECTUS IS NOT AN OFFER TO SELL THESE SECURITIES AND IT IS NOT SOLICITING AN OFFER TO BUY THESE SECURITIES IN ANY STATE WHERE THE OFFER OR SALE IS NOT PERMITTED.

Subject to Completion, dated July 19, 2012

PROSPECTUS



Common Stock, \$0.001 par value

Up to 2,819,345 Shares

This prospectus relates to the offer and sale, from time to time, of up to 2,819,345 shares of our common stock, par value \$0.001 per share, of Stereotaxis, Inc. (“Stereotaxis”), which includes 650,618 shares of our common stock issuable to certain of the selling stockholders upon the exercise of warrants to purchase our common stock, by the selling stockholders named herein. The shares and the warrants described herein were issued in connection with that certain Stock and Warrant Purchase Agreement dated as of May 7, 2012 between Stereotaxis and the selling stockholders named herein. We do not know if any or all of the warrants will be exercised or if any or all of the shares will be resold. We will not receive any proceeds from the sale of the shares, but, assuming exercise of all warrants to which the shares relate, we will receive up to \$2,186,727 in proceeds from the exercise of the warrants prior to those sales, which proceeds would be used for general corporate purposes. Please see “Selling Stockholders” and “Plan of Distribution” for information about the selling stockholders and the manner of offering of the common stock.

Our common stock is listed on the Nasdaq Global Market under the symbol “STXS.” On July 18, 2012, the last reported sale price for our common stock on the Nasdaq Global Market was \$1.73 per share.

Investing in our common shares involves risks. See “Risk Factors” beginning on page 4 of this prospectus.

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

The date of this prospectus is _____, 2012.

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PROSPECTUS SUMMARY

This summary highlights selected information about Stereotaxis and a general description of the securities that may be offered for resale by the selling stockholders. This summary is not complete and does not contain all of the information that may be important to you. For a more complete understanding of us and the securities offered by the selling stockholders, you should carefully read this entire prospectus, including the “Risk Factors” section, any applicable prospectus supplement for these securities and the other documents we refer to and incorporate by reference. In particular, we incorporate important business and financial information into this prospectus by reference. As described below, on July 10, 2012, we effected a one-for-ten Reverse Stock Split of our common stock. Unless otherwise indicated, all information set forth herein gives effect to such Reverse Stock Split.

The Company

Stereotaxis designs, manufactures and markets the *Epoch* Solution, which is an advanced cardiology instrument control system for use in a hospital’s interventional surgical suite, or “interventional lab”, that we believe revolutionizes the treatment of arrhythmias and coronary artery disease by enabling enhanced safety, efficiency and efficacy for catheter-based, or interventional, procedures. The *Epoch* Solution is comprised of the *Niobe* ES Robotic Magnetic Navigation System (“*Niobe* ES system”), *Odyssey* Information Management Solution (“*Odyssey* Solution”), and the *Vdrive* Robotic Navigation System. We believe that our technology represents an important advance in the ongoing trend toward fully digitized, integrated and automated interventional labs and provides substantial, clinically important improvements and cost efficiencies over manual interventional methods, which often result in long and unpredictable procedure times with suboptimal therapeutic outcomes. We believe that our technology represents an important advance supporting efficient and effective information management and physician collaboration. The core elements of our technology, especially the *Niobe* ES system, are protected by an extensive patent portfolio, as well as substantial know-how and trade secrets.

Our *Niobe* ES system is the latest generation of the *Niobe* Robotic Magnetic Navigation System (“*Niobe* system”), which allows physicians to more effectively navigate proprietary catheters, guidewires and other delivery devices, both our own and those we are co-developing through strategic alliances, through the blood vessels and chambers of the heart to treatment sites in order to effect treatment. This is achieved using computer-controlled, externally applied magnetic fields that precisely and directly govern the motion of the internal, or working, tip of the catheter, guidewire or other interventional devices. We believe that our *Niobe* ES system represents a revolutionary technology in the interventional lab, bringing precise remote digital instrument control and programmability to the interventional lab, and has the potential to become the standard of care for a broad range of complex cardiology procedures.

The *Niobe* system is designed primarily for use by interventional electrophysiologists in the treatment of abnormal heart rhythms known as arrhythmias and approximately 3% of usage is by interventional cardiologists in the treatment of coronary artery disease. To date the significant majority of Stereotaxis installations worldwide are intended for use in electrophysiology. The *Niobe* system is designed to be installed in both new and replacement interventional labs worldwide. Current and potential purchasers of our *Niobe* system include leading research and academic hospitals as well as community and regional medical centers around the world. The core components of the *Niobe* system have received regulatory clearance in the U.S., Canada, Europe, China, and various other countries.

Stereotaxis has also developed the *Odyssey* Solution which provides an innovative enterprise solution for integrating, recording and networking interventional lab information within hospitals and around the world. The *Odyssey* Solution consists of several lab solutions including *Odyssey* Vision to consolidate all of the lab information from multiple sources, freeing doctors from managing complex interfaces during patient therapy for optimal procedural and clinical efficiency. In addition, we offer two lower cost alternatives which consolidate the lab information without providing a large display and an interface for connecting partner large display systems - known as *Odyssey* Link and *Odyssey* Interface, respectively. The *Odyssey* Solution also includes a remote procedure viewing and recording capability in a basic *Odyssey* Cinema LT or premium *Odyssey* Cinema Studio offering (“*Odyssey* Cinema system”). The *Odyssey* Cinema system is an innovative solution delivering synchronized content targeted to improve care, enhance performance, increase referrals and market services. This tool includes an archiving capability that allows clinicians to store and replay entire procedures or segments of procedures. This information can be accessed from locations throughout the hospital local area network and over the Internet from anywhere with sufficient bandwidth. The *Odyssey* Cinema Studio offering includes a production console, Studio, to facilitate Internet broadcasting, collaboration and presentation editing. The Studio console leverages a global *Odyssey* Network enabling hospitals to broadcast to anyone or collaborate between hospitals that use the *Odyssey* system. The *Odyssey* Solution may be acquired either as part of the *Epoch* Solution or on a stand-alone basis for installation in interventional labs and other locations where clinicians desire improved clinical workflows and related efficiencies. We have received regulatory clearance, licensing and/or CE Mark approvals necessary for us to market the *Odyssey* Solution in the U.S., Canada, European Union and some other countries and we are in the process of obtaining necessary approvals for extending our markets in other countries.

Our *Vdrive* Robotic Navigation System provides navigation and stability for diagnostic and therapeutic devices designed to improve interventional procedures. The *Vdrive* Robotic Navigation System complements the *Niobe* ES system control of therapeutic catheters for fully remote procedures and enables single-operator workflow and is sold as two options, the *Vdrive* System and the *Vdrive* Duo System. In addition to the *Vdrive* System and the *Vdrive* Duo System, we also manufacture and market various disposable components which can be manipulated by these systems. We have received the CE Mark and regulatory licensing that allows us to market certain configurations of the *Vdrive* System and the *Vdrive* Duo System in Europe and Canada. We are in the process of obtaining the necessary clearance for the V-loop device in the United States.

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We promote the full Epoch Solution in a typical hospital implementation, subject to regulatory approvals or clearances. The full Epoch Solution implementation requires a hospital to agree to an upfront capital payment and recurring payments. The upfront capital payment typically includes equipment and installation charges. The recurring payments typically include disposable costs for each procedure, equipment service costs beyond warranty period, and software licenses and Odyssey Network fees. In hospitals where the full Epoch Solution has not been implemented, equipment upgrade or expansion can be implemented upon purchasing of the necessary upgrade or expansion.

We incurred net losses of approximately \$19.9 million and \$32.0 million for the years ended December 31, 2010 and December 31, 2011, respectively, and expect such losses to continue through at least the year ending December 31, 2012. During the quarter ended March 31, 2012, we had an aggregate of approximately \$12.7 million in operating expenses, an operating loss of approximately \$4.2 million, and a net loss of approximately \$5.8 million. On May 8, 2012, we announced that we expect to reduce operating expenses by 15-20% from first quarter levels by the 2012 fourth quarter. We believe our existing cash, cash equivalents and borrowing facilities will be sufficient to fund our operating and investing activities through the next 12 months. However, this estimate is based on the timing of revenue, which can be highly uncertain, as well as the timing of our expenses and other capital needs. Therefore, we cannot assure you that we will not require additional financing before that time.

We were incorporated in Delaware in June 1990 as Stereotaxis, Inc. Our principal executive offices are located at 4320 Forest Park Avenue, Suite 100, St. Louis, Missouri 63108, and our telephone number is (314) 678-6100. Our website address is www.stereotaxis.com. Information contained on our website is not incorporated by reference into and does not form any part of this prospectus. As used in this prospectus, references to “Company”, “we”, “our”, “us” and “Stereotaxis” refer to Stereotaxis, Inc. unless the context requires otherwise. Niobe®, Epoch™ and Odyssey™ are trademarks of Stereotaxis, Inc. All other trademarks that may appear in this prospectus are the property of their respective owners.

Reverse Stock Split

On July 10, 2012, we filed a Certificate of Amendment to our Amended and Restated Certificate of Incorporation to implement a one-for-ten reverse split of our common stock (the “Reverse Stock Split”). The ratio for the Reverse Stock Split was determined by our Board of Directors pursuant to the approval of the stockholders at the Company’s special meeting of stockholders held on July 10, 2012, authorizing the Board to effect a reverse stock split within a range of one-for-four to one-for-ten shares of our common stock. The Reverse Stock Split was effective as of July 10, 2012, and our common stock began trading on the NASDAQ Global Market on a post-split basis on July 11, 2012.

As a result of the Reverse Stock Split, each ten shares of the Company’s issued and outstanding common stock were automatically combined and converted into one issued and outstanding share of common stock. The Reverse Stock Split affected all issued and outstanding shares of the Company’s common stock, as well as common stock underlying stock options, stock appreciation rights, restricted stock units, warrants and convertible debentures outstanding immediately prior to the effectiveness of the Reverse Stock Split. The Reverse Stock Split reduced the number of shares of our common stock currently outstanding from approximately 78.0 million to approximately 7.8 million. In addition, the Amendment increased the number of authorized shares of the Company’s common stock from 100 million to 300 million. The Reverse Stock Split did not alter the par value of common stock, which remained at \$0.001 per share, or modify any voting rights or other terms of our common stock. Unless otherwise indicated, all information set forth herein gives effect to such Reverse Stock Split.

Selected Financial Data

The following selected consolidated financial data for the years ended December 31, 2011, 2010, 2009, 2008 and 2007 and for the balance sheet data as of December 31, 2011, 2010, 2009, 2008 and 2007 have been derived from, and should be read in conjunction with our financial statements and the accompanying notes and “Management’s Discussion and Analysis of Financial Condition and Results of Operations” included in our Annual Reports on Forms 10-K. The selected financial data for the three months ended March 31, 2012 and 2011 and the balance sheet data as of March 31, 2012 and 2011 are derived from the unaudited financial statements filed on Form 10-Q. The selected data in this section is not intended to replace the financial statements. Historical results are not indicative of the results to be expected in the future. As described above, on July 10, 2012, we effected a one-for-ten Reverse Stock Split of our common stock. All information set forth in the selected consolidated financial data gives effect to such Reverse Stock Split.

	(Unaudited)		Year Ended December 31				
	Three Months Ended						
	2012	2011	2011	2010	2009	2008	2007
Consolidated Statements of Operations Data:							
Revenue	\$ 12,283,228	\$ 10,224,704	\$ 41,987,432	\$ 54,051,237	\$ 51,149,555	\$ 40,365,173	\$ 39,298,809
Cost of revenue	3,761,831	3,004,979	12,498,081	15,564,687	17,021,633	14,177,790	15,346,220
Gross margin	8,521,397	7,219,725	29,489,351	38,486,550	34,127,922	26,187,383	23,952,589
Operating costs and expenses:							
Research and development	2,825,207	3,394,259	12,886,488	12,244,163	14,260,854	17,422,828	25,471,809
Sales and marketing	5,998,739	8,338,336	31,635,415	30,178,818	28,694,540	28,660,663	29,021,117
General and administrative	3,872,873	4,250,269	16,908,656	15,022,689	15,010,490	21,121,164	18,701,726
Total operating expenses	12,696,819	15,982,864	61,430,559	57,445,670	57,965,884	67,204,655	73,194,652
Operating loss	(4,175,422)	(8,763,139)	(31,941,208)	(18,959,120)	(23,837,962)	(41,017,272)	(49,242,063)
Interest and other income (expense), net ⁽¹⁾⁽²⁾	(1,637,490)	(786,794)	(89,967)	(964,367)	(3,656,495)	(2,868,702)	1,120,549
Net loss	\$ (5,812,912)	\$ (9,549,933)	\$ (32,031,175)	\$ (19,923,487)	\$ (27,494,457)	\$ (43,885,974)	\$ (48,121,514)
Basic and diluted net loss per common share, revised for reverse stock split	\$ (1.06)	\$ (1.75)	\$ (5.84)	\$ (3.94)	\$ (6.34)	\$ (12.00)	\$ (13.44)
Shares used in computing basic and diluted net loss per common share, revised for reverse stock split	5,499,315	5,471,967	5,482,626	5,052,200	4,334,432	3,658,508	3,579,397
Consolidated Balance Sheet Data:							
Cash, cash equivalents and short-term investments	\$ 10,468,699	\$ 30,394,919	\$ 13,954,919	\$ 35,248,819	\$ 30,546,550	\$ 30,355,657	\$ 23,656,378
Working capital	(15,382,266)	2,775,658	(6,596,218)	12,395,426	12,878,277	10,097,082	16,925,716
Total assets	36,792,346	60,548,975	39,931,832	65,761,792	56,120,516	59,440,365	60,475,794
Long-term debt, less current maturities	12,720,806	7,000,000	17,290,531	8,000,000	10,346,655	12,036,723	1,000,000
Accumulated deficit	(381,220,358)	(352,926,204)	(375,407,446)	(343,376,271)	(323,452,784)	(295,958,327)	(252,072,353)
Total stockholders' equity (deficit)	(23,368,532)	1,834,887	(18,828,895)	10,475,246	7,641,343	4,770,681	24,194,407

(1) Other income recorded in 2010 includes \$1.5 million in grants under the Qualifying Therapeutic Discovery Project Program.

(2) Other income (expense) for the three months ended March 31, 2012 and 2011 includes \$(0.2) million and less than \$0.1 million in warrant adjustments, respectively. Other income recorded in 2011, 2010, and 2009 includes \$3.4 million, \$0.6 million, and \$0.9 million in warrant adjustments, respectively.

Securities Being Offered

On May 7, 2012, we entered into a Stock and Warrant Purchase Agreement (the "PIPE SPA") with the selling stockholders hereunder pursuant to which we sold an aggregate of approximately 21.7 million shares of our common stock (the "PIPE Common Stock") at a price of \$0.3361 per share, together with six-year warrants at a price of \$0.125 per share to purchase an aggregate of approximately 21.7 million shares of our common stock having an exercise price of \$0.3361 per share (the "PIPE Warrants"), in each case prior to giving effect to the Reverse Stock Split. Each purchaser thereunder received a PIPE Warrant to purchase one share of common stock for every share of PIPE Common Stock purchased. That transaction closed on May 10, 2012. In connection therewith, each of the selling stockholders, as well as certain other of our existing stockholders delivered voting agreements (the "Voting Agreements"), pursuant to which each such stockholder agreed to vote shares beneficially held by the stockholder in favor of certain matters (the "Stockholder Approval Matters") intended to increase the number of the authorized and unissued shares of our common stock, a potential reverse stock split and the transactions described below under "—Concurrent Transactions—Subordinated Convertible Debentures."

As described above, on July 10, 2012, we effected a one-for-ten Reverse Stock Split of our common stock. As a result, the PIPE Common Stock was combined and converted into an aggregate of approximately 2.17 million shares of our common stock, and the PIPE Warrants became exercisable for an aggregate of approximately 2.17 million shares, with an exercise price of \$3.361 per share.

Net proceeds from the sale of the securities under the PIPE SPA were approximately \$9.1 million, after placement agent fees and other offering expenses.

We used the funds to repay \$7 million of the revolving credit facility guaranteed by Alafi Capital Company and affiliates of Sanderling Venture Partners, as described further below, and the balance we plan to use for working capital, and for general corporate purposes.

This registration statement is being filed pursuant to a registration rights agreement with the purchasers of the PIPE Common Stock (the “PIPE Registration Rights Agreement”), under which we agreed to undertake to file a resale registration statement, on behalf of the selling stockholders, with respect to the resale of the PIPE Common Stock and shares underlying the PIPE Warrants and to use our commercially reasonable efforts to cause such resale registration statement to be declared effective by the Securities and Exchange Commission (the “SEC”) not later than 60 calendar days (or, in the event the SEC comments on the Registration Statement, 90 calendar days) following the closing. If we are unable to timely satisfy such deadlines, we could incur penalties of up to 10% of the offering proceeds for such non-compliance. In addition, we expect to register an additional 1,518,109 shares issuable upon exercise of PIPE Warrants and an additional 517,422 shares issuable in connection with amendment two through six of the Note and Warrant Purchase Agreement described below under “Concurrent Transactions – Extension of Silicon Valley Bank Loan and Sanderling/Alafi Credit Support” issued to Alafi Capital Company and the Sanderling Venture Partners’ affiliates. We did not include those shares in the registration statement of which this prospectus is a part because we had insufficient authorized shares of common stock at the time this registration statement was originally filed.

The foregoing description is qualified in its entirety by the terms of the PIPE SPA, PIPE Registration Rights Agreement, Voting Agreements, and PIPE Warrants, the forms of which are incorporated herein by reference.

Concurrent transactions

Subordinated Convertible Debentures

On May 7, 2012, we also entered into a Securities Purchase Agreement (the “Convertible Debt SPA”) with certain institutional investors whereby we agreed to sell an aggregate of approximately \$8.5 million in aggregate principal amount of unsecured, subordinated, convertible debentures (the “Debentures”), which became convertible into shares of our common stock at a conversion price of \$3.361 per share (or approximately 2.5 million shares in the aggregate), on July 10, 2012, the date that we received approval of the Stockholder Approval Matters. The purchasers of the Debentures also received six-year warrants to purchase an aggregate of

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approximately 2.5 million shares of our common stock at an exercise price of \$3.361 per share (the “Convertible Debt Warrants”). In addition, we have the ability to issue shares of our common stock in lieu of cash interest payments under certain circumstances, and intend to do so at such time as we have registered the shares for resale as described below. This transaction also closed on May 10, 2012. No shares of common stock were issuable upon conversion of the Debentures or exercise of the Warrants, as applicable, prior to the date we received approval of the Stockholder Approval Matters described above.

Net proceeds from the sale of securities under the Convertible Debt SPA were approximately \$7.7 million, after placement agent fees and other offering expenses, which are being used for working capital, and for general corporate purposes.

In connection with the transactions contemplated by the Convertible Debt SPA, the purchasers of the Debentures entered into a subordination agreement with Silicon Valley Bank pursuant to which payments under the Debentures are subordinated in right of payment to all obligations of the Company to Silicon Valley Bank, subject to certain exceptions including our right to make regularly scheduled, non-accelerated payment of non-default cash interest payment as and when due and payable under the Debentures until the earlier of (i) four months after the date of the Subordination Agreement and (ii) such time as we have the ability under our charter documents and applicable law to settle such interest payments by issuing our common stock in accordance with the terms of the Debentures.

Pursuant to a registration rights agreement entered into with the purchasers of the Convertible Debt SPA (the “Convertible Debt Registration Rights Agreement”), we filed a resale registration statement on behalf of the investors under the Convertible Debt SPA with respect to the resale of the common stock issuable under the Debentures and Convertible Debt Warrants, including the interest shares as described above, and agreed to use our commercially reasonable efforts to cause such resale registration statement to be declared effective by the SEC not later than 90 calendar days (or, in the event the SEC comments on the Registration Statement, 120 calendar days) following the closing. If we are unable to timely satisfy such deadlines, we could incur penalties of up to 10% of the offering proceeds for such non-compliance.

The foregoing description is qualified in its entirety by the terms of the Convertible Debt SPA, Debentures, Convertible Debt Registration Rights Agreement, Subordination Agreement, and Convertible Debt Warrants, the forms of which are incorporated herein by reference.

Extension of Silicon Valley Bank Loan and Sanderling/Alafi Credit Support

In connection with the above closing and funding of the above transactions, we and one of our wholly-owned subsidiaries (the “Subsidiary”) entered into a Third Loan Modification Agreement (Domestic), amending the Second Amended and Restated Loan and Security Agreement (Domestic), dated November 11, 2011 (the “Amended Loan Agreement”), with Silicon Valley Bank to extend the maturity of the current working capital line of credit from May 15, 2012 to March 31, 2013 and decrease the \$10 million sublimit for borrowings supported by guarantees from the Lenders (as described below) to \$3 million. Under the revised facility we are required to maintain a minimum liquidity ratio and a minimum tangible net worth as defined in the Amended Loan Agreement.

Also in connection with the above closing and funding of the above transactions, we and the Subsidiary entered into an Export-Import Bank Third Loan Modification Agreement with Silicon Valley Bank (the “Ex-Im Modification Agreement”) to extend the maturity date of the revolving line of credit under that certain Amended and Restated Export-Import Bank Loan and Security Agreement dated November 30, 2011 from May 15, 2012 to March 31, 2013 and reduce the Ex-Im sublimit under the revolving line of credit from \$10 million to \$5 million.

Also in connection with the above closing and funding of the above transactions and with the Silicon Valley Bank extension described above, we entered into a further amendment to the Note and Warrant Purchase Agreement dated February 21, 2008, as amended (the “Note and Warrant Purchase Agreement”), with Alafi Capital Company and affiliates of Sanderling Venture Partners (collectively, the “Lenders”) to decrease from \$10 million in aggregate to \$3 million, and to further extend the Lenders’ obligation to provide either direct loans to us or loan guarantees to our primary bank lender through the earlier of March 31, 2013, the date that we elect to extinguish the guarantee, or the date we receive \$30 million of third party, non-bank financing. We granted to the Lenders warrants (the “2013 Extension Warrants”) to purchase an aggregate of approximately 230,000 shares of common stock in exchange for their extension. The 2013 Extension Warrants have an exercise price of \$3.361 per share.

The Lenders are affiliates of Fred A. Middleton and Christopher Alafi, respectively, each of whom is a member of our board of directors. This facility may also be used by us to guarantee our loan commitments with Silicon Valley Bank, our primary bank lender, through the same extended term.

RISK FACTORS

Investing in our securities involves a high degree of risk. Prior to making a decision about investing in our securities, you should carefully consider the risks described in, or incorporated by reference in, this prospectus, including the risks described below and under the caption “Risk Factors” in our Annual Report on Form 10-K for the year ended December 31, 2011, and in any other reports that we file with the SEC, along with the other information included or incorporated by reference in this prospectus, in evaluating an investment in our common stock. The information included or incorporated by reference in this prospectus may be amended, supplemented or superseded from time to time by other reports we file with the SEC in the future. For a description of these reports and documents, and information about where you can find them, see the sections entitled “Where You Can Find Additional Information” and “Incorporation of Certain Documents by Reference” in this prospectus.

The risks and uncertainties described in this prospectus and the documents incorporated by reference in this prospectus are not the only ones facing us. Additional risks and uncertainties that we do not presently know about or that we currently believe are not material may also adversely affect our business. If any of the risks and uncertainties described in this prospectus or the documents incorporated by reference herein actually occur, our business, financial condition and results of operations could be adversely affected in a material way. As a result, the trading price of our common stock and/or the value of any other securities we may issue may decline, and you might lose part or all of your investment.

We may not be able to comply with debt covenants and may have to repay outstanding indebtedness.

We have financed our operations through equity and convertible debt transactions, a financing of our catheter royalty stream under the Cowen Healthcare facility entered into in November 2011, as well as bank and other borrowings. We recently extended our revolving line of credit, which matures on March 31, 2013, and our Debentures mature on May 10, 2014. In addition, our current convertible debt and other borrowing agreements contain various covenants, including financial covenants under our Silicon Valley Bank line. The covenants in these various agreements are similar, but are not identical in all respects. If we violate our covenants, we could be required to repay the indebtedness as to which that default relates. In addition, as a result of various cross-default provisions in these agreements, a violation of the covenants under one or more of such agreements could trigger our obligation to repay all of our existing indebtedness. We could be unable to make these payments, which could lead to insolvency. Even if we are able to make these payments, it will lead to the lack of availability for additional borrowings under our bank loan agreement due to our borrowing capacity. There can be no assurance that we will be able to maintain compliance with these covenants or that we could replace this source of liquidity if these covenants were to be violated and our loans and other borrowed amounts were forced to be repaid.

We are no longer eligible to use Form S-3, which could impair our capital raising activities.

In addition, as of the date of this prospectus, we are no longer eligible to use Form S-3 as a result of our recent payment default under our facility with Silicon Valley Bank. As a result, we cannot use Form S-3 to register resales of our securities for 12 months following our default, which occurred on April 30, 2012. In addition to the shares covered by the registration statement of which this prospectus is a part, we have the obligation to file additional registration statements covering shares issuable upon conversion of our Debentures and upon exercise of various warrants to purchase our common stock. In addition, we are limited in our ability to file new shelf registration statements on SEC Form S-3 and/or to fully use the remaining capacity on our existing registration statements on SEC Form S-3. Moreover, our public float is below \$75 million and may remain below \$75 million for the foreseeable future. As a result, we may not be eligible to use Form S-3 for primary offerings even though we otherwise would regain the ability to use the form for resale registration statements 12 months following our payment default. We have relied significantly on shelf registration statements on SEC Form S-3 for most of our financings in recent years, and accordingly any such limitations may harm our ability to raise the capital we need. Under these circumstances, until we are again eligible to use Form S-3, we will be required to use a registration statement on Form S-1 to register securities with the SEC or issue such securities in a private placement, which could increase the cost of raising capital.

Our principal stockholders continue to own a large percentage of our voting stock, and they have the ability to substantially influence matters requiring stockholder approval.

Our executive officers, directors and individuals or entities affiliated with them beneficially own or control a substantial percentage of the outstanding shares of our common stock. Moreover, following approval of the Stockholder Approval Matters, certain of our directors and their affiliated funds will have the ability to obtain a substantial portion of our common stock. Accordingly, these executive officers, directors and their affiliates, acting as a group, will have substantial influence over the outcome of corporate actions requiring stockholder approval, including the election of directors, any merger, consolidation or sale of all or substantially all of our assets or any other significant corporate transaction. These stockholders may also delay or prevent a change of control, even if such a change of control would benefit our other stockholders. This significant concentration of stock ownership may adversely affect the trading price of our common stock due to investors' perception that conflicts of interest may exist or arise.

Future issuances of our securities could dilute current stockholders' ownership.

We are registering for resale 650,618 shares of our common stock issuable upon exercise of warrants held by certain selling stockholders identified in this prospectus. In addition, as a result of the approval of the Stockholder Approval Matters we received on July 10, 2012, we intend to file one or more prospectuses for the resales of an additional 1,518,109 shares issuable upon exercise of

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PIPE Warrants and an additional 517,422 shares issuable in connection with amendments two through six of the Note and Warrant Purchase Agreement issued to Alafi Capital Company and the Sanderling Venture Partners' affiliates, as well as shares issuable on conversion of the Debentures and upon exercise of the Convertible Debt Warrants. When issued, those securities would become convertible or exercisable into approximately 5.0 million shares of our common stock. Moreover, we expect to pay interest on the Debentures using shares of our common stock following the approval of the Stockholder Approval Matters. The exercise price of most of these securities (including all of the PIPE Warrants, the Debentures and the Convertible Debt Warrants) is \$3.361 as a result of the Reverse Stock Split. A significant number of shares of our common stock are subject to stock options and stock appreciation rights, and we may request the ability to issue additional such securities to our employees. We may also decide to raise additional funds through public or private debt or equity financing to fund our operations. While we cannot predict the effect, if any, that future sales of debt, our common stock, other equity securities or securities convertible into our common stock or other equity securities or the availability of any of the foregoing for future sale, will have on the market price of our common stock, it is likely that sales of substantial amounts of our common stock (including shares issued upon the exercise of stock options, stock appreciation rights or the conversion of any convertible securities outstanding now or in the future), or the perception that such sales could occur, will adversely affect prevailing market prices for our common stock.

If we fail to continue to meet all applicable Nasdaq Global Market requirements and Nasdaq determines to delist our common stock, the delisting could adversely affect the market liquidity of our common stock, impair the value of your investment and harm our business.

Our common stock is currently listed on the Nasdaq Global Market. In order to maintain that listing, we must satisfy minimum financial and other requirements. On January 20, 2012, we received notice from the Nasdaq Listing Qualifications Department that our common stock had not met the \$1.00 per share minimum bid price requirement for 30 consecutive business days and that, if we were unable to demonstrate compliance with this requirement during the applicable grace periods, our common stock would be delisted after that time. The closing bid price of our common stock on the Nasdaq Global Market has been below \$1.00 each trading day since December 6, 2011, through July 10, 2012. We have implemented the Reverse Stock Split of one-for-ten following shareholder approval of that action on July 10, 2012 in an attempt to put our stock in compliance with the minimum bid price requirement. However, the Reverse Stock Split may not prevent the common stock from dropping back down below the Nasdaq minimum per share price requirement in the future. In addition, on June 25, 2012, Nasdaq notified us that we no longer comply with the rule regarding market value of publicly held shares, as we did not maintain a publicly held market value of \$15 million for the 30 consecutive business days prior to the date of the letter. In accordance with applicable Nasdaq rules, we are being provided 180 calendar days, or until December 24, 2012, to regain compliance with that rule. However, we may be unable to do so in that time frame, or at all. It is also possible that we would otherwise fail to satisfy another Nasdaq requirement for continued listing of our common stock. If we fail to continue to meet all applicable Nasdaq Global Market requirements in the future and Nasdaq determines to delist our common stock, the delisting could adversely affect the market liquidity of our common stock, adversely affect our ability to obtain financing for the continuation of our operations and harm our business. This delisting could also impair the value of your investment.

FORWARD-LOOKING STATEMENTS

The prospectus contains "forward-looking" statements within the meaning of the Private Securities Litigation Reform Act of 1995. These statements relate to, among other things:

- our business strategy;
- our value proposition;
- our ability to fund operations;
- our ability to convert backlog to revenue;
- the timing and prospects for regulatory approval of our additional disposable interventional devices;
- the success of our business partnerships and strategic alliances;
- our estimates regarding our capital requirements;
- the ability of physicians to perform certain medical procedures with our products safely, effectively and efficiently;
- the adoption of our products by hospitals and physicians;
- the market opportunity for our products, including expected demand for our products;
- our plans for hiring additional personnel; and
- any of our other plans, objectives, expectations and intentions contained or incorporated into this prospectus that are not historical facts.

These statements relate to future events or future financial performance, and involve known and unknown risks, uncertainties, and other factors that may cause our actual results, levels of activity, performance or achievements to be materially different from any future results, levels of activity, performance or achievements expressed or implied by such forward-looking statements. In some cases, you can identify forward-looking statements by terminology such as “may”, “will”, “should”, “could”, “expects”, “plans”, “intends”, “anticipates”, “believes”, “estimates”, “predicts”, “potential”, or “continue”, or the negative of such terms or other comparable terminology. Although we believe that the expectations reflected in the forward-looking statements are reasonable, we cannot guarantee future results, levels of activity, performance, or achievements. These statements are only predictions.

Factors that may cause our actual results to differ materially from our forward-looking statements include, among others, changes in general economic and business conditions and the risks and other factors set forth in “Item 1A—Risk Factors” and elsewhere in our Annual Report on Form 10-K for the year ended December 31, 2011.

Our actual results may be materially different from what we expect. We undertake no duty to update these forward-looking statements after the date of this prospectus, even though our situation may change in the future. We qualify all of our forward-looking statements by these cautionary statements.

USE OF PROCEEDS

We will not receive any proceeds from the selling stockholders' sales of our common stock. We could receive up to a maximum of approximately \$2,186,727 million in proceeds from the cash exercise of all the warrants held by the selling stockholders and covered by this prospectus, which proceeds would be used for working capital and general corporate purposes. As of the date hereof, none of the warrants have been exercised.

SELLING STOCKHOLDERS

As described above, on May 7, 2012, we entered into the PIPE SPA with Alafi Capital Company LLC, certain affiliates of Sanderling Venture Partners, and certain affiliates of the Franklin Templeton funds and identified below whereby we sold an aggregate of approximately 21.7 million shares of PIPE Common Stock at a price of \$0.3361 per share, together with PIPE Warrants to purchase an aggregate of approximately 21.7 million shares of common stock at a price of \$0.125 per share having an exercise price of \$0.3361 per share, in each case prior to giving effect to the Reverse Stock Split. Each purchaser thereunder received a PIPE Warrant to purchase one share of common stock for every share of PIPE Common Stock purchased.

On July 10, 2012, we effected a one-for-ten Reverse Stock Split of our common stock. As a result, the PIPE Common Stock was combined and converted into an aggregate of approximately 2.17 million shares of our common stock, and the PIPE Warrants became exercisable for approximately 2.17 million shares, with an exercise price of \$3.361 per share. All of the information (including the number of shares outstanding as of June 29, 2012) has been adjusted to reflect the Reverse Stock Split, except where indicated.

This prospectus relates to the sale or other disposition of 2,168,727 shares of PIPE Common Stock and 650,618 shares of common stock underlying the PIPE Warrants issued to the affiliates of Franklin Templeton described below, or their respective transferees. The issuance of the shares upon exercise of PIPE Warrants is not covered by this prospectus; only the resale of the shares underlying warrants are covered. The shares issuable upon exercise of the PIPE Warrants issued to Alafi Capital Company LLC and the Sanderling Venture Partners affiliates is also not covered by this prospectus. The average weighted exercise price of the warrants is \$3.361 per share.

In addition, under the terms of the PIPE Warrants, a selling stockholder may not exercise the PIPE Warrants to the extent such selling stockholder or any of its affiliates would beneficially own more than 19.999% of our common stock. The numbers of shares set forth in the table below, however, do not reflect this limitation.

We have filed with the SEC, under the Securities Act, a registration statement on Form S-1, of which this prospectus forms a part, with respect to the resale of the shares issuable upon exercise of the warrants from time to time on the Nasdaq Global Market, in privately-negotiated transactions, or otherwise. We have agreed with the selling stockholders to keep the registration statement of which this prospectus constitutes a part effective until the earlier of (1) such time as all of the shares covered by this prospectus have been disposed of pursuant to and in accordance with the registration statement or (2) the date on which all of the shares may be sold without restriction pursuant to Rule 144 of the Securities Act.

The following table sets forth the name of each selling stockholder, the number of shares of our common stock known by us to be beneficially owned by each selling stockholder as of June 29, 2012, the number of shares of our common stock that may be offered for resale for the account of each selling stockholder pursuant to this prospectus and the number of shares of our common stock to be held by each selling stockholder after the sale of all of the shares covered by this prospectus by that selling stockholder. The information is based on information provided by or on behalf of the selling stockholders. The selling stockholders may offer all, some or none of the common stock. Because the selling stockholders may offer all or some portion of the common stock, we cannot estimate the amount of the common stock that will be held by the selling stockholders upon termination of any of these sales. In addition the selling stockholders identified below may have sold, transferred or otherwise disposed of all or a portion of their common stock since the date on which they provided the information regarding their common stock in transactions exempt from the registration requirements of the Securities Act. Percentage ownership is based on 7,808,190 shares of common stock outstanding as of June 29, 2012.

The selling stockholders may sell all, some or none of the common stock being offered. This information is based upon our review of public filings, our stockholder, optionholder and warrant holder registers and information furnished by the selling stockholders.

<u>Selling Stockholder</u>	<u>Shares Beneficially Owned Prior to the Offering (1)(2)</u>	<u>Shares Offered by This Prospectus</u>	<u>Shares Beneficially Owned Subsequent to the Offering (1)(2)(3)</u>	
			<u>Shares</u>	<u>Percent</u>
Alafi Capital Company LLC (4)	2,704,480	867,491	1,836,989 (5)	19.87
Sanderling Venture Partners VI Co-Investment Fund, L.P. (6)	1,958,537 (7)	624,112	1,334,425 (7)	14.85
Sanderling Ventures Management VI (6)	127,516 (8)	26,506	101,010 (8)	1.28
Franklin Strategic Series – Franklin Small-Mid Cap Growth Fund (9)	1,296,152	1,031,152 (10)	265,000	3.18
Franklin Templeton Variable Insurance Products Trust – Franklin Small-Mid Cap Growth Securities Fund (9)	308,827	245,687 (11)	63,140	*
Franklin Templeton Investment Funds – Franklin U.S. Small-Mid Cap Growth Fund (9)	30,667	24,397 (12)	6,270	*
Total Number of Shares Offered		2,819,345		

* Less than 1%

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- (1) Beneficial ownership is determined in accordance with the rules of the SEC and generally includes voting or investment power with respect to securities.
- (2) Under the terms of the PIPE Warrants, a selling stockholder may not exercise such PIPE Warrant to the extent that such selling stockholder or any of its affiliates would beneficially own more than 19.999% of our common stock. For purposes of completing the Selling Stockholder table above, we have disregarded this limitation.
- (3) Assumes for each stockholder the exercise in full of the warrant held by such stockholder and the sale of all shares offered hereby.
- (4) Christopher Alafi, one of our directors and Moshe Alafi are the managing partners of Alafi Capital Company and have full voting and investment power with respect to the shares owned by Alafi Capital Company. Alafi Capital Company has waived our obligation to reserve shares for issuance under warrants held by such entity.
- (5) Includes warrants to purchase an aggregate of 1,437,852 shares of our common stock.
- (6) Mr. Fred A. Middleton, one of our directors, is affiliated with Sanderling Venture Partners VI Co-Investment Fund, L.P. and Sanderling Ventures Management VI. These funds (and their affiliates) have waived our obligation to reserve shares for issuance under warrants held by such entities. Middleton, McNeil, Mills & Associates, VI, LLC is the Investment General Partner of Sanderling Venture Partners VI Co-Investment Fund, L.P. and has voting and dispositive power over the shares owned by such entity. Sanderling Venture Partners VI Co-Investment Fund, L.P. is managed by its managing directors, Fred A. Middleton, Robert G. McNeil, Timothy C. Mills and Timothy J. Wollaeger. Such individuals disclaim beneficial ownership of all such shares held by the foregoing funds, except to the extent of their proportionate pecuniary interests therein. Sanderling Ventures Management VI is managed by Fred A. Middleton, Robert G. McNeil, Timothy C. Mills and Timothy J. Wollaeger, the individuals who have invested under the d/b/a Sanderling Ventures Management VI, which individuals have voting and dispositive power over the shares owned by Sanderling Ventures Management VI. Such individuals disclaim beneficial ownership of all such shares held by the foregoing funds, except to the extent of their proportionate pecuniary interests therein. In addition to the securities being registered herein, affiliates of Sanderling Venture Partners hold (i) 292,793 shares of our common stock and (ii) warrants to purchase up to 23,418 shares of our common stock. Mr. Middleton is also a managing director of such affiliated entities and shares voting and dispositive power with such shares. Mr. Middleton disclaims beneficial ownership of all such shares held by such affiliated funds, except to the extent of his proportionate pecuniary interests therein
- (7) Includes warrants to purchase an aggregate 1,176,265 shares of our common stock.
- (8) Includes warrants to purchase an aggregate of 99,399 shares of our common stock.
- (9) Edward Jamieson, Michael McCarthy and James Cross have the power to vote or dispose of the securities offered for resale under this prospectus and may be deemed to be the beneficial owner or control person for such shares.
- (10) The number of shares offered includes 515,576 shares of common stock and 515,576 shares of common stock issuable upon exercise of a PIPE Warrant purchased at the closing of the private placement.
- (11) The number of shares offered includes 122,843 shares of common stock and 122,843 shares of common stock issuable upon exercise of a PIPE Warrant purchased at the closing of the private placement.
- (12) The number of shares offered includes 12,199 shares of common stock and 12,199 shares of common stock issuable upon exercise of a PIPE Warrant purchased at the closing of the private placement.

PLAN OF DISTRIBUTION

The selling stockholders, which as used herein includes donees, pledgees, transferees or other successors-in-interest selling shares of common stock or interests in shares of common stock received after the date of this prospectus from a selling stockholder as a gift, pledge, partnership distribution or other transfer, may, from time to time, sell, transfer or otherwise dispose of any or all of their shares of common stock or interests in shares of common stock on any stock exchange, market or trading facility on which the shares are traded or in private transactions. These dispositions may be at fixed prices, at prevailing market prices at the time of sale, at prices related to the prevailing market price, at varying prices determined at the time of sale, or at negotiated prices.

The selling stockholders may use any one or more of the following methods when disposing of shares or interests therein:

- ordinary brokerage transactions and transactions in which the broker-dealer solicits purchasers;
- block trades in which the broker-dealer will attempt to sell the shares as agent, but may position and resell a portion of the block as principal to facilitate the transaction;
- purchases by a broker-dealer as principal and resale by the broker-dealer for its account;
- an exchange distribution in accordance with the rules of the applicable exchange;
- privately negotiated transactions;
- short sales effected after the date the registration statement of which this prospectus is a part is declared effective by the SEC;
- through the writing or settlement of options or other hedging transactions, whether through an options exchange or otherwise;
- broker-dealers may agree with the selling stockholders to sell a specified number of such shares at a stipulated price per share;
- a combination of any such methods of sale; and
- any other method permitted by applicable law.

The selling stockholders may, from time to time, pledge or grant a security interest in some or all of the shares of common stock owned by them and, if they default in the performance of their secured obligations, the pledgees or secured parties may offer and sell the shares of common stock, from time to time, under this prospectus, or under an amendment to this prospectus under Rule 424(b)(3) or other applicable provision of the Securities Act amending the list of selling stockholders to include the pledgee, transferee or other successors in interest as selling stockholders under this prospectus. The selling stockholders also may transfer the shares of common stock in other circumstances, in which case the transferees, pledgees or other successors in interest will be the selling beneficial owners for purposes of this prospectus.

In connection with the sale of our common stock or interests therein, the selling stockholders may enter into hedging transactions with broker-dealers or other financial institutions, which may in turn engage in short sales of the common stock in the course of hedging the positions they assume. The selling stockholders may also sell shares of our common stock short and deliver these securities to close out their short positions, or loan or pledge the common stock to broker-dealers that in turn may sell these securities. The selling stockholders may also enter into option or other transactions with broker-dealers or other financial institutions or the creation of one or more derivative securities which require the delivery to such broker-dealer or other financial institution of shares offered by this prospectus, which shares such broker-dealer or other financial institution may resell pursuant to this prospectus (as supplemented or amended to reflect such transaction).

The aggregate proceeds to the selling stockholders from the sale of the common stock offered by them will be the purchase price of the common stock less discounts or commissions, if any. Each of the selling stockholders reserves the right to accept and, together with their agents from time to time, to reject, in whole or in part, any proposed purchase of common stock to be made directly or through agents. We will not receive any of the proceeds from this offering. Upon any exercise of the warrants by payment of cash, however, we will receive the exercise price of the warrants.

The selling stockholders also may resell all or a portion of the shares in open market transactions in reliance upon Rule 144 under the Securities Act of 1933, provided that they meet the criteria and conform to the requirements of that rule.

The selling stockholders and any underwriters, broker-dealers or agents that participate in the sale of the common stock or interests therein may be “underwriters” within the meaning of Section 2(11) of the Securities Act. Any discounts, commissions, concessions or profit they earn on any resale of the shares may be underwriting discounts and commissions under the Securities Act. Selling stockholders who are “underwriters” within the meaning of Section 2(11) of the Securities Act will be subject to the prospectus delivery requirements of the Securities Act.

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To the extent required, the shares of our common stock to be sold, the names of the selling stockholders, the respective purchase prices and public offering prices, the names of any agents, dealer or underwriter, any applicable commissions or discounts with respect to a particular offer will be set forth in an accompanying prospectus supplement or, if appropriate, a post-effective amendment to the registration statement that includes this prospectus.

In order to comply with the securities laws of some states, if applicable, the common stock may be sold in these jurisdictions only through registered or licensed brokers or dealers. In addition, in some states the common stock may not be sold unless it has been registered or qualified for sale or an exemption from registration or qualification requirements is available and is complied with.

We have advised the selling stockholders that the anti-manipulation rules of Regulation M under the Exchange Act may apply to sales of shares in the market and to the activities of the selling stockholders and their affiliates. In addition, to the extent applicable we will make copies of this prospectus (as it may be supplemented or amended from time to time) available to the selling stockholders for the purpose of satisfying the prospectus delivery requirements of the Securities Act. The selling stockholders may indemnify any broker-dealer that participates in transactions involving the sale of the shares against certain liabilities, including liabilities arising under the Securities Act.

We have agreed to indemnify the selling stockholders against liabilities, including liabilities under the Securities Act and state securities laws, relating to the registration of the shares offered by this prospectus.

We have agreed with the selling stockholders to keep the registration statement of which this prospectus constitutes a part effective until the earlier of (1) such time as all of the shares covered by this prospectus have been disposed of pursuant to and in accordance with the registration statement or (2) the date on which all of the shares may be sold without restriction pursuant to Rule 144 of the Securities Act.

DESCRIPTION OF CAPITAL STOCK

As of the date of this prospectus, we are authorized to issue up to 310 million shares of capital stock, par value \$.001 per share, divided into two classes designated, respectively, “common stock” and “preferred stock.” Of such shares authorized, 300 million shares are designated as common stock, and 10 million shares are designated as preferred stock.

The following is a summary of the material terms of our capital stock and certain provisions of our amended and restated certificate of incorporation and amended and restated bylaws. Since the terms of our certificate of incorporation and bylaws, and Delaware law, are more detailed than the general information provided below, you should only rely on the actual provisions of those documents and Delaware law. If you would like to read those documents, they are on file with the SEC, as described under the heading “Where You Can Find Additional Information” below.

On July 10, 2012, we filed a Certificate of Amendment to our Amended and Restated Certificate of Incorporation to implement a one-for-ten reverse split of our common stock (the “Reverse Stock Split”). As a result of the Reverse Stock Split, each ten shares of the Company’s issued and outstanding common stock were automatically combined and converted into one issued and outstanding share of common stock. The Reverse Stock Split affected all issued and outstanding shares of the Company’s common stock, as well as common stock underlying stock options, stock appreciation rights, restricted stock units, warrants and convertible debentures outstanding immediately prior to the effectiveness of the Reverse Stock Split. In addition, the Amendment increased the number of authorized shares of the Company’s common stock from 100 million to 300 million. The Reverse Stock Split did not alter the par value of common stock, which remained at \$.001 per share, or modify any voting rights or other terms of our common stock. Unless otherwise indicated, all information set forth herein gives effect to such Reverse Stock Split.

As of June 29, 2012, there were approximately 78.1 million shares of common stock outstanding that were held of record by approximately 369 stockholders, although we believe that there is a significantly larger number of beneficial owners of our common stock. The Reverse Stock Split reduced the number of shares of our common stock currently outstanding from approximately 78.1 million to approximately 7.8 million. The holders of common stock are entitled to one vote for each share held of record on all matters submitted to a vote of the stockholders. Our stockholders do not have cumulative voting rights in the election of directors. Accordingly, holders of a majority of the shares voting are able to elect all of the directors. Subject to preferences that may be granted to any then outstanding preferred stock, holders of common stock are entitled to receive ratably only those dividends as may be declared by the board of directors out of funds legally available therefor, as well as any distributions to the stockholders. In the event of our liquidation, dissolution or winding up, holders of common stock are entitled to share ratably in all of our assets remaining after we pay our liabilities and distribute the liquidation preference of any then outstanding preferred stock. Holders of common stock have no preemptive or other subscription or conversion rights. There are no redemption or sinking fund provisions applicable to the common stock.

Anti-Takeover Provisions of Delaware Law and Charter Provisions

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

- before such date, the board of directors of the corporation approved either the business combination or the transaction that resulted in the stockholder becoming an interested stockholder;
- upon consummation of the transaction that resulted in the stockholder becoming an interested stockholder, the interested stockholder owned at least 85% of the voting stock of the corporation outstanding at the time the transaction began, excluding for purposes of determining the number of shares outstanding those shares owned by persons who are directors and also officers and by employee stock plans in which employee participants do not have the right to determine confidentially whether shares held subject to the plan will be tendered in a tender or exchange offer; or
- on or after such date, the business combination is approved by the board of directors and authorized at an annual or special meeting of the stockholders, and not by written consent, by the affirmative vote of at least 66 2/3% of the outstanding voting stock that is not owned by the interested stockholder.

Section 203 defines “business combination” to include the following:

- any merger or consolidation involving the corporation and the interested stockholder;
- any sale, transfer, pledge or other disposition involving the interested stockholder of assets with a value of 10% or more of either the total assets or all outstanding stock of the corporation;
- subject to certain exceptions, any transaction that results in the issuance or transfer by the corporation of any stock of the corporation to the interested stockholder;
- any transaction involving the corporation that has the effect of increasing the proportionate share of the stock or any class or series of the corporation beneficially owned by the interested stockholder; or
- the receipt by the interested stockholder of the benefit of any loans, advances, guarantees, pledges or other financial benefits by or through the corporation.

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

In addition, some provisions of our amended and restated certificate of incorporation and amended and restated bylaws may be deemed to have an anti-takeover effect and may delay or prevent a tender offer or takeover attempt that a stockholder might consider in its best interest, including those attempts that might result in a premium over the market price for the shares held by stockholders.

Cumulative Voting. Our amended and restated certificate of incorporation expressly denies stockholders the right to cumulative voting in the election of directors.

Classified Board of Directors. Our board of directors is divided into three classes of directors serving staggered three-year terms. As a result, approximately one-third of the board of directors is elected each year, which has the effect of requiring at least two annual stockholder meetings, instead of one, to replace a majority of the members of the board. These provisions, when coupled with the provision of our amended and restated certificate of incorporation authorizing only the board of directors to fill vacant directorships or increase the size of the board of directors, may deter a stockholder from removing incumbent directors and simultaneously gaining control of the board of directors by filling the vacancies created by such removal with its own nominees. The certificate of incorporation also provides that directors may be removed by stockholders only for cause. Since the board of directors has the power to retain and discharge our officers, these provisions could also make it more difficult for existing stockholders or another party to effect a change in management.

Stockholder Action; Special Meeting of Stockholders. Our amended and restated certificate of incorporation and bylaws do not permit stockholders to act by written consent. They provide that special meetings of our stockholders may be called only by the chairman of our board of directors, our chief executive officer or a majority of our directors. Further, our amended and restated certificate of incorporation provides that the stockholders may amend bylaws adopted by the board of directors or specified provisions of the certificate of incorporation by the affirmative vote of at least 66 2/3% of our capital stock.

Advance Notice Requirements for Stockholder Proposals and Directors Nominations. Our amended and restated bylaws provide that stockholders seeking to bring business before an annual meeting of stockholders, or to nominate candidates for election as directors at an annual meeting of stockholders, must provide timely notice in writing. To be timely, a stockholder’s notice must be delivered to or mailed and received at our principal executive offices not more than 120 days or less than 90 days prior to the anniversary date of the immediately preceding annual meeting of stockholders. However, in the event that the annual meeting is called for a date that is not within 30 days before or after such anniversary date, notice by the stockholder in order to be timely must be received not later than the close of business on the 10th day following the date on which notice of the date of the annual meeting was mailed to stockholders or made public, whichever first occurs. Our amended and restated bylaws also specify requirements as to the form and content of a stockholder’s notice. These provisions may preclude stockholders from bringing matters before an annual meeting of stockholders or from nominating directors at an annual meeting of stockholders.

Authorized But Unissued Shares. Our authorized but unissued shares of common stock and preferred stock are available for future issuance without stockholder approval. These additional shares may be utilized for a variety of corporate purposes, including future public offerings to raise additional capital, corporate acquisitions and employee benefit plans. The existence of authorized but unissued shares of common stock and preferred stock could render more difficult or discourage an attempt to obtain control of Stereotaxis by means of a proxy contest, tender offer, merger or otherwise.

Amendments; Supermajority Vote Requirements. The Delaware General Corporation Law provides generally that the affirmative vote of a majority of the shares entitled to vote on any matter is required to amend a corporation’s certificate of incorporation or bylaws, unless either a corporation’s certificate of incorporation or bylaws require a greater percentage. Our amended and restated certificate of incorporation will impose supermajority vote requirements of 66 2/3% of the voting power of our capital stock in connection with the amendment of certain provisions of our amended and restated certificate of incorporation and amended and restated bylaws, including those provisions relating to the classified board of directors, action by written consent and the ability of stockholders to call special meetings.

Nasdaq Global Market Listing

Our common stock is listed on the Nasdaq Global Market under the symbol “STXS”.

Transfer Agent And Registrar

The transfer agent and registrar for our common stock is Broadridge Corporate Issuer Solutions, Inc. Its address is 1717 Arch St., Suite 130, Philadelphia, PA 10103, and its telephone number is (215) 553-5400.

LEGAL MATTERS

The validity of the securities offered hereby has been passed upon for us by Bryan Cave LLP, St. Louis, Missouri. James L. Nouss, Jr., a partner of our legal counsel Bryan Cave LLP, beneficially owns 1,172 shares of our common stock.

EXPERTS

Ernst & Young LLP, independent registered public accounting firm, has audited our financial statements and schedule included in our Annual Report on Form 10-K for the year ended December 31, 2011, and the effectiveness of our internal control over financial reporting as of December 31, 2011, as set forth in their reports (which contains an explanatory paragraph describing conditions that raise substantial doubt about the Company's ability to continue as a going concern as described in Note 1 to the consolidated financial statements), which are incorporated by reference in the registration statement. Our financial statements and schedule and the effectiveness of our internal control over financial reporting as of December 31, 2011 are incorporated herein by reference in reliance on Ernst & Young LLP's reports, given on the authority of such firm as experts in accounting and auditing.

WHERE YOU CAN FIND ADDITIONAL 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., 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 have filed with the SEC a registration statement under the Securities Act of 1933 that registers the distribution of these securities. The registration statement, including the attached exhibits and schedules, contains additional relevant information about us and the securities. This prospectus does not contain all of the information set forth in the registration statement. You can get a copy of the registration statement, at prescribed rates, from the SEC at the address listed above. The registration statement and the documents referred to below under "Incorporation of Certain Documents by Reference" are also available on our Internet website, <http://www.stereotaxis.com>, under "Investors—All SEC Filings." We have not incorporated by reference into this prospectus the information on our website, and you should not consider it to be a part of this prospectus.

INCORPORATION OF CERTAIN DOCUMENTS BY REFERENCE

The SEC allows us to "incorporate by reference" information into this prospectus, which means we can disclose important information to you by referring you to other documents that we filed separately with the SEC. You should consider the incorporated information as if we reproduced it in this prospectus.

We incorporate by reference into this prospectus the following documents (SEC File No. 000-50884), which contain important information about us and our business and financial results:

- our Annual Report on Form 10-K for the fiscal year ended December 31, 2011, as amended by our Annual Report on Form 10-K/A for the same period;
- our Quarterly Report on Form 10-Q for the fiscal quarter ended March 31, 2012;
- our Definitive Proxy Statement on Schedule 14A filed June 8, 2012; and
- our Current Reports on Form 8-K filed January 23, 2012, March 5, 2012 (regarding Item 1.01), April 2, 2012, May 2, 2012, May 8, 2012, May 30, 2012, June 29, 2012 and July 10, 2012, and Form 8-K/A filed March 15, 2012.

For purposes of the registration statement of which this prospectus is a part, any statement contained in a document incorporated or deemed to be incorporated herein by reference shall be deemed to be modified or superseded to the extent that a statement contained herein modifies or supersedes such statement in such document. Any statement so modified or superseded shall not be deemed, except as so modified or superseded, to constitute a part of the registration statement of which this prospectus is a part.

You may get copies of any of the document incorporated by reference (excluding exhibits, unless the exhibits are specifically incorporated) at no charge to you by writing or calling the investor relations department at Stereotaxis, Inc. 4320 Forest Park Avenue, Suite 100, St. Louis, Missouri 63108, telephone (314) 678-6100.

PART II
INFORMATION NOT REQUIRED IN PROSPECTUS

Item 14. Other Expenses of Issuances and Distribution.

The following table sets forth the costs and expenses, other than underwriting discounts and commissions, payable by Stereotaxis in connection with the issuance and distribution of the securities being registered. All amounts are estimates except the SEC registration fee.

Securities and Exchange Commission filing fee	\$936.98
Legal fees and expenses	\$15,000.00
Accounting fees and expenses	\$25,000.00
Printing expenses	\$4,000.00
Total expenses	<u>\$44,936.98</u>

Item 15. Indemnification of Directors and Officers.

Our amended and restated certificate of incorporation provides that, to the fullest extent permitted by the Delaware General Corporation Law as the same exists or may hereafter be amended, our directors shall not be liable to the Company or our stockholders for monetary damages for breach of fiduciary duty as a director. In addition, our certificate of incorporation provides that we may, to the fullest extent permitted by law, indemnify any person made or threatened to be made a party to an action, suit or proceeding, whether criminal, civil, administrative or investigative, by reason of the fact that such person or his or her testator or intestate is or was a director, officer or employee of the Company, or any predecessor of the Company, or serves or served at any other enterprise as a director, officer or employee at the request of the Company.

Our amended and restated bylaws provide that the Company shall indemnify our directors and officers to the fullest extent not prohibited by the Delaware General Corporation Law or any other law. We are not required to indemnify any director or officer in connection with a proceeding brought by such director or officer unless (i) such indemnification is expressly required by law; (ii) the proceeding was authorized by our board of directors; or (iii) such indemnification is provided by the Company, in its sole discretion, pursuant to the powers vested in the Company under the Delaware General Corporation Law or any other applicable law. In addition, our bylaws provide that the Company may indemnify its employees and other agents as set forth in the Delaware General Corporation Law or any other applicable law.

We have also entered into separate indemnification agreements with our directors that require us, among other things, to indemnify each of them against certain liabilities that may arise by reason of their status or service with the Company or on behalf of the Company, other than liabilities arising from willful misconduct of a culpable nature. The Company is not required to indemnify under the agreement for (i) actions initiated by the director without the authorization of consent of the board of directors; (ii) actions initiated to enforce the indemnification agreement unless the director is successful; (iii) actions resulting from violations of Section 16 of the Exchange Act in which a final judgment has been rendered against the director; and (iv) actions to enforce any non-compete or non-disclosure provisions of any agreement.

The indemnification provided for above provides for reimbursement of all losses of the indemnified party including, expenses, judgment, fines and amounts paid in settlement. The right to indemnification set forth above includes the right for us to pay the expenses (including attorneys' fees) incurred in defending any such proceeding in advance of its final disposition in certain circumstances.

The Delaware General Corporation Law provides that indemnification is permissible only when the director, officer, employee, or agent acted in good faith and in a manner reasonably believed to be in or not opposed to the best interests of the corporation, and, with respect to any criminal action or proceeding, had no reasonable cause to believe the conduct was unlawful. The Delaware General Corporation Law also precludes indemnification in respect of any claim, issue, or matter as to which an officer, director, employee, or agent shall have been adjudged to be liable to the corporation unless and only to the extent that the Court of Chancery of the State of Delaware or the court in which such action or suit was brought shall determine that, despite such adjudication of liability, but in view of all the circumstances of the case, such person is fairly and reasonably entitled to indemnity for such expenses which the Court of Chancery or such other court deems proper.

We have agreed to indemnify the underwriters and their controlling persons, and the underwriters have agreed to indemnify us and our controlling persons, against certain liabilities, including liabilities under the Securities Act. Reference is made to the Underwriting Agreement filed as part of the exhibits hereto.

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See Item 17 for information regarding our undertaking to submit to adjudication the issue of indemnification for violation of the securities laws.

The Registrant maintains insurance policies that provide coverage to its directors and officers against certain liabilities.

Item 16. Exhibits and Financial Statement Schedules.

The exhibits listed in the accompanying Exhibit Index are filed or incorporated by reference as part of this Registration Statement.

Item 17. Undertakings.

(a) The undersigned registrant hereby undertakes:

- (1) To file, during any period in which offers or sales are being made, a post-effective amendment to this registration statement:
 - (i) To include any prospectus required by section 10(a)(3) of the Securities Act of 1933;
 - (ii) To reflect in the prospectus any facts or events arising after the effective date of the registration statement (or the most recent post-effective amendment thereof) which, individually or in the aggregate, represent a fundamental change in the information set forth in the registration statement. Notwithstanding the foregoing, any increase or decrease in volume of securities offered (if the total dollar value of securities offered would not exceed that which was registered) and any deviation from the low or high end of the estimated maximum offering range may be reflected in the form of prospectus filed with the SEC pursuant to Rule 424(b) (§230.424(b) of this chapter) if, in the aggregate, the changes in volume and price represent no more than 20 percent change in the maximum aggregate offering price set forth in the "Calculation of Registration Fee" table in the effective registration statement.
 - (iii) To include any material information with respect to the plan of distribution not previously disclosed in the registration statement or any material change to such information in the registration statement;
- (2) That, for the purpose of determining any liability under the Securities Act of 1933, each such post-effective amendment shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.
- (3) To remove from registration by means of a post-effective amendment any of the securities being registered which remain unsold at the termination of the offering.
- (4) That, for the purpose of determining liability under the Securities Act of 1933 to any purchaser:
 - (i) Each prospectus filed by the registrant pursuant to Rule 424(b)(3) shall be deemed to be part of the registration statement as of the date the filed prospectus was deemed part of and included in the registration statement; and
 - (ii) Each prospectus required to be filed pursuant to Rule 424(b)(2), (b)(5), or (b)(7) as part of a registration statement in reliance on Rule 430B relating to an offering made pursuant to Rule 415(a)(1)(i), (vii), or (x) for the purpose of providing the information required by section 10(a) of the Securities Act of 1933 shall be deemed to be part of and included in the registration statement as of the earlier of the date such form of prospectus is first used after effectiveness or the date of the first contract of sale of securities in the offering described in the prospectus. As provided in Rule 430B, for liability purposes of the issuer and any person that is at that date an underwriter, such date shall be deemed to be a new effective date of the registration statement relating to the securities in the registration statement to which that prospectus relates, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof. Provided, however, that no statement made in a registration statement or prospectus that is part of the registration statement or made in a document incorporated or deemed incorporated by reference into the registration statement or prospectus that is part of the registration statement will, as to a purchaser with a time of contract of sale prior to such effective date, supersede or modify any statement that was made in the registration statement or prospectus that was part of the registration statement or made in any such document immediately prior to such effective date.

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- (b) The undersigned registrant hereby undertakes to deliver or cause to be delivered with the prospectus, to each person to whom the prospectus is sent or given, the latest annual report to security holders that is incorporated by reference in the prospectus and furnished pursuant to and meeting the requirements of Rule 14a-3 or Rule 14c-3 under the Securities Exchange Act of 1934; and, where interim financial information required to be presented by Article 3 of Regulation S-X are not set forth in the prospectus, to deliver, or cause to be delivered to each person to whom the prospectus is sent or given, the latest quarterly report that is specifically incorporated by reference in the prospectus to provide such interim financial information.
- (c) Insofar as indemnification for liabilities arising under the Securities Act of 1933 may be permitted to directors, officers and controlling persons of the registrant pursuant to the foregoing provisions, or otherwise, the registrant has been advised that in the opinion of the Securities and Exchange Commission such indemnification is against public policy as expressed in the Act and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the registrant of expenses incurred or paid by a director, officer or controlling person of the registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Act and will be governed by the final adjudication of such issue.

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, the Registrant certifies that it has reasonable grounds to believe that it meets all of the requirements for filing on Form S-1 and has duly caused this Registration Statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of St. Louis, State of Missouri, on July 19, 2012.

STEREOTAXIS, INC.

By: /s/ Michael P. Kaminski
Michael P. Kaminski
President and Chief Executive Officer

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

<u>Signature</u>	<u>Title(s)</u>	<u>Date</u>
<u>*</u> William C. Mills III	Chairman of the Board	July 19, 2012
<u>/s/ Michael P. Kaminski</u> Michael P. Kaminski	President & Chief Executive Officer, Director (principal executive officer)	July 19, 2012
<u>/s/ Samuel W. Duggan II</u> Samuel W. Duggan II	Chief Financial Officer (principal financial officer and principal accounting officer)	July 19, 2012
<u>*</u> Christopher Alafi	Director	July 19, 2012
<u>*</u> David W. Benfer	Director	July 19, 2012
<u>*</u> Joseph D. Keegan	Director	July 19, 2012
<u>*</u> William M. Kelley	Director	July 19, 2012
<u>*</u> Robert J. Messey	Director	July 19, 2012
<u>*</u> Fred A. Middleton	Director	July 19, 2012
<u>*</u> Eric N. Prystowsky	Director	July 19, 2012

*By: /s/ Samuel w. Duggan II
Samuel W. Duggan II
Attorney-in-fact

EXHIBIT INDEX

Exhibit Number	Document Description
3.1	Restated Articles of Incorporation of Stereotaxis, Inc., incorporated by reference to Exhibit 3.1 of the registrant's Form 10-Q (File No. 000-50884) for the fiscal quarter ended September 30, 2004.
3.2	Restated Bylaws of Stereotaxis, Inc., incorporated by reference to Exhibit 3.2 of the registrant's Form 10-Q (File No. 000-50884) for the fiscal quarter ended September 30, 2004.
4.1	Form of Warrant Issued Pursuant to that Certain Fourth Amendment, incorporated by reference to Exhibit 4.1 of the Registrant's Form 10-Q (File No. 000-50884) for the fiscal quarter ended March 31, 2012.
4.2	Form of PIPE Warrant, incorporated by reference to Exhibit 4.1 of the Registrant's Form 8-K (File No. 000-50884) filed May 8, 2012.
4.3	Form of Subordinated Convertible Debenture, incorporated by reference to Exhibit 4.2 of the Registrant's Form 8-K (File No. 000-50884) filed May 8, 2012.
4.4	Form of Convertible Debt Warrant, incorporated by reference to Exhibit 4.3 of the Registrant's Form 8-K (File No. 000-50884) filed May 8, 2012.
4.5	Form of Warrant Issued Pursuant to that Certain Fifth Amendment of Note and Warrant Purchase Agreement (included with Exhibit 10.68).
4.6	Form of Warrant Issued Pursuant to that Certain Sixth Amendment of Note and Warrant Purchase Agreement (included with Exhibit 10.77) (previously filed)
4.7	Amendment to Warrants of Stereotaxis, Inc., dated May 10, 2012, by and between Stereotaxis, Inc. and the Warrant Holders (previously filed)
4.8	Form of Specimen Stock Certificate, incorporated by reference to the Registration Statement on Form S-1 (File No. 333-115253) originally filed with the Commission on May 7, 2004, as amended thereafter, at Exhibit 4.1.
5.1	Opinion of Bryan Cave LLP.
10.1	1994 Stock Option Plan, incorporated by reference to the Registration Statement on Form S-1 (File No. 333-115253) originally filed with the SEC on May 7, 2004, as amended thereafter, at Exhibit 10.1.
10.2	2002 Stock Incentive Plan, as amended and restated June 10, 2009, incorporated by reference to Exhibit 10.2 of the Registrant's Form 10-Q (File No. 000-50884) for the fiscal quarter ended June 30, 2009.
10.3	Form of Incentive Stock Option Award Agreement under the 2002 Stock Incentive Plan, incorporated by reference to Exhibit 10.3 of the Registrant's Current Report on Form 8-K (File No. 000-50884) filed December 19, 2008.
10.4	Form of Non-Qualified Stock Option Award Agreement under the 2002 Stock Incentive Plan, incorporated by reference to Exhibit 10.1 of the Registrant's Current Report on Form 8-K (File No. 000-50884) filed December 19, 2008.
10.5	Form of Restricted Stock Agreement under the 2002 Stock Incentive Plan, incorporated by reference to Exhibit 10.7 of the Registrant's Form 10-Q (File No. 000-50884) for the fiscal quarter ended June 30, 2008.
10.6	Form of Performance Share Agreement under the 2002 Stock Incentive Plan, incorporated by reference to Exhibit 10.8 of the Registrant's Form 10-Q (File No. 000-50884) for the fiscal quarter ended June 30, 2008.
10.7	Form of Stock Appreciation Right Award Agreement under the 2002 Stock Incentive Plan, incorporated by reference to Exhibit 10.2 of the Registrant's Current Report on Form 8-K (File No. 000-50884) filed December 19, 2008.
10.8	Form of Restricted Share Unit Terms of Award under 2002 Stock Incentive Plan, incorporated by reference to Exhibit 10.2g of the Registrant's Annual Report on Form 10-K (File No. 000-50884) filed March 15, 2012.

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<u>Exhibit Number</u>	<u>Document Description</u>
10.9	2009 Employee Stock Purchase Plan, as adopted June 10, 2009, incorporated by reference to Exhibit 10.1 of the Registrant's Form 10-Q (File No. 000-50884) for the fiscal quarter ended June 30, 2009.
10.10	2002 Non-Employee Directors' Stock Plan, as amended and restated May 29, 2008, incorporated by reference to Exhibit 10.4 of the Registrant's Form 10-Q (File No. 000-50884) for the fiscal quarter ended June 30, 2008.
10.11	Form of Non-Qualified Stock Option Agreement under the 2002 Non-Employee Directors' Stock Plan, incorporated by reference to Exhibit 10.1 of the Registrant's Form 10-Q (File No. 000-50884) for the fiscal quarter ended June 30, 2005.
10.12	Form of Restricted Share Unit Agreement, Director Award, under 2002 Stock Incentive Plan, incorporated by reference to Exhibit 10.4c of the Registrant's Annual Report on Form 10-K (File No. 000-50884) filed March 15, 2012.
10.13	Employment Agreement dated April 17, 2002, between Michael P. Kaminski and the Registrant, incorporated by reference to the Registration Statement on Form S-1 (File No. 333-115253) originally filed with the SEC on May 7, 2004, as amended thereafter, at Exhibit 10.8.
10.14	First Amendment to Employment Agreement dated as of May 29, 2008, by and between the Registrant and Michael P. Kaminski, incorporated by reference to Exhibit 10.1 of the Registrant's Current Report on Form 8-K (File No. 000-50884) filed June 3, 2008.
10.15	Corrected Second Amendment to Employment Agreement dated August 6, 2009, by and between Michael P. Kaminski and the Registrant, incorporated by reference to Exhibit 10.3 of the Registrant's Form 10-Q (File No. 000-50884) for the fiscal quarter ended June 30, 2009.
10.16	Amendment to Executive Employment Agreement dated October 1, 2011 by and between the Company and Michael P. Kaminski, incorporated by reference to Exhibit 10.5d of the Registrant's Annual Report on Form 10-K (File No. 000-50884) filed March 15, 2012.
10.17	Employment Agreement dated August 5, 2009, between Daniel J. Johnston and the Registrant, incorporated by reference to Exhibit 10.8 of the Registrant's Form 10-Q (File No. 000-50884) for the fiscal quarter ended June 30, 2009.
10.18	Consulting Agreement dated August 5, 2011, by and between the Company and Daniel J. Johnston incorporated by reference to Exhibit 99.2 of Registrant's Form 8-K (File No. 000-50884) filed on August 8, 2011.
10.19	Form of Executive Employment Agreement between certain executive officers and the Registrant, incorporated by reference to Exhibit 10.7a of the Registrant's Annual Report on Form 10-K (File No. 000-50884) filed March 15, 2012.
10.20	Form of Amendment to Executive Employment Agreement between certain executive officers and the Company, incorporated by reference to Exhibit 10.7b of the Registrant's Annual Report on Form 10-K (File No. 000-50884) filed March 15, 2012.
10.21	Summary of management bonus plan, incorporated by reference to Exhibit 10.8 of the Registrant's Annual Report on Form 10-K (File No. 000-50884) filed March 15, 2012.
10.22	Summary of annual cash compensation of named executive officers, incorporated by reference to Exhibit 10.9 of the Registrant's Annual Report on Form 10-K (File No. 000-50884) filed March 15, 2012.
10.23	Summary of Non-Employee Directors' Compensation, incorporated by reference to Exhibit 10.10 of the Registrant's Annual Report on Form 10-K (File No. 000-50884) filed March 15, 2012.
10.24	Stereotaxis Advisory Board and Consulting Agreement, dated February 25, 2009, between the Company and Eric N. Prystowsky, MD, incorporated by reference to Exhibit 10.3 of the Registrant's Form 10-Q (File No. 000-50884) for the fiscal quarter ended March 31, 2009.

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<u>Exhibit Number</u>	<u>Document Description</u>
10.25	Amendment to Stereotaxis Advisory Board and Consulting Agreement, dated February 15, 2010, between the Company and Eric N. Prystowsky, MD incorporated by reference to Exhibit 10.11 b of the Registrant's Form 10-K (File No. 000-50884) for the fiscal year ended December 31, 2010.
10.26	Stereotaxis Advisory Board and Consulting Agreement, dated February 25, 2011, between the Company and Eric N. Prystowsky, MD incorporated by reference to Exhibit 10.2 the Registrant's Form 10-Q (File No. 000-50884) filed for the fiscal quarter ended March 31, 2011.
10.27	Collaboration Agreement dated June 8, 2001, between the Registrant and Siemens AG, Medical Solutions, incorporated by reference to the Registration Statement on Form S-1 (File No. 333-115253) originally filed with the SEC on May 7, 2004.
10.28	Extended Collaboration Agreement dated May 27, 2003, between the Registrant and Siemens AG, Medical Solutions, incorporated by reference to the Registration Statement on Form S-1 (File No. 333-115253) originally filed with the SEC on May 7, 2004.
10.29	Amendment to Collaboration Agreement dated May 5, 2006, between the Company and Siemens Aktiengesellschaft, Medical Solutions, incorporated by reference to Exhibit 10.1 of the Registrant's Form 10-Q (File No. 000-50884) for the fiscal quarter ended June 30, 2006.
10.30	Development and Supply Agreement dated May 7, 2002, between the Registrant and Biosense Webster, Inc., incorporated by reference to the Registration Statement on Form S-1 (File No. 333-115253) originally filed with the SEC on May 7, 2004.
10.31	Amendment to Development and Supply Agreement dated November 3, 2003, between the Registrant and Biosense Webster, Inc., incorporated by reference to the Registration Statement on Form S-1 (File No. 333-115253) originally filed with the SEC on May 7, 2004.
10.32	Alliance Expansion Agreement, dated as of May 4, 2007, between Biosense Webster, Inc. and the Registrant, incorporated by reference to Exhibit 10.1 of the Registrant's Form 10-Q (File No. 000-50884) for the fiscal quarter ended June 30, 2007.
10.33	Second Amendment to Development Alliance and Supply Agreement, dated as of July 18, 2008, between the Registrant and Biosense Webster, Inc., incorporated by reference to Exhibit 10.1 of the Registrant's Form 10-Q (File No. 000-50884) for the fiscal quarter ended September 30, 2008.
10.34	Third Amendment to Development Alliance and Supply Agreement with Biosense Webster, Inc. effective as of December 21, 2009, incorporated by reference to Exhibit 10.22 of the Registrant's Form 10-K (File No. 000-50884) for the fiscal year ended December 31, 2009.
10.35	Fourth Amendment to Development Alliance and Supply Agreement with Biosense Webster, Inc., effective May 1, 2010, incorporated by reference to Exhibit 10.1 of the Registrant's Form 10-Q (File No. 000-50884) for the fiscal quarter ended March 31, 2010.
10.36	Fifth Amendment to Development Alliance and Supply Agreement with Biosense Webster, Inc., dated as of July 30, 2010, incorporated by reference to Exhibit 10.1 of the Registrant's Form 8-K/A (File No. 000-50884) filed on August 3, 2010.
10.37	Sixth Amendment and Catheter and Mapping System Extension to Development Alliance and Supply Agreement with Biosense Webster, Inc., dated January 3, 2011, effective as of December 17, 2010 incorporated by reference to Exhibit 10.13h of the Registrant's Form 10-K (File No. 000-50884) filed for the fiscal year ended December 31, 2010).

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<u>Exhibit Number</u>	<u>Document Description</u>
10.38	Seventh Amendment to the Development Alliance and Supply Agreement with Biosense Webster, Inc., effective December 5, 2011, incorporated by reference to Exhibit 10.13i of the Registrant's Annual Report on Form 10-K (File No. 000-50884) filed March 15, 2012.
10.39	Form of Indemnification Agreement between the Registrant and its directors and executive officers, incorporated by reference to the Registration Statement on Form S-1 (File No. 333-115253) originally filed with the SEC on May 7, 2004.
10.40	Letter Agreement, effective October 6, 2003, between the Registrant and Philips Medizin Systeme G.m.b.H., incorporated by reference to the Registration Statement on Form S-1 (File No. 333-115253) originally filed with the SEC on May 7, 2004.
10.41	Japanese Market Development Agreement dated May 18, 2004, between the Registrant, Siemens Aktiengesellschaft and Siemens Asahi Medical Technologies Ltd., incorporated by reference to the Registration Statement on Form S-1 (File No. 333-115253) originally filed with the SEC on May 7, 2004.
10.42	Office Lease dated November 15, 2004, between the Registrant and Cortex West Development I, LLC, incorporated by reference to Exhibit 10.39 of the Registrant's Form 10-K (File No. 000-50884) for the fiscal year ended December 31, 2004.
10.43	Amendment to Office Lease dated November 30, 2007, between the Registrant and Cortex West Development I, LLC, incorporated by reference to Exhibit 10.22 of the Registrant's Form 10-K (File No. 000-50884) for the fiscal year ended December 31, 2007.
10.44	Amended and Restated Loan and Security Agreement, dated March 12, 2009, between the Company and Silicon Valley Bank, incorporated by reference to Exhibit 10.1 of the Registrant's Form 10-Q/A (File No. 000-50884) for the fiscal quarter ended March 31, 2009.
10.45	First Loan Modification Agreement (Domestic), dated December 15, 2009, between the Company and Silicon Valley Bank, , incorporated by reference to Exhibit 10.1 of the Registrant's Form 8-K (File No. 000-50884) filed on December 21, 2009.
10.46	Second Loan Modification Agreement (Domestic), dated December 17, 2010, between the Company and Silicon Valley Bank, incorporated by reference to Exhibit 10.19b of the Registrant's Form 10-K (File No. 000-50884) filed for the fiscal year ended December 31, 2010.
10.47	Third Loan Modification Agreement, dated June 29, 2011, between the Company, Stereotaxis International, Inc. and Silicon Valley Bank, incorporated by reference to Exhibit 10.1 of the Registrant's Form 8-K (File No. 000-50884) filed on July 6, 2011.
10.48	Fourth Loan Modification Agreement (Domestic), dated September 30, 2011, between the Company, Stereotaxis International, Inc. and Silicon Valley Bank, incorporated by reference to Exhibit 10.1 of the Registrant's Form 8-K (File No. 000-50884) filed on October 4, 2011.
10.49	Waiver Agreement, dated October 31, 2011, by and among the Company, Stereotaxis, International, Inc and Silicon Valley Bank, incorporated by reference to Exhibit 10.1 of Registrant's Form 8-K filed on November 4, 2011.
10.50	Second Amended and Restated Loan and Security Agreement, effective November 30, 2011, by and among the Company, Stereotaxis International, Inc. and Silicon Valley Bank, incorporated by reference to Exhibit 10.9f of the Registrant's Annual Report on Form 10-K (File No. 000-50884) filed March 15, 2012.
10.51	Export-Import Bank Loan and Security Agreement, dated March 12, 2009, among the Company, Stereotaxis International, Inc., and Silicon Valley Bank, incorporated by reference to Exhibit 10.2 of the Registrant's Form 10-Q (File No. 000-50884) for the fiscal quarter ended March 31, 2009.

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<u>Exhibit Number</u>	<u>Document Description</u>
10.52	Export-Import Bank First Loan Modification Agreement, dated December 15, 2009, among the Company, Stereotaxis International, Inc., and Silicon Valley Bank, incorporated by reference to Exhibit 10.2 of the Registrant's Form 8-K (File No. 000-50884) filed on December 21, 2009.
10.53	Export-Import Bank Second Loan Modification Agreement, dated December 17, 2010, by and among the Company, Stereotaxis International, Inc., and Silicon Valley Bank incorporated by reference to Exhibit 10.20c of the Registrant's Form 10-K (File No. 000-50884) filed for the fiscal year ended December 31, 2010.
10.54	Export-Import Bank Loan and Security Agreement, dated September 30, 2011, among the Company, Stereotaxis International, Inc., and Silicon Valley Bank, incorporated by reference to Exhibit 10.2 of the Registrant's Form 8-K (File No. 000-50884) filed on October 4, 2011.
10.55	Amended and Restated Export-Import Bank Loan and Security Agreement effective November 30, 2011, among the Company, Stereotaxis International, Inc. and Silicon Valley Bank, incorporated by reference to Exhibit 10.20e of the Registrant's Annual Report on Form 10-K (File No. 000-50884) filed March 15, 2012.
10.56	Note and Warrant Purchase Agreement, effective February 7, 2008, between the Registrant and the investors named therein, incorporated by reference to Exhibit 10.31 of the Registrant's Form 10-K (File No. 000-50884) for the fiscal year ended December 31, 2007.
10.57	First Amendment to Note and Warrant Purchase Agreement, effective December 29, 2008, between the Registrant and the investors named therein, incorporated by reference to Exhibit 10.32 of the Registrant's Form 10-K (File No. 000-50884) for the fiscal year ended December 31, 2008.
10.58	Second Amendment to Note and Warrant Purchase Agreement, effective October 9, 2009, between the Registrant and the investors named therein, incorporated by reference to Exhibit 10.31c of the Registrant's Form 10-K (File No. 000-50884) for the fiscal year ended December 31, 2009.
10.59	Third Amendment to Note and Warrant Purchase Agreement, effective November 10, 2010, between the Registrant and the investors named therein incorporated by reference to Exhibit 10.21d of the Registrant's Form 10-K (File No. 000-50884) filed for the fiscal year ended December 31, 2010.
10.60	Loan Agreement dated as of November 30, 2011, by and among the Company, Stereotaxis International, Inc. and Cowen Healthcare Royalty Partners II LLC, incorporated by reference to Exhibit 10.22a of the Registrant's Annual Report on Form 10-K (File No. 000-50884) filed March 15, 2012.
10.61	Intercreditor Agreement dated as of December 5, 2011 by and among the Company, Stereotaxis International, Inc., Cowen Healthcare Royalty Partners II LLC and Silicon Valley Bank, incorporated by reference to Exhibit 10.22b of the Registrant's Annual Report on Form 10-K (File No. 000-50884) filed March 15, 2012.
10.62	Waiver Agreement, dated February 29, 2012, by and between Stereotaxis, Inc., Stereotaxis International, Inc. and Silicon Valley Bank, incorporated by reference to Exhibit 10.1 of the Registrant's Form 8-K (File No. 000-50884) filed March 5, 2012.
10.63	First Loan Modification Agreement (Domestic), dated March 30, 2012, by and between Stereotaxis, Inc., Stereotaxis International, Inc., and Silicon Valley Bank, incorporated by reference to Exhibit 10.1 of the Registrant's Form 8-K (File No. 000-50884) filed March 5, 2012.
10.64	Export-Import Bank First Loan Modification Agreement, dated March 30, 2012, by and between Silicon Valley Bank, Stereotaxis, Inc. and Stereotaxis International, Inc., incorporated by reference to Exhibit 10.2 of the Registrant's Form 8-K (File No. 000-50884) filed March 5, 2012.
10.65	Fourth Amendment to the Note and Warrant Purchase Agreement, dated March 30, 2012, among affiliated entities of Sanderling Venture Partners, Alafi Capital Company and Stereotaxis, Inc., incorporated by reference to Exhibit 10.3 of the Registrant's Form 8-K (File No. 000-50884) filed March 5, 2012.

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<u>Exhibit Number</u>	<u>Document Description</u>
10.66	Second Amendment to Second Amended and Restated Loan and Security Agreement (Domestic), dated May 1, 2012, between Silicon Valley Bank and Stereotaxis Inc., Section 1350 Certification, incorporated by reference to Exhibit 10.1 of the Registrant's Form 8-K (File No. 000-50884) filed May 2, 2012.
10.67	Export-Import Bank Second Loan Modification Agreement, dated May 1, 2012, by and between Silicon Valley Bank, Stereotaxis, Inc. and Stereotaxis International, Inc., incorporated by reference to Exhibit 10.2 of the Registrant's Form 8-K (File No. 000-50884) filed May 2, 2012.
10.68	Fifth Amendment to the Note and Warrant Purchase Agreement, dated May 1, 2012, among affiliated entities of Sanderling Venture Partners, Alafi Capital Company and Stereotaxis, Inc., incorporated by reference to Exhibit 10.3 of the Registrant's Form 8-K (File No. 000-50884) filed May 2, 2012.
10.69	Stock and Warrant Purchase Agreement, incorporated by reference to Exhibit 10.1 of the Registrant's Form 8-K (File No. 000-50884) filed May 8, 2012.
10.70	Form of PIPE Registration Rights Agreement, incorporated by reference to Exhibit 10.2 of the Registrant's Form 8-K (File No. 000-50884) filed May 8, 2012.
10.71	Form of Voting Agreement, incorporated by reference to Exhibit 10.3 of the Registrant's Form 8-K (File No. 000-50884) filed May 8, 2012.
10.72	Securities Purchase Agreement, dated May 7, 2012, by and among Stereotaxis Inc. and each purchaser identified on the signature page thereto, incorporated by reference to Exhibit 10.4 of the Registrant's Form 8-K (File No. 000-50884) filed May 8, 2012.
10.73	Form of Convertible Debt Registration Rights Agreement, incorporated by reference to Exhibit 10.5 of the Registrant's Form 8-K (File No. 000-50884) filed May 8, 2012.
10.74	Form of Subordination Agreement, incorporated by reference to Exhibit 10.6 of the Registrant's Form 8-K (File No. 000-50884) filed May 8, 2012.
10.75	Third Amendment to Second Amended and Restated Loan and Security Agreement (Domestic), dated May 7, 2012, between Silicon Valley Bank and Stereotaxis Inc. (previously filed)
10.76	Export-Import Bank Third Loan Modification Agreement, dated May 7, 2012, by and between Silicon Valley Bank, Stereotaxis, Inc. and Stereotaxis International, Inc. (previously filed)
10.77	Sixth Amendment to the Note and Warrant Purchase Agreement, dated May 7, 2012, among affiliated entities of Sanderling Venture Partners, Alafi Capital Company and Stereotaxis, Inc. (previously filed)
21.1	List of Subsidiaries of the Registrant, incorporated by reference to Exhibit 21.1 of the Registrant's Form 10-K (File No. 000-50884) for the fiscal year ended December 31, 2009.
23.1	Consent of Ernst & Young LLP.
23.2	Consent of Bryan Cave LLP (included in Exhibit 5.1).
24.1	Power of Attorney (previously filed)



July 19, 2012

Stereotaxis, Inc.
4320 Forest Park Avenue, Suite 100
St. Louis, Missouri 63108

Ladies and Gentlemen:

We have acted as special counsel to Stereotaxis, Inc., a Delaware corporation (the "Company"), in connection with the offer and resale of 2,819,345 shares (the "Shares") of common stock of the Company, par value \$0.001 per share, pursuant to the Company's Registration Statement on Form S-1 (the "Registration Statement") filed by the Company with the Securities and Exchange Commission (the "SEC") under the Securities Act of 1933, as amended (the "Securities Act"), on May 22, 2012, and amended by Pre-Effective Amendment No. 1 thereto, filed on the date hereof, on behalf of the certain selling stockholders named therein. The Shares consist of (i) 2,168,727 shares of the Company's Common Stock (the "Issued Shares") issued to certain purchasers (collectively, the "Purchasers") party to that certain Stock and Warrant Purchase Agreement (the "Purchase Agreement"), dated as of May 7, 2012, by and among the Company and such Purchasers identified and (ii) 650,618 shares of the Company's Common Stock (the "Warrant Shares") issuable upon exercise of certain warrants (the "Warrants") issued to the selling stockholders who are affiliates of the Franklin Templeton funds identified in the prospectus that is part of the Registration Statement.

In connection herewith, we have examined:

- (1) the Amended and Restated Certificate of Incorporation of the Company;
- (2) the Amended and Restated Bylaws of the Company;
- (3) the Registration Statement; and
- (4) the Purchase Agreement.

We have also examined originals or copies, certified or otherwise identified to our satisfaction, of such other corporate records, agreements and instruments of the Company, statements and certificates of public officials and officers of the Company, and such other documents, records and instruments, and we have made such legal and factual inquiries as we have deemed necessary or appropriate as a basis for us to render the opinions hereinafter expressed. In our examination of the foregoing, we have assumed the genuineness of all signatures, the legal competence and capacity of natural persons, the authenticity of documents submitted to us as originals and the conformity with authentic original documents of all documents submitted to us as copies. When relevant facts were not independently established, we have relied without independent investigation as to matters of fact upon statements of governmental officials and upon representations made in or pursuant to the certificates and statements of appropriate representatives of the Company.

In connection herewith, we have assumed that, other than with respect to the Company, all of the documents referred to in this opinion letter have been duly authorized by, have been duly executed and delivered by, and constitute the valid, binding and enforceable obligations of, all of the parties to such documents, all of the signatories to such documents have been duly authorized and all such parties are duly organized and validly existing and have the power and authority (corporate or other) to execute, deliver and perform such documents.

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Based upon the foregoing and in reliance thereon, and subject to the assumptions, comments, qualifications, limitations and exceptions set forth herein, we are of the opinion that (i) the Issued Shares have been duly authorized, and are validly issued, fully paid and nonassessable and (ii) the Warrant Shares have been duly authorized, and when exercised and issued in accordance with the terms of the Warrants and receipt by the Company of the consideration required therein, will be validly issued, fully paid and nonassessable.

This opinion is not rendered with respect to any laws other than the General Corporation Law of the State of Delaware. The opinions set forth herein are made as of the date hereof and are subject to, and may be limited by, future changes in the factual matters set forth herein, and we undertake no duty to advise you of the same. The opinions expressed herein are based upon the law in effect (and published or otherwise generally available) on the date hereof, and we assume no obligation to revise or supplement these opinions should such law be changed by legislative action, judicial decision or otherwise. In rendering our opinions, we have not considered, and hereby disclaim any opinion as to, the application or impact of any laws, cases, decisions, rules or regulations of any other jurisdiction, court or administrative agency.

We do not render any opinions except as set forth above. We hereby consent to the filing of this opinion as Exhibit 5.1 to the Registration Statement and to the use of our name under the caption "Legal Matters" in the prospectus filed as a part thereof. We also consent to your filing copies of this opinion as an exhibit to the Registration Statement with such agencies of such states as you deem necessary in the course of complying with the laws of such states regarding the offering and sale of the securities addressed herein. In giving such consent, we do not thereby concede that we are within the category of persons whose consent is required under Section 7 of the Securities Act or the rules and regulations of the SEC promulgated thereunder.

Very truly yours,

/s/ Bryan Cave LLP

Consent of Independent Registered Public Accounting Firm

We consent to the reference to our firm under the caption "Experts" in the Registration Statement (Amendment No. 1 to Form S-1, No. 333-181618) and related Prospectus of Stereotaxis, Inc. for the registration of up to 2,819,345 shares of its common stock, \$0.001 par value and to the incorporation by reference therein of our reports dated March 15, 2012, with respect to the financial statements and schedule of Stereotaxis, Inc., and the effectiveness of internal control over financial reporting of Stereotaxis, Inc., included in its Annual Report (Form 10-K) for the year ended December 31, 2011, filed with the Securities and Exchange Commission.

/s/ Ernst & Young LLP

St. Louis, Missouri
July 19, 2012