

**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 7,474,153 Shares**

This prospectus relates to the offer and sale, from time to time, by the selling stockholders named herein of up to 7,474,153 shares of our common stock, which includes (i) up to 4,070,032 shares of our common stock issuable upon conversion of or otherwise underlying our subordinated convertible debentures and (ii) up to 3,404,121 shares of our common stock issuable upon the exercise of warrants to purchase our common stock. This prospectus also covers any additional shares of common stock that may become issuable upon anti-dilution adjustment pursuant to the terms of these debentures warrants by reason of stock splits, stock dividends, or similar events. The debentures and warrants to purchase common stock were acquired by the selling stockholders in a private placement by us that closed on May 10, 2012.

The selling stockholders may sell all or a portion of the shares from time to time at prices which will be determined by the prevailing market price for the shares. We will not receive any proceeds from the sale of the shares by the selling stockholders. We will, however, to the extent the warrants are exercised for cash, as opposed to being exercised on a cashless basis, receive proceeds from such exercises. To the extent we receive such proceeds, they will be used for working capital and 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 shares 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 shares 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.

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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.

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](http://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*<sup>®</sup>, *Epoch*<sup>™</sup> and *Odyssey*<sup>™</sup> 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 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 Form 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) Three Months Ended March 31,		Year Ended December 31				
	2012	2011	2011	2010	2009	2008	2007
	<b>Consolidated Statements of Operations Data:</b>						
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 <sup>(1)(2)</sup>	(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
<b>Consolidated Balance Sheet Data:</b>							
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 10, 2012, we sold approximately \$8.5 million in aggregate principal amount of unsecured, subordinated, convertible debentures (the "Debentures") to the selling stockholders named herein under a Securities Purchase Agreement (the "Convertible Debt SPA"). The Debentures became convertible into shares of our common stock at a conversion price of \$3.361 per share (or 2,521,571 shares in the aggregate), on July 10, 2012, the date we received approval of the Stockholder Approval Matters described below. The purchasers of the Debentures also received six-year warrants to purchase 2,521,571 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 will be required to do so, under the subordination agreement described below, at such time as we have registered the shares for resale under the registration statement of which this prospectus is a part. No shares of common stock were issuable upon conversion of the Debentures or exercise of the Warrants, as applicable, until we received approval of an increase in the number of the authorized and unissued shares of our common stock, a potential reverse stock split, the conversion of the Debentures and the exercise of Convertible Debt Warrants into more than 20% of our common stock outstanding (the "Stockholder Approval Matters"), which approval was received on July 10, 2012.

The Debentures bear interest at 8% per year and mature on May 10, 2014. The Company will be required to make interest payments in shares of common stock, subject to the completion of an effective registration statement. The Convertible Debt Warrants will become exercisable upon the six month and first day anniversary following their issuance, and will remain exercisable until six years after their initial exercise date.

Subject to certain conditions, the Company may require each holder to convert up to 50% of the Debentures if the Common Stock closes above \$15.00, or 100% of the Debentures if the Common Stock closes above \$20.00 (in each case, as further adjusted for stock splits, recapitalizations and similar events) during a 20 consecutive trading day period and the resale registration statement described below has been declared effective by the SEC and is available for the issuance of the Common Stock upon conversion of the Debentures. In the event of any forced conversion by the Company, the minimum amount that the Company can force the holders to convert is \$2.5 million of Debentures in the aggregate.

In connection with 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.

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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.

This registration statement is being filed pursuant to a registration rights agreement entered into with the purchasers of the Convertible Debt SPA (the “Convertible Debt Registration Rights Agreement”), under which we agreed to register the resale of 135% of the common stock underlying the Debentures and Convertible Debt Warrants, which includes interest shares as described above. We agreed 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 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.

### **Concurrent transactions**

#### *PIPE and Warrants*

On May 7, 2012, we also entered into a Stock and Warrant Purchase Agreement (the “PIPE SPA”) with certain institutional investors 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”). Each purchaser thereunder received a PIPE Warrant to purchase one share of common stock for every share of PIPE Common Stock purchased. That transaction also closed on May 10, 2012. 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.

Pursuant to a registration rights agreement with the purchasers of the PIPE Common Stock (the “PIPE Registration Rights Agreement”), we filed 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 agreed to use our commercially reasonable efforts to cause such resale registration statement to be declared effective by 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 amendments 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.

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.

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

In connection with the 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 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.

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Also in connection with the 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.**

As of the date of this prospectus, we are not 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, 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,



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certain of our directors and their affiliated funds 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 up to 4,070,032 shares of our common stock issuable upon conversion of, or otherwise underlying, the Debentures and up to 3,404,121 shares of our common stock issuable upon exercise of the Convertible Debt Warrants held by the selling stockholders identified in this prospectus, which represents 135% of the common stock underlying such Debentures and Convertible Debt Warrants. In addition, we recently filed a registration statement relating to the resale of up to 650,618 shares of stock issuable on exercise of the PIPE Warrants and, upon receipt of approval of the Stockholder Approval Matters, we intend to file one or more prospectuses for the resales of an additional 1,518,109 shares issuable upon exercise of 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, and we recently increased the authorized number of shares of our common stock from 100,000,000 to 300,000,000. The exercise price of most of these securities (including all of the Debentures, the Convertible Debt Warrants and all of the PIPE Warrants) is \$3.361. 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 1985. 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.

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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 \$8,475,000.00 in proceeds from the cash exercise of all the Convertible Debt 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 Convertible Debt Warrants have been exercised.

### **SELLING STOCKHOLDERS**

The shares of common stock being offered by the selling stockholders are those issuable to the selling stockholders upon conversion of the Debentures and exercise of the Convertible Debt Warrants. For additional information regarding the issuance of the Debentures and the Convertible Debt Warrants, see “Prospectus Summary – Securities Being Offered” above. We are registering the shares of common stock in order to permit the selling stockholders to offer the shares for resale from time to time. Except for the ownership of the Debentures and the Convertible Debt Warrants issued pursuant to the Securities Purchase Agreement, the selling stockholders have not had any material relationship with us within the past three years.

The table below lists the selling stockholders and other information regarding the beneficial ownership (as determined under Section 13(d) of the Securities Exchange Act of 1934, as amended, and the rules and regulations thereunder) of the shares of common stock held by each of the selling stockholders. The second column lists the number of shares of common stock known to us to be beneficially owned by the selling stockholders, based on their respective ownership of shares of common stock, Debentures and Convertible Debt Warrants, as of June 29, 2012, assuming conversion of the Debentures and exercise of the Convertible Debt Warrants held by each such selling stockholder on that date but taking account of any limitations on conversion and exercise set forth therein. We have also presented such information assuming we had received approval of the Stockholder Approval Matters as of such date. We had 7,808,190 shares outstanding as of June 29, 2012, giving effect to the Reverse Stock Split for such purpose.

The third column lists the shares of common stock being offered by this prospectus by the selling stockholders and does not take in account any limitations on (i) conversion of the Debentures set forth therein or (ii) exercise of the Convertible Debt Warrants set forth therein.

In accordance with the terms of a registration rights agreement with the holders of the Debentures and the Convertible Debt Warrants, this prospectus generally covers the resale of 135% of the sum of (i) the maximum number of shares of common stock issuable upon conversion of the Debentures, (ii) the maximum number of other shares of common stock issuable pursuant to the Debentures and (iii) the maximum number of shares of common stock issuable upon exercise of the Convertible Debt Warrants, in each case, determined as if the outstanding Debentures and Convertible Debt Warrants were converted or exercised (as the case may be) in full (without regard to any limitations on conversion or exercise contained therein) as of the trading day immediately preceding the date this registration statement was initially filed with the SEC. Because the conversion price of the Debentures and the exercise price of the Convertible Debt Warrants may be adjusted, the number of shares that will actually be issued may be more or less than the number of shares being offered by this prospectus. The fourth column assumes the sale of all of the shares offered by the selling stockholders pursuant to this prospectus.

Under the terms of the Debentures and the Convertible Debt Warrants, a selling stockholder may not convert the Debentures or exercise the Convertible Debt Warrants to the extent (but only to the extent) such selling stockholder or any of its affiliates would beneficially own a number of shares of our common stock which would exceed various percentages for each investor, but in no case above 9.99%. The number of shares in the second column reflects these limitations. The selling stockholders may sell all, some or none of their shares in this offering. See “Plan of Distribution.”

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Selling Stockholder	Number of Shares Beneficially Owned Prior to the Offering (1)	Maximum Number of Shares Offered by This Prospectus	Shares Beneficially Owned Subsequent to the Offering (1)	
			Shares	Percent
DAFNA LifeScience Ltd(2)	381,099(3)	1,058,287	24,062	*
DAFNA LifeScience Market Neutral Ltd(4)	269,416(5)	749,620	16,515	*
DAFNA LifeScience Select Ltd(6)	408,386(7)	1,278,764	32,487	*
Prescott Group Aggressive Small Cap Master Fund, G.P.(8)	813,245(9)	1,763,812	480,841	5.25
Tenor Opportunity Master Fund Ltd.(10)	167,361(11)	496,072	—	*
Aria Opportunity Fund, Ltd (12)	55,787(13)	165,357	—	*
Iroquois Master Fund Ltd (14)	294,950(15)	639,382	79,240	*
Kingsbrook Opportunities Master Fund LP(16)	148,765(17)	440,953	—	*
Hudson Bay Master Fund Ltd (18)	297,530(19)	881,906	—	*
Total Number of Shares Offered		7,474,153		

\* Less than 1%

- (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) DAFNA LifeScience, Ltd is a Cayman Islands exempted company. DAFNA Capital Management, LLC is the investment adviser of DAFNA LifeScience. DAFNA Capital Management, in its capacity as investment adviser to DAFNA LifeScience, may be deemed to be the beneficial owner of the shares owned by DAFNA LifeScience, as in its capacity as investment adviser, it has the power to dispose, direct the disposition of, and vote the shares owned by DAFNA LifeScience. Nathan Fischel and Fariba Ghodsian are part-owners of DAFNA Capital Management and managing members. As controlling persons of DAFNA Capital Management, they may be deemed to beneficially own the shares of our common stock owned by DAFNA LifeScience.
- (3) Reflects 24,062 shares of our common stock held by DAFNA LifeScience, Ltd together with the beneficial ownership of DAFNA LifeScience Ltd from our common stock issuable upon conversion of the Debenture held by DAFNA LifeScience Ltd as of the time of this filing. In addition, DAFNA LifeScience Ltd also holds a Convertible Debt Warrant, which is not exercisable until after the six-month and one-day anniversary of its issuance date on May 10, 2012, and consequently, any shares of Common Stock issuable upon exercise thereof are not beneficially owned by DAFNA LifeScience Ltd as of the time of this filing and are excluded from the table above. Each of the Debenture and the Convertible Debt Warrant includes a “blocker provision” under which the holder thereof does not have the right to convert such Debenture or exercise such Convertible Debt Warrant, respectively, to the extent (but only to the extent) that such conversion would result in beneficial ownership by the holder thereof, or any of its affiliates, of more than 4.99% of our common stock then outstanding. Without regard to such six-month and one-day limitation on exercise of the Convertible Debt Warrant and any limitations on conversion or exercise imposed on DAFNA LifeScience Ltd by “blockers”, such Debenture and Convertible Debt Warrant held by DAFNA LifeScience Ltd would be convertible or exercisable, as applicable, into (i) 357,037 shares of common stock issuable upon conversion of such Debenture and (ii) 357,037 shares of common stock issuable upon exercise of such Convertible Debt Warrant.
- (4) DAFNA LifeScience Market Neutral, Ltd is a Cayman Islands exempted company. DAFNA Capital Management, LLC is the investment adviser of DAFNA LifeScience Market Neutral. DAFNA Capital Management, in its capacity as investment adviser to DAFNA LifeScience Market Neutral, may be deemed to be the beneficial owner of the shares owned by DAFNA LifeScience Market Neutral, as in its capacity as investment adviser, it has the power to dispose, direct the disposition of, and vote the shares owned by DAFNA LifeScience Market Neutral. Nathan Fischel and Fariba Ghodsian are part-owners of DAFNA Capital Management and managing members. As controlling persons of DAFNA Capital Management, they may be deemed to beneficially own the shares of our common stock owned by DAFNA LifeScience Market Neutral.
- (5) Reflects 165,515 shares of our common stock held by DAFNA LifeScience Market Neutral, Ltd together with the beneficial ownership of DAFNA LifeScience Market Neutral Ltd from our common stock issuable upon conversion of the Debenture held by DAFNA LifeScience Market Neutral Ltd as of the time of this filing. In addition, DAFNA LifeScience Market Neutral Ltd also holds a Convertible Debt Warrant, which is not exercisable until after the six-month and one-day anniversary of its issuance date on May 10, 2012, and consequently, any shares of Common Stock issuable upon exercise thereof are not beneficially owned by DAFNA LifeScience Market Neutral Ltd as of the time of this filing and are excluded from the table above. Each of the Debenture and the Convertible Debt Warrant includes a “blocker provision” under which the holder thereof does not have the right to convert such Debenture or exercise such Convertible Debt Warrant, respectively, to the extent (but only to the extent) that such conversion would result in beneficial ownership by the holder thereof, or any of its affiliates, of more than 4.99% of our common stock then outstanding. Without regard to such six-month and one-day limitation on exercise of the Convertible Debt Warrant and any limitations on conversion or exercise imposed on DAFNA LifeScience Market Neutral Ltd by “blockers”, such Debenture and Convertible Debt Warrant held by DAFNA LifeScience Market Neutral Ltd would be convertible or exercisable, as applicable, into (i) 252,901 shares of common stock issuable upon conversion of such Debenture and (ii) 252,901 shares of common stock issuable upon exercise of such Convertible Debt Warrant.
- (6) DAFNA LifeScience Select, Ltd is a Cayman Islands exempted company. DAFNA Capital Management, LLC is the investment adviser of DAFNA LifeScience Select. DAFNA Capital Management, in its capacity as investment adviser to DAFNA LifeScience Select, may be deemed to be the beneficial owner of the shares owned by DAFNA LifeScience Select, as in its capacity as investment adviser, it has the power to dispose, direct the disposition of, and vote the shares owned by DAFNA LifeScience Select. Nathan Fischel and Fariba Ghodsian are part-owners of DAFNA Capital Management and managing members. As controlling persons of DAFNA Capital Management, they may be deemed to beneficially own the shares of our common stock owned by DAFNA LifeScience Select.
- (7) Reflects 32,487 shares of our common stock held by DAFNA LifeScience Select Ltd together with the beneficial ownership of DAFNA LifeScience Select Ltd from our common stock issuable upon conversion of the Debenture held by DAFNA LifeScience Select Ltd as of the time of this filing after giving effect to a “blocker provision” in such Debenture under which the holder thereof does not have the right to convert such Debenture to the extent (but only to the extent) that such conversion would result in beneficial ownership by the holder thereof, or any of its affiliates, of more than 4.99% of our common stock then outstanding. In addition, DAFNA LifeScience Select Ltd also holds a Convertible Debt Warrant, which is not exercisable until after the six-month and one-day anniversary of its issuance date on May 10, 2012, and consequently, any shares of Common Stock issuable upon exercise thereof are not beneficially owned by DAFNA LifeScience Select Ltd as of the time of this filing and are excluded from the table above. The Convertible Debt Warrant contains a similar blocker as the Debenture. Without regard to such six-month and one-day limitation on exercise of the Convertible Debt Warrant and any limitations on conversion or exercise imposed on DAFNA LifeScience Select Ltd by “blockers”, such Debenture and Convertible Debt Warrant held by DAFNA LifeScience Select Ltd would be convertible or exercisable, as applicable, into (i) 431,419 shares of common stock issuable upon conversion of such Debenture and (ii) 431,419 shares of common stock issuable upon exercise of such Convertible Debt Warrant.

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- (8) Prescott Group Aggressive Small Cap, L.P. (“Prescott Small Cap”) and Prescott Group Aggressive Small Cap II, L.P. (“Prescott Small Cap II” and, together with Prescott Small Cap, the “Small Cap Funds”) are the general partners of Prescott Group Aggressive Small Cap Master Fund, G.P. (“Prescott Master Fund”). Prescott Group Capital Management, L.L.C. (“Prescott Capital”) is the general partner of the Small Cap Funds and Mr. Phil Frohlich is the principal of Prescott Capital, and as a result Mr. Frohlich and Prescott Capital may direct the vote and disposition of these securities on behalf of the Small Cap Funds. The Small Cap Funds, Prescott Capital and Mr. Frohlich each disclaim beneficial ownership over these securities.
- (9) Reflects 480,841 shares of our common stock held by Prescott Master Fund together with the beneficial ownership of Prescott Master Fund from our common stock issuable upon conversion of the Debenture held by Prescott Master Fund as of the time of this filing after giving effect to a “blocker provision” in such Debenture under which the holder thereof does not have the right to convert such Debenture to the extent (but only to the extent) that such conversion would result in beneficial ownership by the holder thereof, or any of its affiliates, of more than 9.99% of our common stock then outstanding. In addition, Prescott Master Fund also holds a Convertible Debt Warrant, which is not exercisable until after the six-month and one-day anniversary of its issuance date on May 10, 2012, and consequently, any shares of Common Stock issuable upon exercise thereof are not beneficially owned by Prescott Master Fund as of the time of this filing and are excluded from the table above. The Convertible Debt Warrant contains a similar blocker as the Debenture. Without regard to such six-month and one-day limitation on exercise of the Convertible Debt Warrant and any limitations on conversion or exercise imposed on Prescott Master Fund by “blockers”, such Debenture and Convertible Debt Warrant held by Prescott Master Fund would be convertible or exercisable, as applicable, into (i) 595,061 shares of common stock issuable upon conversion of such Debenture and (ii) 595,061 shares of common stock issuable upon exercise of such Convertible Debt Warrant.
- (10) Tenor Capital Management Company, L.P., the investment manager of Tenor Opportunity Master Fund Ltd., has voting and investment power over these securities. Tenor Management GP, LLC is the general partner of Tenor Capital Management Company, L.P. and Robin R. Shah is the managing member of Tenor Management GP, LLC. Robin R. Shah, Tenor Management GP, LLC and Tenor Capital Management Company, L.P. each disclaim beneficial ownership over these securities.
- (11) Reflects the beneficial ownership of Tenor Opportunity Master Fund Ltd. from our common stock issuable upon conversion of the Debenture held by Tenor Opportunity Master Fund Ltd. as of the time of this filing. In addition, Tenor Opportunity Master Fund Ltd. also holds a Convertible Debt Warrant, which is not exercisable until after the six-month and one-day anniversary of its issuance date on May 10, 2012, and consequently, any shares of Common Stock issuable upon exercise thereof are not beneficially owned by Tenor Opportunity Master Fund Ltd. as of the time of this filing and are excluded from the table above. Each of the Debenture and the Convertible Debt Warrant includes a “blocker provision” under which the holder thereof does not have the right to convert such Debenture or exercise such Convertible Debt Warrant, respectively, to the extent (but only to the extent) that such conversion would result in beneficial ownership by the holder thereof, or any of its affiliates, of more than 4.99% of our common stock then outstanding. Without regard to such six-month and one-day limitation on exercise of the Convertible Debt Warrant and any limitations on conversion or exercise imposed on Tenor Opportunity Master Fund Ltd. by “blockers”, such Debenture and Convertible Debt Warrant held by Tenor Opportunity Master Fund Ltd. would be convertible or exercisable, as applicable, into (i) 167,361 shares of common stock issuable upon conversion of such Debenture and (ii) 167,361 shares of common stock issuable upon exercise of such Convertible Debt Warrant.
- (12) Tenor Capital Management Company, L.P., the investment manager of Aria Opportunity Fund, Ltd., has voting and investment power over these securities. Tenor Management GP, LLC is the general partner of Tenor Capital Management Company, L.P. and Robin R. Shah is the managing member of Tenor Management GP, LLC. Robin R. Shah, Tenor Management GP, LLC and Tenor Capital Management Company, L.P. each disclaim beneficial ownership over these securities.
- (13) Reflects the beneficial ownership of Aria Opportunity Fund, Ltd. from our common stock issuable upon conversion of the Debenture held by Aria Opportunity Fund, Ltd. as of the time of this filing. In addition, Aria Opportunity Fund, Ltd. also holds a Convertible Debt Warrant, which is not exercisable until after the six-month and one-day anniversary of its issuance date on May 10, 2012, and consequently, any shares of Common Stock issuable upon exercise thereof are not beneficially owned by Aria Opportunity Fund, Ltd. as of the time of this filing and are excluded from the table above. Each of the Debenture and the Convertible Debt Warrant includes a “blocker provision” under which the holder thereof does not have the right to convert such Debenture or exercise such Convertible Debt Warrant, respectively, to the extent (but only to the extent) that such conversion would result in beneficial ownership by the holder thereof, or any of its affiliates, of more than 4.99% of our common stock then outstanding. Without regard to such six-month and one-day limitation on exercise of the Convertible Debt Warrant and any limitations on conversion or exercise imposed on Aria Opportunity Fund, Ltd. by “blockers”, such Debenture and Convertible Debt Warrant held by Aria Opportunity Fund, Ltd. would be convertible or exercisable, as applicable, into (i) 55,787 shares of common stock issuable upon conversion of such Debenture and (ii) 55,787 shares of common stock issuable upon exercise of such Convertible Debt Warrant.
- (14) Iroquois Capital Management L.L.C. (“Iroquois Capital”) is the investment manager of Iroquois Master Fund, Ltd (“IMF”). Consequently, Iroquois Capital has voting control and investment discretion over securities held by IMF. As managing members of Iroquois Capital, Joshua Silverman and Richard Abbe make voting and investment decisions on behalf of Iroquois Capital in its capacity as investment manager to IMF. As a result of the foregoing, Mr. Silverman and Mr. Abbe may be deemed to have beneficial ownership (as determined under Section 13(d) of the Securities Exchange Act of 1934, as amended) of the securities held by IMF. Notwithstanding the foregoing, Mr. Silverman and Mr. Abbe disclaim such beneficial ownership.

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- (15) Reflects 79,240 shares of our common stock held by IMF together with the beneficial ownership of IMF from our common stock issuable upon conversion of the Debenture held by IMF as of the time of this filing. In addition, IMF also holds a Convertible Debt Warrant, which is not exercisable until after the six-month and one-day anniversary of its issuance date on May 10, 2012, and consequently, any shares of Common Stock issuable upon exercise thereof are not beneficially owned by IMF as of the time of this filing and are excluded from the table above. Each of the Debenture and the Convertible Debt Warrant includes a “blocker provision” under which the holder thereof does not have the right to convert such Debenture or exercise such Convertible Debt Warrant, respectively, to the extent (but only to the extent) that such conversion would result in beneficial ownership by the holder thereof, or any of its affiliates, of more than 4.99% of our common stock then outstanding. Without regard to such six-month and one-day limitation on exercise of the Convertible Debt Warrant and any limitations on conversion or exercise imposed on IMF by “blockers”, such Debenture and Convertible Debt Warrant held by IMF would be convertible or exercisable, as applicable, into (i) 215,710 shares of common stock issuable upon conversion of such Debenture and (ii) 215,710 shares of common stock issuable upon exercise of such Convertible Debt Warrant.
- (16) Kingsbrook Partners LP (“Kingsbrook Partners”) is the investment manager of Kingsbrook Opportunities Master Fund LP (“Kingsbrook Opportunities”) and consequently has voting control and investment discretion over securities held by Kingsbrook Opportunities. Kingsbrook Opportunities GP LLC (“Opportunities GP”) is the general partner of Kingsbrook Opportunities and may be considered the beneficial owner of any securities deemed to be beneficially owned by Kingsbrook Opportunities. KB GP LLC (“GP LLC”) is the general partner of Kingsbrook Partners and may be considered the beneficial owner of any securities deemed to be beneficially owned by Kingsbrook Partners. Ari J. Storch, Adam J. Chill and Scott M. Wallace are the sole managing members of Opportunities GP and GP LLC and as a result may be considered beneficial owners of any securities deemed beneficially owned by Opportunities GP and GP LLC. Each of Kingsbrook Partners, Opportunities GP, GP LLC and Messrs. Storch, Chill and Wallace disclaim beneficial ownership of these securities.
- (17) Reflects the beneficial ownership of Kingsbrook Opportunities from our common stock issuable upon conversion of the Debenture held by Kingsbrook Opportunities as of the time of this filing. In addition, Kingsbrook Opportunities also holds a Convertible Debt Warrant, which is not exercisable until after the six-month and one-day anniversary of its issuance date on May 10, 2012, and consequently, any shares of Common Stock issuable upon exercise thereof are not beneficially owned by Kingsbrook Opportunities as of the time of this filing and are excluded from the table above. Each of the Debenture and the Convertible Debt Warrant includes a “blocker provision” under which the holder thereof does not have the right to convert such Debenture or exercise such Convertible Debt Warrant, respectively, to the extent (but only to the extent) that such conversion would result in beneficial ownership by the holder thereof, or any of its affiliates, of more than 4.99% of our common stock then outstanding. Without regard to such six-month and one-day limitation on exercise of the Convertible Debt Warrant and any limitations on conversion or exercise imposed on Kingsbrook Opportunities by “blockers”, such Debenture and Convertible Debt Warrant held by Kingsbrook Opportunities would be convertible or exercisable, as applicable, into (i) 148,765 shares of common stock issuable upon conversion of such Debenture and (ii) 148,765 shares of common stock issuable upon exercise of such Convertible Debt Warrant.
- (18) Hudson Bay Capital Management LP, the investment manager of Hudson Bay Master Fund Ltd., has voting and investment power over these securities. Sander Gerber is the managing member of Hudson Bay Capital GP LLC, which is the general partner of Hudson Bay Capital Management LP. Sander Gerber disclaims beneficial ownership of such securities.
- (19) Reflects the beneficial ownership of Hudson Bay Master Fund Ltd. from our common stock issuable upon conversion of the Debenture held by Hudson Bay Master Fund Ltd. as of the time of this filing. In addition, Hudson Bay Master Fund Ltd. also holds a Convertible Debt Warrant, which is not exercisable until after the six-month and one-day anniversary of its issuance date on May 10, 2012, and consequently, any shares of Common Stock issuable upon exercise thereof are not beneficially owned by Hudson Bay Master Fund Ltd. as of the time of this filing and are excluded from the table above. Each of the Debenture and the Convertible Debt Warrant includes a “blocker provision” under which the holder thereof does not have the right to convert such Debenture or exercise such Convertible Debt Warrant, respectively, to the extent (but only to the extent) that such conversion would result in beneficial ownership by the holder thereof, or any of its affiliates, of more than 4.99% of our common stock then outstanding. Without regard to such six-month and one-day limitation on exercise of the Convertible Debt Warrant and any limitations on conversion or exercise imposed on Hudson Bay Master Fund Ltd. by “blockers”, such Debenture and Convertible Debt Warrant held by Hudson Bay Master Fund Ltd. would be convertible or exercisable, as applicable, into (i) 297,530 shares of common stock issuable upon conversion of such Debenture and (ii) 297,530 shares of common stock issuable upon exercise of such Convertible Debt Warrant.

## PLAN OF DISTRIBUTION

We are registering the shares of common stock underlying the Debentures and issuable upon exercise of the warrants to permit the resale of these shares of common stock by the holders of the Debentures and Convertible Debt Warrants from time to time after the date of this prospectus. We will not receive any of the proceeds from the sale by the selling stockholders of the shares of common stock. We will bear all fees and expenses incident to our obligation to register the shares of common stock.

The selling stockholders may sell all or a portion of the shares of common stock held by them and offered hereby from time to time directly or through one or more underwriters, broker-dealers or agents. If the shares of common stock are sold through underwriters or broker-dealers, the selling stockholders will be responsible for underwriting discounts or commissions or agent's commissions. The shares of common stock may be sold in one or more transactions at fixed prices, at prevailing market prices at the time of the sale, at varying prices determined at the time of sale or at negotiated prices. These sales may be effected in transactions, which may involve crosses or block transactions, pursuant to one or more of the following methods:

- on any national securities exchange or quotation service on which the securities may be listed or quoted at the time of sale;
- in the over-the-counter market;
- in transactions otherwise than on these exchanges or systems or in the over-the-counter market;
- through the writing or settlement of options, whether such options are listed on an options exchange or otherwise;
- 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 made after the date the Registration Statement is declared effective by the SEC;
- broker-dealers may agree with a selling securityholder to sell a specified number of such shares at a stipulated price per share;
- a combination of any such methods of sale; and
- any other method permitted pursuant to applicable law.

The selling stockholders may also sell shares of common stock under Rule 144 promulgated under the Securities Act of 1933, as amended, if available, rather than under this prospectus. In addition, the selling stockholders may transfer the shares of common stock by other means not described in this prospectus. If the selling stockholders effect such transactions by selling shares of common stock to or through underwriters, broker-dealers or agents, such underwriters, broker-dealers or agents may receive commissions in the form of discounts, concessions or commissions from the selling stockholders or commissions from purchasers of the shares of common stock for whom they may act as agent or to whom they may sell as principal (which discounts, concessions or commissions as to particular underwriters, broker-dealers or agents may be in excess of those customary in the types of transactions involved). In connection with sales of the shares of common stock or otherwise, the selling stockholders may enter into hedging transactions with broker-dealers, which may in turn engage in short sales of the shares of common stock in the course of hedging in positions they assume. The selling stockholders may also sell shares of common stock short and deliver shares of common stock covered by this prospectus to close out short positions and to return borrowed shares in connection with such short sales. The selling stockholders may also loan or pledge shares of common stock to broker-dealers that in turn may sell such shares.

The selling stockholders may pledge or grant a security interest in some or all of the Debentures, Convertible Debt Warrants or 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 pursuant to this prospectus or any amendment to this prospectus under Rule 424(b)(3) or other applicable provision of the Securities Act amending, if necessary, 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 and donate the shares of common stock in other circumstances in which case the transferees, donees, pledgees or other successors in interest will be the selling beneficial owners for purposes of this prospectus.

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To the extent required by the Securities Act and the rules and regulations thereunder, the selling stockholders and any broker-dealer participating in the distribution of the shares of common stock may be deemed to be “underwriters” within the meaning of the Securities Act, and any commission paid, or any discounts or concessions allowed to, any such broker-dealer may be deemed to be underwriting commissions or discounts under the Securities Act. At the time a particular offering of the shares of common stock is made, a prospectus supplement, if required, will be distributed, which will set forth the aggregate amount of shares of common stock being offered and the terms of the offering, including the name or names of any broker-dealers or agents, any discounts, commissions and other terms constituting compensation from the selling stockholders and any discounts, commissions or concessions allowed or re-allowed or paid to broker-dealers.

Under the securities laws of some states, the shares of common stock may be sold in such states only through registered or licensed brokers or dealers. In addition, in some states the shares of common stock may not be sold unless such shares have been registered or qualified for sale in such state or an exemption from registration or qualification is available and is complied with.

There can be no assurance that any selling stockholder will sell any or all of the shares of common stock registered pursuant to the registration statement, of which this prospectus forms a part.

The selling stockholders and any other person participating in such distribution will be subject to applicable provisions of the Securities Exchange Act of 1934, as amended, and the rules and regulations thereunder, including, without limitation, to the extent applicable, Regulation M of the Exchange Act, which may limit the timing of purchases and sales of any of the shares of common stock by the selling stockholders and any other participating person. To the extent applicable, Regulation M may also restrict the ability of any person engaged in the distribution of the shares of common stock to engage in market-making activities with respect to the shares of common stock. All of the foregoing may affect the marketability of the shares of common stock and the ability of any person or entity to engage in market-making activities with respect to the shares of common stock.

We will pay all expenses of the registration of the shares of common stock pursuant to the registration rights agreement, estimated to be approximately \$46,000 in total, including, without limitation, Securities and Exchange Commission filing fees and expenses of compliance with state securities or “blue sky” laws; provided, however, a selling stockholder will pay all underwriting discounts and selling commissions, if any. We will indemnify the selling stockholders against liabilities, including some liabilities under the Securities Act in accordance with the registration rights agreements or the selling stockholders will be entitled to contribution. We may be indemnified by the selling stockholders against civil liabilities, including liabilities under the Securities Act that may arise from any written information furnished to us by the selling stockholder specifically for use in this prospectus, in accordance with the related registration rights agreements or we may be entitled to contribution.

Once sold under the registration statement, of which this prospectus forms a part, the shares of common stock will be freely tradable in the hands of persons other than our affiliates.

### **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 375 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.

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.



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*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. Nours, 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;
- 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	\$ 1,841.56
Legal fees and expenses	\$15,000.00
Accounting fees and expenses	\$25,000.00
Printing expenses	\$ 4,000.00
Total expenses	<u>\$45,841.56</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.

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

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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.
- (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.

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

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

**EXHIBIT INDEX**

<u>Exhibit Number</u>	<u>Document Description</u>
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).
4.7	Amendment to Warrants of Stereotaxis, Inc., dated May 10, 2012, by and between Stereotaxis, Inc. and the Warrant Holders, incorporated by reference to Exhibit 4.7 of the Registrant's Form S-1 (File No. 000-50884) filed May 23, 2012.
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 (filed herewith).
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.

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<u>Exhibit Number</u>	<u>Document Description</u>
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.
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.



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<u>Exhibit Number</u>	<u>Document Description</u>
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.
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.

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<u>Exhibit Number</u>	<u>Document Description</u>
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).
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.

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<u>Exhibit Number</u>	<u>Document Description</u>
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.
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., incorporated by reference to Exhibit 10.75 of the Registrant's Form S-1 (File No. 000-50884) filed May 23, 2012.
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., incorporated by reference to Exhibit 10.76 of the Registrant's Form S-1 (File No. 000-50884) filed May 23, 2012.
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., incorporated by reference to Exhibit 10.77 of the Registrant's Form S-1 (File No. 000-50884) filed May 23, 2012.
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, incorporated by reference to Exhibit 24.1 of the Registrant's Form S-1 (File No. 000-50884) filed May 23, 2012



July 19, 2012

Stereotaxis, Inc.  
4320 Forest Park Avenue, Suite 100  
St. Louis, Missouri 63118

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 7,474,153 shares (the "Shares") of common stock of the Company, par value \$0.001 per share (the "Common Stock"), pursuant to the Company's Registration Statement on Form S-1 originally filed by the Company on behalf of the selling stockholders named therein with the Securities and Exchange Commission (the "SEC") under the Securities Act of 1933, as amended (the "Securities Act"), on June 11, 2012, as amended by the Pre-Effective Amendment No. 1 to be filed on or about the date of this opinion (as so amended, the "Registration Statement"). The Shares consist of (i) up to 4,070,032 shares of the Company's Common Stock (the "Debenture Shares") issuable upon the conversion of or otherwise underlying the unsecured, subordinated convertible debentures (the "Debentures") of the Company and (ii) up to 3,404,121 shares of the Company's Common Stock (the "Warrant Shares") issuable upon exercise of the warrants to purchase our Common Stock (the "Convertible Debt Warrants"), which Convertible Debt Warrants were issued in connection with the Debentures. The Debentures and Convertible Debt Warrants were issued to each of the investors listed on the Schedule of Buyers (individually, a "Buyer" and collectively, the "Buyers") attached to the Securities Purchase Agreement, dated as of May 7, 2012, by and among the Company and such Buyers (the "Purchase Agreement").

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.

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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.

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 Debenture Shares have been duly authorized, and upon conversion of the Debentures or other issuance of Debenture Shares in accordance with the terms of the Debentures, will be validly issued, fully paid and nonassessable, and (ii) the Warrant Shares have been duly authorized, and when the Warrants are exercised and the Warrant Shares 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. 333-182053) and related Prospectus of Stereotaxis, Inc. for the registration of up to 7,474,153 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