

DERMA SCIENCES, INC.

Form 424B5

December 05, 2012

The information in this preliminary prospectus supplement and the accompanying prospectus is not complete and may be changed. A registration statement relating to these securities has been declared effective by the Securities and Exchange Commission. This preliminary prospectus supplement and the accompanying prospectus are not an offer to sell these securities and are not soliciting an offer to buy these securities in any jurisdiction where the offer or sale is not permitted.

**Filed pursuant to Rule 424(b)(5)
Registration No. 333-173870**

Subject to Completion, dated December 5, 2012

**PROSPECTUS SUPPLEMENT
(To Prospectus dated May 20, 2011)**

Shares
DERMA SCIENCES, INC.
Common Stock

\$ per share

Derma Sciences, Inc. is offering shares of
common stock.

The last reported sale price of our common stock on December 4, 2012, was \$11.18 per share

Trading symbol: NASDAQ Capital Market DSCI

Investing in the shares involves significant risks. See Risk Factors beginning on page S-3 of this prospectus supplement, on page 3 of the accompanying prospectus and the risk factors contained in our filings with the Securities and Exchange Commission, which we have incorporated herein.

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

| | Per Share | Total |
|----------------------------------|-----------|-------|
| Public Offering Price | \$ | \$ |
| Underwriting Discount | \$ | \$ |
| Proceeds, before expenses, to us | \$ | \$ |

We have granted the underwriters an option, for a period of 30 days from the date of this prospectus supplement, to purchase up to an additional shares of common stock to cover over-allotments, if any. If the underwriter exercises

the option in full, the total underwriting discount payable by us will be \$, and the total proceeds to us, before expenses, will be \$.

The underwriters expect to deliver the shares to purchasers on or about December , 2012.

Piper Jaffray

**The date of this prospectus supplement is December
, 2012.**

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You should rely only on the information contained in this prospectus supplement, the accompanying prospectus or information incorporated by reference herein. We have not authorized anyone else to provide you with different information. You should not assume that the information in this prospectus supplement or the accompanying prospectus is accurate as of any date other than the date on the front of those documents or that any document incorporated by reference is accurate as of any date other than its filing date. You should not consider this prospectus supplement or the accompanying prospectus to be an offer or solicitation relating to the shares in any jurisdiction in which such an offer or solicitation relating to the shares is not authorized. Furthermore, you should not consider this prospectus supplement or the accompanying prospectus to be an offer or solicitation relating to the shares if the person making the offer or solicitation is not qualified to do so, or if it is unlawful for you to receive such an offer or solicitation.

This prospectus supplement is part of a registration statement that we have filed with the Securities and Exchange Commission, referred to herein as the SEC, utilizing a shelf registration process. Under this shelf registration process, we are offering to sell our common stock, which we refer to herein as the shares, using this prospectus supplement and the accompanying prospectus. In this prospectus supplement, we provide you with specific information about the shares that we are selling in this offering. Both this prospectus supplement and the accompanying prospectus include important information about us, the shares being offered and other information you should know before investing. This prospectus supplement also adds, updates and changes information contained in the accompanying prospectus.

You should read this prospectus supplement, the accompanying prospectus and the information incorporated by reference herein and therein before investing in the shares.

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PROSPECTUS SUPPLEMENT SUMMARY

This summary highlights certain information appearing elsewhere in this prospectus supplement and in the accompanying prospectus and in the documents we incorporate by reference. After you read this summary, you should read and consider carefully the more detailed information and financial statements and related notes that we include in and/or incorporate by reference into this prospectus supplement and the accompanying prospectus, especially the section entitled Risk Factors. If you invest in the shares, you are assuming a high degree of risk.

Our Company

We are a medical technology company developing and delivering solutions for advanced wound care management. Our business focuses on three areas of this market:

Pharmaceutical Wound Care. We currently have one drug candidate, DSC127, in development with an initial indication of treatment of diabetic foot ulcers. We reported positive Phase 2 data in 1H 2011, and are working towards initiation of the Phase 3 pivotal studies. We licensed the intellectual property surrounding this compound from the University of Southern California in 2007, and have the global rights to all dermal indications.

Advanced Wound Care. We have built, through internal development or in-licensing, a line of proprietary advanced wound care dressings. This line includes MEDIHONEY®, XTRASORB®, BIOGUARD®, TCC-EZ™ and ALGICELL® Ag. These products, along with other advanced wound care products, have grown at a compound annual growth rate of 50% since 2007, and carry average gross margins of approximately 50%.

Traditional Wound Care. Our base business includes both branded and private-label/OEM dressings for basic wound care. This business has been instrumental in providing positive cash flow in support of our other developmental areas.

The Company maintains manufacturing facilities in Toronto, Canada and Nantong, China and a well-established network of third party suppliers for its products. The majority of our products are sold through distributors to various health care providers such as wound care centers, extended care facilities, acute care facilities, home health care agencies and physicians' offices. Some of our products are sold through retail channels. The Company markets its products principally through direct sales representatives in the United States, Canada and the United Kingdom, and through independent distributors within other select international markets.

Corporate Information

Derma Sciences, Inc. was organized and incorporated in 1984. In 1994, we completed our initial public offering and our common stock has been publicly held since that time. Derma Sciences, Inc. and our subsidiaries Sunshine Products, Inc., MedEfficiency, Inc., Derma Sciences Canada Inc., Derma First Aid Products, Inc. and Derma Sciences Europe, Ltd. are referred to collectively in this prospectus supplement as the Company, we or us. Our executive offices are located at 214 Carnegie Center, Suite 300, Princeton, New Jersey and our telephone number is (609) 514-4744. Our corporate website address is www.dermasciences.com. The information contained on, or accessible through, our website is not part of this prospectus supplement or the accompanying prospectus.

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THE OFFERING

Common stock offered

shares

shares if the underwriters exercise in full their option to purchase up to an additional shares to cover any over-allotments.

Common stock to be outstanding after this offering

shares

shares if the underwriters exercise in full their option to purchase up to an additional shares to cover any over-allotments.

Use of proceeds

We intend to use the net proceeds from this offering for the continued development of DSC127 and for general corporate purposes. See Use of Proceeds on page S-7.

Risk factors

You should read the Risk Factors beginning on page 3 of Amendment No. 1 on Form 10-K/A to our Annual Report on Form 10-K for the year ended December 31, 2011, page 29 of our Quarterly Report on Form 10-Q for the quarter ended September 30, 2012, page S-3 of this prospectus supplement and page 3 of the accompanying prospectus and in the documents incorporated by reference into this prospectus supplement and the accompanying prospectus for a discussion of factors you should consider carefully before deciding to invest in our common stock.

NASDAQ Capital Market symbol

DSCI

Our common stock to be outstanding after this offering is based on 12,957,923 shares outstanding as of September 30, 2012, and excludes the following as of that date:

52,900 shares of common stock issuable upon the vesting of outstanding restricted stock units;
1,704,110 shares of common stock issuable upon the exercise of stock options at a weighted average exercise price of \$6.39 per share; and
2,951,404 shares of common stock issuable upon the exercise of outstanding warrants at a weighted average exercise price of \$8.84 per share.

Unless otherwise indicated, all information in this prospectus supplements assumes no exercise by the underwriters of their overallotment option.

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RISK FACTORS

Investing in the shares involves a high degree of risk. You should carefully consider the risks and all other information contained in this prospectus supplement and the accompanying prospectus, including the risk factors in the section entitled Risk Factors in the accompanying prospectus and in the documents incorporated by reference herein and therein. You should also refer to the other information in this prospectus supplement and the accompanying prospectus, including our financial statements and the related notes incorporated by reference in this prospectus supplement and the accompanying prospectus.

In addition to the risk factors set forth below, please see Item 1A. Risk Factors beginning on page 3 of Amendment No. 1 on Form 10-K/A to our Annual Report on Form 10-K for the year ended December 31, 2011 and page 3 of our Quarterly Report on Form 10-Q for the quarter ended September 30, 2012, which are incorporated herein by reference.

Updated Risk Factor

Claims against us or our products could adversely affect our business.

We sell over-the-counter products and medical devices and are exposed to the risk of lawsuits claiming alleged injury caused by our products and the ways in which we represent our products. Among the grounds for potential claims against us are injuries due to alleged product inefficacy and injuries resulting from infection due to allegedly non-sterile products, as well as claims against us for the way in which we advertise our products. Although we carry product liability insurance with limits of \$1.0 million per occurrence and \$2.0 million aggregate with \$10.0 million in umbrella coverage, this insurance may not be adequate to reimburse us for all damages that we could suffer as a result of successful product liability claims. Also, defending against a claim could be time consuming and costly. No material product liability claim has ever been made against us and we are not aware of any pending product liability claims. However, a successful material product liability suit could adversely affect our business.

In addition, on November 7, 2012, a competitor filed a claim against us concerning, among other items, unfair competition and false advertising with respect to our Medihoney product. Management believes that these claims are without merit and immaterial in scope and amount and intend to vigorously defend against this action. There can be no assurance that we will be successful in defending against this action and if this action is successful it could adversely affect our business.

Risks Related to this Offering

Our management will have broad discretion in the use of the net proceeds we receive in this offering and might not apply the proceeds in ways that increase the value of your investment.

Our management will have broad discretion over the use of our net proceeds from this offering, and you will be relying on the judgment of our management regarding the application of these proceeds. Our management might not apply our net proceeds in ways that ultimately increase the value of your investment and we might not be able to yield a significant return, if any, on any investment of these net proceeds. Our failure to apply these funds effectively could have a material adverse effect on our business, delay the development of our products and cause the price of our

common stock to decline.

Investors in this offering will experience immediate and substantial dilution.

The public offering price of the shares offered pursuant to this prospectus supplement is substantially higher than the net tangible book value per share of our common stock. Therefore, if you purchase shares of common stock in this offering, you will incur immediate and substantial dilution in the pro forma net tangible book value per share of common stock from the price per share that you pay for the common stock. In addition, the outstanding shares of our preferred stock contain adjustment provisions to their conversion ratios in the event we issue securities below market value, as such term is defined in the provisions of the shares of preferred stock. In the event the shares offered pursuant to this prospectus supplement are issued below market value, the conversion ratios of the outstanding shares of preferred stock will be subject to adjustment. See the section entitled "Dilution" on page S-6 of this prospectus supplement for a more detailed discussion of the dilution associated with this offering.

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CAUTIONARY NOTE REGARDING FORWARD LOOKING STATEMENTS

This prospectus supplement and the documents incorporated by reference into this prospectus supplement contain forward-looking statements. Such forward-looking statements include statements regarding, among other things, our projected sales and profitability, our growth strategies, anticipated trends in our industry, our future financing plans, and our anticipated needs for working capital. Forward-looking statements, which involve assumptions and describe our future plans, strategies, and expectations, are generally identifiable by use of the words *may*, *should*, *expect*, *anticipate*, *estimate*, *believe*, *intend*, or *project* or the negative of these words or other variations on these words or comparable terminology. This information may involve known and unknown risks, uncertainties, and other factors that may cause our actual results, performance, or achievements to be materially different from the future results, performance, or achievements expressed or implied by any forward-looking statements. Actual events or results may differ materially from those discussed in forward-looking statements as a result of various factors, including, without limitation, the risks outlined under *Risk Factors* and matters described in this prospectus supplement generally. In light of these risks and uncertainties, there can be no assurance that the forward-looking statements contained in this prospectus supplement will in fact occur.

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The following table sets forth our cash and cash equivalents and our capitalization as of September 30, 2012 on a historical basis and as adjusted to give effect to this offering and the application of the estimated net proceeds of this offering as described under Use of Proceeds. This table should be read in conjunction with Management's Discussion and Analysis of Results of Operations and Financial Condition and the consolidated financial statements and notes thereto included in our quarterly report on Form 10-Q for the nine months ended September 30, 2012, which is incorporated by reference into this prospectus supplement and the accompanying prospectus.

| | As of September 30, 2012 Actual ^{As} Adjusted (unaudited) |
|--|---|
| Cash and cash equivalents | |
| Stockholders' equity: | |
| Convertible Preferred Stock, par value \$0.01: 1,468,750 shares authorized; 73,332 issued and outstanding at September 30, 2012 ⁽¹⁾ | |
| Common stock, \$0.01 par value: 25,000,000 shares authorized; 12,957,923 shares issued and outstanding at September 30, 2012; shares issued and outstanding as adjusted ⁽¹⁾ | |
| Additional paid-in capital | |
| Deficit accumulated during the development stage | |
| Accumulated other comprehensive loss | |
| Total stockholders' equity | |
| Total capitalization | |

⁽¹⁾ Excludes approximately 200,000 shares of common stock issuable in connection with a cumulative adjustment to the conversion ratios of the shares of preferred stock.

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DILUTION

If you invest in the shares, your interest will be diluted immediately to the extent of the difference between the public offering price per share and the adjusted net tangible book value per share of our common stock after this offering.

The net tangible book value of our common stock as of September 30, 2012, was \$32,915,660, or approximately \$2.54 per share. Net tangible book value per share represents the amount of our total tangible assets, excluding goodwill and intangible assets, less total liabilities divided by the total number of shares of our common stock outstanding.

Dilution per share to new investors represents the difference between the amount per share paid by purchasers for our common stock in this offering and the net tangible book value per share of our common stock immediately following the completion of this offering.

After giving effect to the sale of the shares offered by this prospectus supplement at an offering price of \$ per share in connection with this offering and after deducting the estimated underwriting discounts and our estimated offering expenses, our pro forma net tangible book value as of September 30, 2012 would have been \$ or approximately \$ per share. This represents an immediate increase in net tangible book value of approximately \$ per share to our existing stockholders and an immediate dilution in pro forma net tangible book value of approximately \$ per share to purchasers of the shares in this offering, as illustrated by the following table:

| | | |
|---|---------|----|
| Offering price per share | | \$ |
| Net tangible book value per share as of September 30, 2012 | \$ 2.54 | |
| Increase per share attributable to new investors | | |
| Pro forma net tangible book value per share as of September 30, 2012 after giving effect to this offering | | |
| Dilution per share to new investors | | \$ |

If the underwriters' over-allotment option is exercised in full, our as adjusted net tangible book value per share after giving effect to this offering would be \$ per share, representing an increase in net tangible book value per share to existing stockholders of approximately \$ per share, and the dilution in our as adjusted net tangible book value per share to investors in this offering would be \$ per share.

The discussion of dilution, and the table quantifying it, assume no exercise of any outstanding options or warrants or other potentially dilutive securities. The exercise of potentially dilutive securities having an exercise price less than the offering price would increase the dilutive effect to new investors.

The table above excludes the following potentially dilutive securities as of September 30, 2012:

- 1,704,110 shares issuable upon the exercise of stock options at a weighted average exercise price of \$6.39 per share;
- and
- 2,951,404 shares issuable upon the exercise of outstanding warrants at a weighted average exercise price of \$8.84 per share.

52,900 shares of common stock issuable upon the vesting of restricted stock units.

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USE OF PROCEEDS

We estimate that the net proceeds from this offering will be approximately \$, after deducting the underwriting discount and estimated expenses payable by us. We expect to receive net proceeds of approximately \$ if the underwriters' option to acquire additional shares is exercised in full.

We will use the net proceeds from this offering primarily for the continued development of DSC127 and for general corporate purposes. As of the date of this prospectus supplement, we cannot specify with certainty all of the particular uses for the net proceeds to us from this offering. Accordingly, our management will retain broad discretion as to the allocation of the net proceeds from this offering. Pending application of the net proceeds as described above, we intend to temporarily invest the proceeds in short-term, interest-bearing instruments.

DESCRIPTION OF CAPITAL STOCK

Our authorized capital as of September 30, 2012 consists of: (1) 25,000,000 shares of common stock, \$0.01 par value per share, of which 12,957,923 shares were issued and outstanding, and (2) 1,468,750 shares of preferred stock, \$0.01 par value per share, of which 73,332 were issued and outstanding.

In addition, as of September 30, 2012, there were (i) 52,900 shares issuable upon the vesting of outstanding restricted stock units; (ii) 1,704,110 shares issuable upon the exercise of stock options at a weighted average exercise price of \$6.39 per share; and (iii) 2,951,404 shares issuable upon the exercise of outstanding warrants at a weighted average exercise price of \$8.84 per share.

The number of shares presented above do not include any of the shares to be issued in this offering.

The material terms and provisions of our common stock are described under the caption Description of Common and Preferred Stock starting on page 5 of the accompanying prospectus.

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UNDERWRITING

We are offering the shares of common stock described in this prospectus supplement through Piper Jaffray & Co., or Piper Jaffray, as the sole underwriter for this offering. We have entered into an underwriting agreement with Piper Jaffray. Subject to the terms and conditions of the underwriting agreement, we have agreed to sell to Piper Jaffray, and Piper Jaffray has agreed to purchase from us, all of the shares offered by us in this offering.

Piper Jaffray proposes to offer the common stock directly to the public at the price set forth on the cover page of this prospectus supplement and to certain dealers at that price less a concession not in excess of \$ per share. After the offering, these figures may be changed by Piper Jaffray.

The underwriting fee is equal to the public offering price per share of common stock less the amount paid by Piper Jaffray to us per share of common stock. The following table shows the per share and total underwriting discount to be paid to Piper Jaffray in this offering.

| | Assuming no exercise of the over-allotment option | Assuming exercise of the over-allotment option |
|-----------|--|---|
| Per share | \$ | \$ |
| Total | | |

We have agreed to indemnify Piper Jaffray against certain liabilities, including civil liabilities under the Securities Act of 1933, as amended, or to contribute to payments that Piper Jaffray may be required to make in respect of those liabilities. We have also agreed to reimburse Piper Jaffray up to \$100,000 for the expenses incurred by it in connection with this offering.

We, each of our directors and executive officers and Comvita Ltd., one of our stockholders, are subject to lock-up agreements that prohibit us and them from offering for sale, pledging, assigning, encumbering, announcing the intention to sell, selling, contracting to sell, granting any option, right or warrant to purchase, or otherwise transferring or disposing of, any shares of our common stock or any securities convertible into or exercisable or exchangeable for shares of our common stock for a period of at least 90 days following the date of this prospectus supplement, subject to certain exceptions, without the prior written consent of Piper Jaffray. The lock-up agreements do not prohibit our directors and executive officers and Comvita Ltd. from transferring shares of our common stock for bona fide estate or tax planning purposes, subject to certain requirements, including that the transferee be subject to the same lock-up terms.

The lock-up agreements do not prohibit us from issuing shares upon the exercise or conversion of securities outstanding on the date of this prospectus supplement. The lock-up provisions do not prevent us from selling shares to Piper Jaffray pursuant to the underwriting agreement, or from granting options to acquire securities under our existing stock option plans or issuing shares upon the exercise or conversion of securities outstanding on the date of this prospectus supplement.

The 90-day lock-up period in all of the lock-up agreements is subject to extension if (i) during the last 17 days of the lock-up period we issue an earnings release or material news or a material event relating to us occurs or (ii) prior to the expiration of the lock-up period, we announce that we will release earnings results during the 16-day period beginning on the last day of the lock-up period, in which case the restrictions imposed in these lock-up agreements shall continue to apply until the expiration of the 18-day period beginning on the issuance of the earnings release or the occurrence of the material news or material event, unless Piper Jaffray waives the extension in writing.

Our shares are quoted on the NASDAQ Capital Market under the symbol DSCI.

To facilitate the offering, Piper Jaffray may engage in transactions that stabilize, maintain or otherwise affect the price of our common stock during and after the offering. Specifically, Piper Jaffray may over-allot or otherwise create a short position in the common stock for its own account by selling more shares of common stock than we have sold to Piper Jaffray. Short sales involve the sale by Piper Jaffray of a

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greater number of shares than Piper Jaffray is required to purchase in the offering. Piper Jaffray may close out any short position by either exercising its option to purchase additional shares or purchasing shares in the open market.

In addition, Piper Jaffray may stabilize or maintain the price of the common stock by bidding for or purchasing shares of common stock in the open market and may impose penalty bids. If penalty bids are imposed, selling concessions allowed to syndicate members or other broker-dealers participating in the offering are reclaimed if shares of common stock previously distributed in the offering are repurchased, whether in connection with stabilization transactions or otherwise. The effect of these transactions may be to stabilize or maintain the market price of the common stock at a level above that which might otherwise prevail in the open market. The imposition of a penalty bid may also affect the price of the common stock to the extent that it discourages resales of the common stock. The magnitude or effect of any stabilization or other transactions is uncertain. These transactions may be effected on the NASDAQ Capital Market or otherwise and, if commenced, may be discontinued at any time. Piper Jaffray may also engage in passive market making transactions in our common stock. Passive market making consists of displaying bids on the NASDAQ Capital Market is limited by the prices of independent market makers and effecting purchases limited by those prices in response to order flow. Rule 103 of Regulation M promulgated by the Securities and Exchange Commission limits the amount of net purchases that each passive market maker may make and the displayed size of each bid. Passive market making may stabilize the market price of the common stock at a level above that which might otherwise prevail in the open market and, if commenced, may be discontinued at any time.

This prospectus supplement and the accompanying prospectus in electronic format may be made available on the web site maintained by Piper Jaffray and Piper Jaffray may distribute prospectus supplements electronically.

From time to time in the ordinary course of their respective businesses, Piper Jaffray and certain of its affiliates may have in the past or may in the future engage in commercial banking or investment banking transactions with, or provide financial advisory services to, us and our affiliates for which they were paid, or may in the future be paid, customary fees.

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LEGAL MATTERS

The validity of the issuance of the shares offered by this prospectus supplement and the accompanying prospectus, together with certain other legal matters, will be passed upon for us by Thompson Hine LLP, New York, New York. Certain matters with respect to this offering will be passed upon for the underwriter by Goodwin Procter LLP, New York, New York.

EXPERTS

The consolidated financial statements of Derma Sciences, Inc. as of December 31, 2011 and 2010, and for the years then ended have been incorporated by reference herein and in the registration statement in reliance upon the report of KPMG LLP, independent registered public accounting firm, incorporated by reference herein and upon the authority of said firm as experts in accounting and auditing.

INCORPORATION OF CERTAIN DOCUMENTS BY REFERENCE

The SEC allows us to incorporate by reference information into this prospectus supplement and the accompanying prospectus, which means that we can disclose important information about us by referring you to another document filed separately with the SEC. The information incorporated by reference is considered to be a part of this prospectus supplement and the accompanying prospectus.

We incorporate the following documents by reference into this prospectus supplement:

Our registration statement on Form 8-A effective February 8, 2010.

Our notice of annual meeting of shareholders and definitive proxy statement filed April 17, 2012.

Our Annual Report on Form 10-K filed March 28, 2012 for the year ended December 31, 2011 (the Form 10-K), as amended by Amendment No. 1 to the Form 10-K on Form 10-K/A filed on April 2, 2012.

Our Quarterly Report on Form 10-Q filed May 14, 2012 for the quarter ended March 31, 2012.

Our Quarterly Report on Form 10-Q filed August 13, 2012 for the quarter ended June 30, 2012 (the Form 10-Q), as amended by Amendment No. 1 to the Form 10-Q on Form 10-Q/A filed on August 30, 2012.

Our Quarterly Report on Form 10-Q filed November 9, 2012 for the quarter ended September 30, 2012.

Our Current Report on Form 8-K filed on March 13, 2012.

Our Current Report on Form 8-K filed on March 16, 2012.

Our Current Report on Form 8-K filed on March 30, 2012.

Our Current Report on Form 8-K filed on April 4, 2012.

Our Current Report on Form 8-K filed on April 20, 2012.

Our Current Report on Form 8-K filed on May 4, 2012.

Our Current Report on Form 8-K filed on May 18, 2012.

Our Current Report on Form 8-K filed on June 5, 2012.

Our Current Report on Form 8-K/A filed on June 29, 2012.

Our Current Report on Form 8-K filed on July 3, 2012.

Our Current Report on Form 8-K filed on July 18, 2012.

Our Current Report on Form 8-K filed on September 20, 2012.

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We also incorporate by reference the information contained in all other documents we file with the SEC pursuant to Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act (other than portions of these documents that are either (i) described in paragraph (e) of Item 201 of Registration S-K or paragraphs (d)(1)-(3) and (e)(5) of Item 407 of Regulation S-K promulgated by the SEC or (ii) furnished under Item 2.02 or Item 7.01 of a Current Report on Form 8-K, unless otherwise indicated therein) after the date of this prospectus supplement and prior to the termination of the offering under this prospectus supplement. The information contained in any such document will be considered part of this prospectus supplement and the accompanying prospectus from the date the document is filed with the SEC.

Any statement contained in a document incorporated or deemed to be incorporated by reference in this prospectus supplement or the accompanying prospectus will be deemed to be modified or superseded to the extent that a statement contained herein or in any other subsequently filed document which also is or is deemed to be incorporated by reference in this prospectus supplement or the accompanying prospectus modifies or supersedes that statement. Any statement so modified or superseded will not be deemed, except as so modified or superseded, to constitute a part of this prospectus supplement or the accompanying prospectus.

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PROSPECTUS

\$50,000,000

Derma Sciences, Inc.

**Common Stock
Warrants**

From time to time, we may offer any combination of the securities described in this prospectus, either individually or in units. We may also offer common stock upon the exercise of warrants. Such securities may be offered and sold by us in one or more offerings with an initial purchase price not to exceed \$50,000,000.

This prospectus provides a general description of the securities that may be offered. We will provide specific information and the terms of the securities being offered in supplements to this prospectus. The supplements may also add, update or change information in this prospectus. Please read this prospectus and any prospectus supplements together with any documents incorporated by reference carefully before investing. This prospectus may not be used to sell securities unless accompanied by a prospectus supplement.

The aggregate market value of our outstanding common stock held by non-affiliates is \$48,931,377 based on 6,738,849 shares of common stock outstanding, of which 5,689,695 shares are held by non-affiliates, and a per share value of \$8.60 based on the closing price of our common stock on the NASDAQ Capital Market on April 29, 2011.

We have not offered any securities pursuant to General Instruction I.B.6 of Form S-3 during the prior 12 calendar month period that ends on and includes the date of this prospectus.

We may offer these securities directly to investors, through underwriters, dealers or agents, on a continuous or delayed basis. See Plan of Distribution. Each prospectus supplement will provide the terms of the plan of distribution relating to each series of securities.

Our Common Stock is traded on the NASDAQ Capital Market under the ticker symbol DSCI. On May 19, 2011 the closing price for the common stock as reported by NASDAQ was \$9.42.

Investing in our securities involves substantial risks that you should consider and that are described in our annual report on Form 10-K for the fiscal year ended December 31, 2010 under the heading Item 1A. Risk Factors beginning on page 10, and as described or may be described in any subsequent quarterly report on Form 10-Q under the heading Item 1A. Risk Factors which reports are incorporated by reference into this prospectus.

NEITHER THE SECURITIES AND EXCHANGE COMMISSION NOR ANY STATE SECURITIES COMMISSION HAS APPROVED OR DISAPPROVED OF THESE SECURITIES OR DETERMINED IF THIS PROSPECTUS IS TRUTHFUL OR COMPLETE. ANY REPRESENTATION TO THE CONTRARY IS A CRIMINAL OFFENSE.

The date of this prospectus is May 20, 2011.

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ABOUT THIS PROSPECTUS

This prospectus is a part of a registration statement that we filed with the Securities and Exchange Commission, or the SEC, utilizing a shelf registration process. Under this shelf registration process, we may offer to sell the securities described in this prospectus in one or more offerings up to a total of \$50,000,000. This prospectus provides you with a general description of the securities we may offer. Each time we sell securities under this shelf registration, we will provide a prospectus supplement that will contain specific information about the terms of that offering. The prospectus supplement may also add, update or change information contained in this prospectus. To the extent that any statement that we make in a prospectus supplement is inconsistent with statements made in this prospectus, the statements made in this prospectus will be deemed modified or superseded by those made in the prospectus supplement. You should read both this prospectus and any prospectus supplement, including all documents incorporated herein or therein by reference, together with additional information described under [Where You Can Find More Information](#).

We have not authorized any dealer, salesman or other person to give any information or to make any representation other than those contained or incorporated by reference in this prospectus and the accompanying prospectus supplement. You must not rely upon any information or representation not contained or incorporated by reference in this prospectus or the accompanying prospectus supplement. This prospectus and the accompanying prospectus supplement do not constitute an offer to sell or the solicitation of an offer to buy any securities other than the registered securities to which they relate, nor do this prospectus and the accompanying prospectus supplement constitute an offer to sell or the solicitation of an offer to buy securities in any jurisdiction to any person to whom it is unlawful to make such offer or solicitation in such jurisdiction. You should not assume that the information contained in this prospectus and the accompanying prospectus supplement is accurate on any date subsequent to the date set forth on the front of the document or that any information we have incorporated by reference is correct on any date subsequent to the date of the document incorporated by reference even though this prospectus and any accompanying prospectus supplement is delivered or securities are sold on a later date.

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OUR COMPANY

We are a specialty medical device/pharmaceutical company with a primary focus on wound care. We engage in the manufacture, marketing and sale of three proprietary dermatological related product lines: (1) wound care, (2) wound closure and specialty securement devices, and (3) skin care. In addition, we have leveraged our expanding manufacturing capabilities by building a growing private label/original equipment manufacture (OEM) business. Our customers consist of various health care agencies and institutions such as wound care centers, long-term care facilities, hospitals, home healthcare agencies, physicians offices and closed door pharmacies. We also sell our products through retail channels such as retail pharmacies, other retail outlets and first-aid kit manufacturers. While we have our own direct selling organization, our products are principally sold through medical products supply distributors. We currently sell our products in the United States, Canada and select international markets. Our principal United States distribution facilities are located in St. Louis, Missouri, and Houston, Texas. In Canada and Europe, our products are distributed exclusively by third party distributors. Our principal manufacturing facility is located in Toronto, Canada. We, through our subsidiary Derma Canada, have a light manufacturing facility in Nantong, China producing low volume and/or labor intensive wound care products.

Derma Sciences, Inc. was organized and incorporated in 1984. In 1994, we completed our initial public offering and our common stock has been publicly held since that time. Derma Sciences, Inc. and our subsidiaries Sunshine Products, Inc., Derma Sciences Canada Inc., Derma First Aid Products, Inc. and Derma Sciences Europe, Ltd. are referred to collectively in this prospectus as `we or us . Our executive offices are located at 214 Carnegie Center, Suite 300, Princeton, New Jersey and our telephone number is (609) 514-4744.

RISK FACTORS

An investment in our securities involves a high degree of risk. Prior to making a decision about investing in our securities, you should carefully consider the specific risk factors discussed in the sections entitled Risk Factors contained in our annual report on Form 10-K for the fiscal year ended December 31, 2010 under the heading Item 1A. Risk Factors beginning on Page 10, and as described or may be described in any subsequent quarterly report on Form 10-Q under the heading Item 1A. Risk Factors, as well as in any applicable prospectus supplement and contained or to be contained in our filings with the SEC and incorporated by reference in this prospectus, together with all of the other information contained in this prospectus, or any applicable prospectus supplement. If any of the risks or uncertainties described in our SEC filings or any prospectus supplement or any additional risks and uncertainties actually occur, our business, financial condition and results of operations could be materially and adversely affected. In that case, the trading price of our securities could decline and you might lose all or part of the value of your investment.

CAUTION REGARDING FORWARD LOOKING STATEMENTS

This prospectus and the documents incorporated by reference into this prospectus and any prospectus supplement contain forward-looking statements. Such forward-looking statements include statements regarding, among other things, (a) our projected sales and profitability, (b) our growth strategies, (c) anticipated trends in our industry, (d) our future financing plans, and (e) our anticipated needs for working capital. Forward-looking statements, which involve assumptions and describe our future plans, strategies, and expectations, are generally identifiable by use of the words may, should, expect, anticipate, estimate, believe, intend, or project or the negative of these words or c

on these words or comparable terminology. This information may involve known and unknown risks, uncertainties, and other factors that may cause our actual results, performance, or achievements to be materially different from the future results, performance, or achievements expressed or implied by any forward-looking statements. Actual events or results may differ materially from those discussed in forward-looking statements as a result of various factors, including, without limitation, the risks outlined under **Risk Factors** and matters described in this prospectus generally.

In light of these risks and uncertainties, there can be no assurance that the forward-looking statements contained in this prospectus will in fact occur.

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WHERE YOU CAN FIND MORE INFORMATION

We file reports, proxy statements and other information with the Securities and Exchange Commission. You may read and copy these reports, proxy statements and other information at the public reference facilities maintained by the SEC at Room 1204, Judiciary Plaza, 450 Fifth Street, N.W. Washington, D.C. 20549 and you can obtain information on the operation of the Public Reference Room by calling the SEC at 1-800-SEC-0330. The SEC also maintains an Internet Web site at <http://www.sec.gov> that contains reports, proxy and information statements and other information regarding issuers, like Derma Sciences, that file electronically with the SEC. Additional information about Derma Sciences can also be found at our Web site at <http://www.dermasciences.com>.

The SEC allows us to incorporate by reference the information from the documents we file with them which means that we can disclose important information to you by referring you to those documents. The information which we incorporate by reference is part of this prospectus. Additional information that we file with the SEC will automatically update previous information. We incorporate the following documents by reference into this prospectus:

- (a) Our registration statement on Form 8-A effective May 13, 1994.
- (b) Our annual report on Form 10-K filed March 29, 2011 for the year ended December 31, 2010.
- (c) Our quarterly report on Form 10-Q filed May 11, 2011 for the quarter ended March 31, 2011.

Our notice of annual meeting of shareholders and definitive proxy statement filed April 5, 2011 relative to the (d) election of directors, amendment of our stock option plan and ratification of the appointment of KPMG LLP as the Company's independent registered public accounting firm for the year ending December 31, 2011.

All documents filed by Derma Sciences pursuant to Section 13(a), 13(c), 14 and 15(d) of the Exchange Act after the date of this prospectus and prior to the filing of a post effective amendment to the registration statement which indicates that all securities offered by this registration statement have been sold, or which deregisters all securities then remaining unsold, are incorporated by reference into this prospectus from the date of filing of these documents.

Any statement contained in this prospectus or in a document incorporated in this prospectus by reference will be considered modified or replaced for purposes of this prospectus if the statement is modified or replaced by a statement in a later document that also is incorporated by reference in this prospectus.

This prospectus is part of a registration statement we filed with the SEC under the Securities Act of 1933. As permitted by the rules and regulations of the SEC, this prospectus does not contain all of the information set forth in the registration statement and the exhibits and schedules that were filed with it. The statements contained in this prospectus as to the contents of any contract or any other document are not necessarily complete. We qualify any statement by reference to the copy of the contract or document filed as an exhibit to the registration statement. If you would like a copy of any document incorporated in this prospectus by reference (other than exhibits unless these exhibits are specifically incorporated by reference in a document), you can call or write to us at our principal executive offices, Attention: John E. Yetter, CPA, Vice President and Chief Financial Officer, at 214 Carnegie Center, Suite 300, Princeton, New Jersey 08540, telephone (609) 514-4744. We will provide this information upon written or oral request and without charge to any person, including a beneficial owner, to whom a copy of this prospectus is delivered.

We have not authorized any dealer, salesperson or other individual to give any information or to make any representation not contained or incorporated by reference in this prospectus. If you receive any of that kind of information or if any of those types of representations are made to you, you must not rely on the information or representations as having been authorized by Derma Sciences. Also, you must not consider that the delivery of this prospectus or any sale made under it implies that the affairs of Derma Sciences have remained unchanged since the date of this prospectus or that the information contained in this prospectus is correct or complete as of any time after

the date of this prospectus.

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This prospectus and any supplement to this prospectus do not constitute an offer to sell or a solicitation of an offer to buy any securities covered by this prospectus to any person in any jurisdiction in which this offer or solicitation is unlawful.

USE OF PROCEEDS

Unless otherwise indicated in the applicable prospectus supplement, we anticipate that the net proceeds, if any, from the sale of the securities that we may offer under this prospectus and any accompanying prospectus supplement will be used primarily for working capital and general corporate purposes. Additional information on the use of net proceeds from the sale of securities covered by this prospectus will be set forth in prospectus supplements relating to specific offerings.

DESCRIPTION OF COMMON AND PREFERRED STOCK

Our authorized capital as of April 30, 2011 consists of: (1) 18,750,000 shares of common stock, \$0.01 par value per share, of which 6,738,849 shares are issued and outstanding, and (2) 1,468,750 shares of preferred stock, \$0.01 par value per share, of which 284,844 are issued and outstanding.

Each holder of common stock is entitled to receive ratable dividends, if any, as may be declared by our board of directors out of funds legally available for the payment of dividends. We have not paid any dividends on our common stock and none are contemplated in the foreseeable future. We anticipate that all earnings that may be generated from our operations will be used to finance our growth.

Holders of common and preferred stock are entitled to one vote for each share held of record. Holders of our common stock may cumulate their votes for the election of our directors. That is, holders of our common stock may multiply the number of shares owned by the number of directors standing for election and cast the resulting number of votes for a single director-nominee or divide the resulting number of votes among two or more director-nominees.

With respect to any matter, other than the election of directors or a matter for which the affirmative vote of the holders of a specified portion of the shares entitled to vote is required by the Pennsylvania Business Corporation Law of 1988, the affirmative vote of the holders of a majority of the common and preferred shares represented and entitled to vote on the matter at a meeting at which a quorum is present is required to take action. A quorum is a majority of the aggregate number of shares of common stock and preferred stock issued and outstanding as of the record date of the subject meeting. Directors are elected by a plurality of the votes cast by the holders of shares entitled to vote in the election of directors at a meeting of shareholders at which a majority is present.

The holders of our common stock have no preemptive, subscription, conversion or redemption rights. The holders of our preferred stock have no preemptive or subscription rights. However, these holders may, at any time, convert their preferred shares into common shares on a 1-for-1 basis. In addition, upon our merger, acquisition, liquidation, dissolution or winding-up, the holders of our preferred stock are entitled to receive a liquidation preference in the amount of the purchase price of their preferred shares and no other proceeds or dividends whatsoever. The preferred stock liquidation preference is currently \$4,201,426. Upon payment of the preferred stock liquidation preference, holders of our common stock are entitled to receive, pro rata, the balance of all consideration paid or distributable upon our merger, acquisition, liquidation, dissolution or winding-up.

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DESCRIPTION OF WARRANTS

We may issue warrants for the purchase of common stock in one or more series. We may issue warrants independently or together with common stock and the warrants may be attached to or separate from the common stock. While the terms summarized below will apply generally to any warrants that we may offer, we will describe the particular terms of any series of warrants in more detail in the applicable prospectus supplement. The terms of any warrants offered under a prospectus supplement may differ from the terms described below.

We will file as exhibits to the registration statement of which this prospectus is a part, or will incorporate by reference from reports that we file with the SEC, the form of warrant agreement, including a form of warrant certificate, that describes the terms of the particular series of warrants we are offering before the issuance of the related series of warrants. The following summaries of material provisions of the warrants and the warrant agreements are subject to, and qualified in their entirety by reference to, all the provisions of the warrant agreement and warrant certificate applicable to the particular series of warrants that we may offer under this prospectus. We urge you to read the applicable prospectus supplements related to the particular series of warrants that we may offer under this prospectus and the complete warrant agreements and warrant certificates that contain the terms of the warrants.

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

The offering price and aggregate number of warrants offered;

The number of shares of common stock purchasable upon the exercise of one warrant and the price at which these shares may be purchased upon such exercise;

If applicable, the date on and after which the warrants and the related securities will be separately transferable; The effect of any merger, consolidation, sale or other disposition of our business on the warrant agreements and the warrants;

The terms of our rights to redeem the warrants;

Any provisions for changes to or adjustments in the exercise price or number of securities issuable upon exercise of the warrants;

The dates on which the right to exercise the warrants will commence and expire;

The manner in which the warrant agreements and warrants may be modified;

A discussion of any material U.S. federal income tax consequences of holding or exercising the warrants; and

Any other specific terms, preferences, rights or limitations of or restrictions on the warrants.

Each warrant will entitle the holder to purchase the common stock that we specify in the applicable prospectus supplement at the exercise price that we describe in the applicable prospectus supplement. Holders of the warrants may exercise the warrants at any time up to the specified time on the expiration date that we set forth in the applicable prospectus supplement. After such time on the expiration date, unexercised warrants will become void.

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

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

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warrant certificate for the remaining amount of warrants. If we so indicate in the applicable prospectus supplement, the warrants may be exercised on a cashless or net exercise basis.

Unless we provide otherwise in the applicable prospectus supplement, the warrants and warrant agreements will be governed by and construed in accordance with the laws of the Commonwealth of Pennsylvania and the federal laws of the United States applicable therein.

PLAN OF DISTRIBUTION

We may sell the securities offered by this prospectus in any one or more of the following ways from time to time:

Directly to investors in privately negotiated transactions or through a specific bidding, auction, other process or otherwise;

To investors through agents;

Directly to agents;

To or through brokers or dealers;

To the public through underwriting syndicates led by one or more managing underwriters;

To one or more underwriters acting alone for resale to investors or to the public; or

Through a combination of any such methods of sale.

We may also sell the securities offered by this prospectus in at the market offerings within the meaning of Rule 415(a)(4) of the Securities Act, to or through a market maker or into an existing trading market, on an exchange or otherwise.

The prospectus supplement will set forth the terms of the offering and the method of distribution and will identify any firms acting as underwriters, dealers or agents in connection with the offering, including:

The name or names of any underwriters, dealers or agents;

The purchase price of the securities and the proceeds to us from the sale;

Any over-allotment options under which the underwriters may purchase additional securities from us;

Any underwriting discounts and other items constituting compensation to underwriters, dealers or agents;

Any public offering price;

Any discounts or concessions allowed or reallocated or paid to dealers; or

Any securities exchange or market on which the securities offered in the prospectus supplement may be listed.

Only those underwriters identified in such prospectus supplement are deemed to be underwriters in connection with the securities offered in the prospectus supplement. Any underwritten offering may be on a best efforts or a firm commitment basis.

The distribution of the securities may be effected from time to time in one or more transactions at a fixed price or prices, which may be changed, at varying prices determined at the time of sale, or at prices determined as the applicable prospectus supplement specifies. The securities may be sold through a rights offering, forward contracts or similar arrangements. In any distribution of subscription rights to stockholders, if all of the underlying securities are not subscribed for, we may then sell the unsubscribed securities directly to third parties or may engage the services of one or more underwriters, dealers or agents, including standby underwriters, to sell the unsubscribed securities to third parties.

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In connection with the sale of the securities, underwriters, dealers or agents may be deemed to have received compensation from us in the form of underwriting discounts or commissions and also may receive commissions from securities purchasers for whom they may act as agent. Underwriters may sell the securities to or through dealers, and the dealers may receive compensation in the form of discounts, concessions or commissions from the underwriters or commissions from the purchasers for whom they may act as agent.

We will provide in the applicable prospectus supplement information regarding any underwriting discounts or other compensation that we pay to underwriters or agents in connection with the securities offering, and any discounts, concessions or commissions which underwriters allow to dealers. Underwriters, dealers and agents participating in the securities distribution may be deemed to be underwriters, and any discounts and commissions they receive and any profit they realize on the resale of the securities may be deemed to be underwriting discounts and commissions under the Securities Act. Underwriters and their controlling persons, dealers and agents may be entitled, under agreements entered into with us, to indemnification against and contribution toward specific civil liabilities, including liabilities under the Securities Act.

There is currently no market for any of the offered securities other than the common stock which is listed on the NASDAQ Capital Market. Any common stock sold pursuant to a prospectus supplement will be listed on the NASDAQ Capital Market. It is possible that one or more underwriters may make a market in the securities, but such underwriters will not be obligated to do so and may discontinue any market making at any time without notice. No assurance can be given as to the liquidity of, or the trading market for, any offered securities.

In connection with an offering, the underwriters may purchase and sell securities in the open market. These transactions may include short sales, stabilizing transactions and purchases to cover positions created by short sales. Short sales involve the sale by the underwriters of a greater number of securities than they are required to purchase in an offering. Stabilizing transactions consist of bids or purchases made for the purpose of preventing or retarding a decline in the market price of the securities while an offering is in progress. The underwriters also may impose a penalty bid. This occurs when a particular underwriter repays to the underwriters a portion of the underwriting discount received by it because the underwriters have repurchased securities sold by or for the account of that underwriter in stabilizing or short-covering transactions. These activities by the underwriters may stabilize, maintain or otherwise affect the market price of the securities. As a result, the price of the securities may be higher than the price that otherwise might exist in the open market. If these activities are commenced, they may be discontinued by the underwriters at any time. Underwriters may engage in over-allotment. If any underwriters create a short position in the securities in an offering in which they sell more securities than are set forth on the cover page of the applicable prospectus supplement, the underwriters may reduce that short position by purchasing the securities in the open market.

Underwriters, dealers or agents that participate in the offer of securities, or their affiliates or associates, may have engaged or engage in transactions with and perform services for, us or our affiliates in the ordinary course of business for which they may have received or receive customary fees and reimbursement of expenses.

In compliance with the guidelines of the Financial Industry Regulatory Authority, Inc. (FINRA), the maximum discount or commission to be received by any FINRA member or independent broker-dealer may not exceed 8% of the aggregate offering price of the shares offered hereby. The plan of distribution set forth in the prospectus supplement relating to any specific offering of securities covered by this prospectus shall include appropriate disclosure addressing compliance with FINRA Conduct Rule 2720 and any such offering shall be conducted in compliance with Rule 2720.

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LEGAL MATTERS

Unless otherwise indicated in the applicable prospectus supplement, the legality of the issuance of the shares offered in this prospectus will be passed upon for us by Hedger & Hedger, Hershey, Pennsylvania. Hedger & Hedger may also provide opinions regarding certain other matters. If legal matters in connection with offerings made pursuant to this prospectus are passed upon by counsel to underwriters, dealers or agents, such counsel will be named in the prospectus supplement related to such offering.

EXPERTS

The consolidated financial statements of Derma Sciences, Inc. as of December 31, 2010 and for the year then ended have been incorporated by reference herein and in the registration statement in reliance upon the report of KPMG LLP, independent registered public accounting firm, incorporated by reference herein and upon the authority of said firm as experts in accounting and auditing.

The consolidated financial statements of Derma Sciences, Inc. as of and for the year ended December 31, 2009 appearing in Derma Sciences, Inc.'s annual report on Form 10-K for the year ended December 31, 2010 have been audited by Ernst & Young LLP, independent registered public accounting firm, as set forth in their report thereon included therein and incorporated herein by reference. Such consolidated financial statements are incorporated herein by reference in reliance upon such report given on the authority of such firm as experts in accounting and auditing.

INTEREST OF NAMED EXPERTS AND COUNSEL

Attorneys with Hedger & Hedger own as of the date of this prospectus 2,313 shares of our common stock and exercisable options to purchase 39,375 shares of our common stock.

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Shares

Derma Sciences, Inc.

Common Stock

PROSPECTUS SUPPLEMENT

Piper Jaffray

December , 2012
