

STEMCELLS INC  
Form 424B5  
April 23, 2015  
**Table of Contents**

The information in this preliminary prospectus supplement and the accompanying prospectus is not complete and may be changed. 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.

PROSPECTUS SUPPLEMENT  
(To Prospectus dated January 8, 2014)

Filed pursuant to Rule 424(b)(5)  
Registration No. 333-193100

**Subject to Completion**

**Dated April 23, 2015**

**Shares of Common Stock**

**and Warrants to Purchase**

**Shares of Common Stock**

## **STEMCELLS, INC.**

We are offering up to            shares of our common stock and warrants to purchase up to            shares of our common stock in this offering (and the shares of common stock issuable from time to time upon exercise of these warrants). The common stock and warrants will be separately issued, but the shares and warrants will be issued and sold to purchasers in equal proportion. Each warrant will have an exercise price of \$            per share of common stock, will be exercisable upon issuance and will expire    years from the date of issuance.

Our common stock is listed on the NASDAQ Capital Market under the symbol STEM. On April 22, 2015, the last reported sales price of our common stock on the NASDAQ Capital Market was \$0.82 per share. There is no established public trading market for the warrants and we do not expect a market to develop. In addition, we do not intend to list the warrants on the NASDAQ Capital Market, any other national securities exchange or any other nationally recognized trading system.

**Investing in our securities involves a high degree of risk. Before buying any securities, you should read the discussion of material risks of investing in our common stock under the heading Risk Factors beginning on page S-3 of this prospectus supplement and the risk factors described in other documents incorporated by reference herein.**

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

We have retained Maxim Group LLC to act as the sole book-running manager and the sole representative of the underwriters in connection with this offering. We have agreed to pay the underwriters the fee set forth in the table below, which assumes that we sell all of the shares we are offering.

	<b>Per Share</b>	<b>Per Warrant</b>	<b>Total</b>
Public offering price	\$	\$	\$
Underwriting discounts and commissions(1)	\$	\$	\$
Proceeds, before expenses, to us	\$	\$	\$

(1) In addition to the underwriting discount, we have agreed to pay up to \$150,000 of the fees and expenses of the representative in connection with this offering, which includes the fees and expenses of the underwriter's counsel. See Underwriting for more information.

We have granted the underwriters an option for a period of 30 days after the date of this prospectus supplement to purchase up to an additional shares and/or warrants to purchase up to an additional shares, at the public offering price, less the underwriting discount and commissions, set forth above, solely to cover over-allotments, if any. The over-allotment option may be used to purchase shares of common stock, warrants, or any combination thereof, as determined by the representative of the underwriters. The shares and/or warrants issuable upon exercise of the over-allotment option are identical to those offered by this prospectus. If the underwriters exercise this option in full, the total underwriting discounts and commissions payable by us will be \$ , and the total proceeds to us, before expenses, will be \$ . We estimate the total expenses of this offering, excluding underwriting commissions and discounts, to be approximately \$250,000.

The underwriters are offering the shares and warrants as set forth under the heading Underwriting beginning on page S-10. The underwriters expect to deliver the shares and warrants against payment on or about April , 2015.

*Sole Book-Running Manager*

**Maxim Group LLC**

The date of this prospectus supplement is April , 2015.

**Table of Contents**

**TABLE OF CONTENTS**

**Prospectus supplement**

<u>Prospectus summary</u>	S-1
<u>Risk factors</u>	S-3
<u>The Offering</u>	S-4
<u>Note regarding forward-looking statements</u>	S-5
<u>Use of proceeds</u>	S-6
<u>Dilution</u>	S-7
<u>Description of securities</u>	S-8
<u>Underwriting</u>	S-10
<u>Where you can find more information</u>	S-12
<u>Incorporation of certain documents by reference</u>	S-12
<u>Legal matters</u>	S-13
<u>Experts</u>	S-13
<b>Prospectus</b>	

<u>Prospectus summary</u>	1
<u>Risk factors</u>	3
<u>Note regarding forward-looking statements</u>	3
<u>Use of proceeds</u>	4
<u>Ratio of earnings to fixed charges</u>	4
<u>Plan of distribution</u>	5
<u>Description of Common Stock</u>	7
<u>Description of Preferred Stock</u>	7
<u>Description of Warrants</u>	8
<u>Description of Debt Securities</u>	9
<u>Legal matters</u>	16
<u>Experts</u>	16
<u>Where you can find more information</u>	16
<u>Incorporation of certain documents by reference</u>	17

**Table of Contents**

**ABOUT THIS PROSPECTUS SUPPLEMENT**

This document consists of two parts. The first part is this prospectus supplement, which describes the specific terms of this offering. The second part, the accompanying prospectus, gives more general information, some of which may not apply to this offering. Generally, when we refer only to the prospectus, we are referring to both parts combined. This prospectus supplement may add to, update or change information in the accompanying prospectus and the documents incorporated by reference into this prospectus supplement or the accompanying prospectus.

If information in this prospectus supplement is inconsistent with the accompanying prospectus, you should rely on this prospectus supplement. This prospectus supplement, the accompanying prospectus, any related free writing prospectus and the documents incorporated into each by reference include important information about us, the shares and warrants being offered and other information you should know before investing in our securities.

You should rely only on this prospectus supplement, the accompanying prospectus, any free writing prospectus and the information incorporated or deemed to be incorporated by reference in this prospectus supplement and the accompanying prospectus. We have not, and the underwriters have not, authorized anyone to provide you with information that is in addition to, or different from, that contained or incorporated by reference in this prospectus supplement, the accompanying prospectus or any free writing prospectus. If anyone provides you with different or inconsistent information, you should not rely on it. We are not, and the underwriters are not, offering to sell these securities in any jurisdiction where the offer or sale is not permitted. You should not assume that the information contained or incorporated by reference in this prospectus supplement, the accompanying prospectus or any free writing prospectus is accurate as of any date other than the respective dates that are specified in those documents. Our business, financial condition, liquidity, results of operations, and prospects may have changed since those dates.

All references in this prospectus to StemCells, the Company, we, us, or our mean StemCells, Inc., including our directly and indirectly wholly-owned subsidiaries, unless we state otherwise or the context otherwise requires.

**Table of Contents**

**PROSPECTUS SUMMARY**

*The following is a summary of selected information contained elsewhere or incorporated by reference in this prospectus. It does not contain all of the information that you should consider before buying our securities. You should read this entire prospectus carefully, especially the section entitled Risk Factors and the consolidated financial statements and the notes to the consolidated financial statements incorporated by reference.*

**The Company**

**Business Overview**

We are engaged in researching, developing, and commercializing cell-based therapeutics. Our research and development (R&D) programs are primarily focused on identifying and developing potential cell-based therapeutics which can either restore or support organ function. In particular, since we relocated our operations to California in 1999, our R&D efforts have been directed at refining our methods for identifying, isolating, culturing, and purifying the human neural stem cell and developing this cell as potential cell-based therapeutics for the central nervous system. Our HuCNS-SC<sup>®</sup> cells (purified human neural stem cells) are currently in clinical development for two indications chronic spinal cord injury and dry age-related macular degeneration (AMD).

We completed our Phase I/II clinical trial for the treatment of chronic spinal cord injury, which represents the first time that neural stem cells have been transplanted as a potential therapeutic agent for spinal cord injury. To accelerate patient enrollment, we expanded this trial from a single-site, single-country study to a multi-site, multi-country program. Under this trial, a total of twelve patients were enrolled and transplanted with our HuCNS-SC cells and we have reported interim results on all 12 subjects. Post-transplant gains in sensory function below the level of injury were demonstrated in half of the subjects in this study. Two subjects converted from a complete injury (AIS A) to an incomplete injury (AIS B). The interim results also continue to confirm the favorable safety profile of the cells and the surgical procedure. In October 2014, we initiated a Phase II proof of concept clinical trial to further investigate our HuCNS-SC cells as a treatment for spinal cord injury. Our Phase II study is the first clinical trial designed to evaluate both the safety and efficacy of transplanting human neural stem cells into patients with cervical spinal cord injury. Traumatic injuries to the cervical (neck) region of the spinal cord, also known as tetraplegia or quadriplegia, impair sensation and motor function of the hands, arms, legs, and trunk. The Phase II trial will be conducted as a randomized, controlled, single-blind study and efficacy will be primarily measured by assessing motor function according to the International Standards for Neurological Classification of Spinal Cord Injury. The primary efficacy outcome will focus on change in upper extremity strength as measured in the hands, arms, and shoulders. The trial will follow the participants for one year and will enroll up to 52 subjects. We transplanted our first subject in this Phase II trial in December 2014 and completed transplanting the six patients comprising the first cohort of this trial in April 2015.

We have also conducted a Phase I/II clinical trial of HuCNS-SC cells in dry AMD at five trial sites in the United States, and in June 2014, based on positive interim results, we closed enrollment for this trial in order to focus our efforts on initiating a follow-on Phase II randomized, controlled proof-of-concept study in 2015. Interim results for the AMD Phase I/II trial based on twelve months of data showed for all four subjects of cohort one a 70 percent reduction in the rate of geographic atrophy (GA) as compared to the control eye and a 65 percent reduction in the rate of GA as compared to the expected natural history of the disease following a single dose of our proprietary HuCNS-SC cells. In addition, interim results also indicate either stable or improved visual acuity and contrast sensitivity (the ability to distinguish shades of light versus dark) at 6 and 12 months post-transplant.

We previously completed a Phase I clinical trial in infantile and late infantile neuronal ceroid lipofuscinosis (NCL), which showed that our HuCNS-SC cells were well tolerated and non-tumorigenic, and that there was evidence of

engraftment and long-term survival of the transplanted HuCNS-SC cells. In October 2013, the results of a four-year, long-term follow up study of the patients from the initial Phase I study showed there were no long-term safety or tolerability issues associated with the cells up to five years post-transplantation.

In October 2012, we published in *Science Translational Medicine*, a peer-reviewed journal, the data from our four-patient Phase I clinical trial in Pelizeaus Merzbacher disease, which showed preliminary evidence of durable and progressive donor-derived myelination in all four patients. In addition, there were measurable gains in neurological function in three of the four patients, with the fourth patient clinically stable.

S-1

## **Table of Contents**

We have not derived any revenue or cash flows from the sale or commercialization of any products except for license revenue for certain of our patented technologies and sales of products for use in stem cell research. As a result, we have incurred annual operating losses since inception and expect to incur substantial operating losses in the future. Therefore, we are dependent upon external financing, such as from equity and debt offerings, to finance our operations. Before we can derive revenue or cash inflows from the commercialization of any of our therapeutic product candidates, we will need to: (i) conduct substantial *in vitro* testing and characterization of our proprietary cell types, (ii) undertake preclinical and clinical testing for specific disease indications; (iii) develop, validate and scale-up manufacturing processes to produce these cell-based therapeutics, and (iv) obtain required regulatory approvals. These steps are risky, expensive and time consuming.

## **Our Corporate Information**

We are incorporated in Delaware. Our principal executive offices are located at 7707 Gateway Blvd., Suite 140, Newark, California 94560 and our telephone number is (510) 456-4000. Our website is located at [www.stemcellsinc.com](http://www.stemcellsinc.com). We have not incorporated by reference into this prospectus supplement or the accompanying prospectus the information in, or that can be accessed through, our website, and you should not consider it to be a part of this prospectus supplement or the accompanying prospectus.

**Table of Contents**

**RISK FACTORS**

*You should consider the Risk Factors included and incorporated by reference in the prospectus, this prospectus supplement and any other applicable prospectus supplement, including the risk factors incorporated by reference from our most recent Annual Report on Form 10-K for the fiscal year ended December 31, 2014, filed with the Securities Exchange Commission (SEC) on March 13, 2015 and our other filings with the SEC pursuant to Sections 13(a), 13(c), 14 or 15(d) of the Securities Exchange Act of 1934, as amended (the Exchange Act), filed after such annual report. The risks and uncertainties we describe are not the only ones facing us. Additional risks not presently known to us, or that we currently deem immaterial, may also impair our business operations. If any of these risks were to occur, our business, financial condition, or results of operations would likely suffer. In that event, the trading price of our common stock could decline, and you could lose all or part of your investment.*

**Risks Related to This Offering**

***Management will have broad discretion with respect to the use of the proceeds from this offering.***

Although we have highlighted the intended use of proceeds for this offering, our management will have broad discretion as to the application of the net proceeds from this offering and could use them for purposes other than those contemplated at the time of the offering. Our stockholders may not agree with the manner in which our management chooses to allocate and spend the net proceeds. It is possible that our management may use the net proceeds for corporate purposes that may not improve our financial condition or market value.

***You will experience immediate and substantial dilution.***

The offering price per share in this offering will exceed the net tangible book value per share of our common stock outstanding prior to this offering. After giving effect to the sale by us of up to \$ of securities offered in this offering, and after deducting commissions and estimated offering expenses payable by us, you will experience immediate dilution of \$ per share, representing the difference between our as adjusted net tangible book value per share as of December 31, 2014 after giving effect to this offering and the assumed offering price, and assuming no exercise of the warrants. The exercise of outstanding stock options and warrants will result in further dilution of your investment. See the section entitled Dilution below for a more detailed illustration of the dilution you would incur if you participate in this offering.

***You may experience future dilution as a result of future equity offerings.***

In order to raise additional capital, we may in the future offer additional shares of our common stock or other securities convertible into or exchangeable for our common stock at prices that may not be the same as the price per share in this offering. We may sell shares or other securities in any future offering at a price per share that is lower than the price per share paid by investors in this offering, which would result in those newly issued shares being dilutive. In addition, investors purchasing shares or other securities in the future could have rights superior to existing stockholders, which could impair the value of your shares. The price per share at which we sell additional shares of our common stock, or securities convertible or exchangeable into common stock, in future transactions may be higher or lower than the price per share paid by investors in this offering.

***Price adjustment provisions in certain of our outstanding warrants may make it more difficult and expensive for us to raise additional capital in the future and may result in further dilution to investors in this offering.***



As of December 31, 2014, we had outstanding Series A warrants to purchase a total of 6,936,880 shares of common stock at an exercise price of \$1.40 per share (the "Series A Warrants"). The Series A Warrants contain full ratchet anti-dilution provisions that would result in an adjustment to the exercise price of the Series A Warrants if we issue or are deemed to issue additional shares of our common stock at an effective per share price below \$1.40, subject to certain exceptions. Because these price adjustment provisions would have the effect of lowering the price at which shares of our common stock are issued upon exercise of the Series A Warrants, if we are unable to raise additional capital at an effective price per share that is higher than \$1.40, these provisions may make it more difficult and more expensive to raise capital in the future. In addition, a reduction in the exercise price of our warrants may result in additional dilution if the Series A Warrants are exercised following a reduction of the exercise price.

S-3

Common stock we are offering \_\_\_\_\_ shares (excluding shares issuable upon exercise of the warrants offered hereby)

Warrants we are offering                      Warrants to purchase                      shares of common stock. Each warrant will have an exercise price of \$                      per share, will be immediately exercisable upon issuance and will expire                      years from the issuance date. This prospectus supplement also relates to the offering of the shares of common stock issuable upon exercise of the warrants.

Common stock to be outstanding after this offering \_\_\_\_\_ shares (or \_\_\_\_\_ shares if the underwriters exercise their option to purchase additional shares in full)

**Underwriters' option**

We have granted the underwriters an option for a period of 30 days from the date of this prospectus supplement to purchase up to \_\_\_\_\_ additional shares and/or warrants to purchase up to \_\_\_\_\_ additional shares to cover over-allotments.

Use of proceeds	We intend to use the net proceeds of this offering for general corporate purposes, including working capital, capital expenditures and research and development, as well as acquisitions and other strategic purposes. See <a href="#">Use of Proceeds</a> .
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NASDAQ Capital Market symbol                      STEM

The number of shares of common stock shown above to be outstanding after this offering is based on the 68,729,774 shares outstanding as of December 31, 2014 and excludes:

302,729 shares of our common stock subject to options outstanding as of December 31, 2014 having a weighted average exercise price of \$18.18 per share;

3,374,940 shares of our common stock subject to outstanding restricted stock units as of December 31, 2014;

9,683,022 shares of our common stock that have been reserved for issuance in connection with future grants under our stock option plans as of December 31, 2014;

23,478,181 shares of our common stock that have been reserved for issuance upon exercise of outstanding warrants as of December 31, 2014 having a weighted average exercise price of \$2.06 per share (not including any adjustment to the exercise price as a result of the shares to be sold in this offering; and

shares of common stock issuable upon the exercise of warrants offered hereby.

Unless otherwise stated, all information in this prospectus supplement assumes no exercise by the underwriters of their option to purchase additional shares and/or warrants to cover over-allotments.

S-4

**Table of Contents**

**NOTE REGARDING FORWARD-LOOKING STATEMENTS**

This prospectus supplement, the accompanying prospectus and the documents incorporated in this prospectus supplement contain forward looking statements that involve substantial risks and uncertainties. Such statements include, without limitation, all statements as to expectation or belief and statements as to our future results of operations; the progress of our research, product development and clinical programs; the need for, and timing of, additional capital and capital expenditures; partnering prospects; costs of manufacture of products; the protection of, and the need for, additional intellectual property rights; effects of regulations; the need for additional facilities; and potential market opportunities. Our actual results may vary materially from those contained in such forward-looking statements because of risks to which we are subject, including the fact that additional trials will be required to confirm the safety and demonstrate the efficacy of our HuCNS-SC cells for the treatment of any disease or disorder; uncertainty as to whether the U.S. Food and Drug Administration or other regulatory authorities will permit us to proceed with clinical testing of proposed products despite the novel and unproven nature of our technologies; the risk that our clinical trials or studies could be substantially delayed beyond their expected dates or cause us to incur substantial unanticipated costs; uncertainties in our ability to obtain the capital resources needed to continue our current research and development operations and to conduct the research, preclinical development and clinical trials necessary for regulatory approvals; the uncertainty regarding our ability to obtain a corporate partner or partners, if needed, to support the development and commercialization of our potential cell-based therapeutics products; the uncertainty regarding the outcome of our clinical trials or studies we may conduct in the future; the uncertainty regarding the validity and enforceability of our issued patents; the risk that we may not be able to manufacture additional master and working cell banks when needed; the uncertainty as to whether our preclinical studies will be replicated in humans; the uncertainty whether any products that may be generated in our cell-based therapeutics programs will prove clinically safe and effective; the uncertainty whether we will achieve significant revenue from product sales or become profitable; obsolescence of our technologies; competition from third parties; intellectual property rights of third parties; litigation risks; and other risks to which we are subject. All forward-looking statements attributable to us or to persons acting on our behalf are expressly qualified in their entirety by the cautionary statements and risk factors set forth in **Risk Factors** in our most recent Annual Report on Form 10-K, as updated by our other filings with the SEC pursuant to Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act filed after such annual report or in additional prospectus supplements related to this offering.

**Table of Contents**

**USE OF PROCEEDS**

We estimate that the net proceeds from the sale of the securities offered in this offering will be approximately \$ after deducting underwriting discounts and commissions and estimated offering expenses payable by us, and excluding the proceeds, if any, from the exercise of the warrants issued pursuant to this offering. If the underwriters exercise their over-allotment option in full, we estimate that the net proceeds from this offering will be approximately \$ million, excluding the proceeds, if any, from the exercise of any warrants issued in the over-allotments option.

We intend to use the net proceeds of this offering for general corporate purposes, including working capital, capital expenditures, research and development expenditures and clinical trial expenditures. A portion of the net proceeds may also be used for the acquisition of businesses, products and technologies that are complementary to ours, or for other strategic purposes. Pending use of the net proceeds, we intend to invest the net proceeds in short-term, interest-bearing, investment-grade securities.

S-6

**Table of Contents****DILUTION**

If you invest in our common stock, you will experience dilution to the extent of the difference between the price per share you pay in this offering and the net tangible book value per share of our common stock immediately after this offering.

Our net tangible book value as of December 31, 2014 was approximately \$5,490,577, or \$0.08 per share of common stock. Net tangible book value per share is equal to our total tangible assets minus total liabilities, all divided by the number of shares of common stock outstanding as of December 31, 2014. After giving effect to the sale in this offering of \_\_\_\_\_ shares, less the underwriting discounts and commissions and estimated offering expenses we expect to pay, our pro forma net tangible book value as of December 31, 2014 would have been approximately \$ \_\_\_\_\_ million, or approximately \$ \_\_\_\_\_ per share. This represents an immediate increase in net tangible book value of approximately \$ \_\_\_\_\_ per share to existing stockholders and an immediate dilution of approximately \$ \_\_\_\_\_ per share to new investors. The following table illustrates this calculation on a per share basis:

Public offering price per share	\$
Net tangible book value per share as of December 31, 2014	\$ 0.08
Increase per share attributable to the offering	\$
As adjusted net tangible book value per share after this offering	\$
Dilution per share to new investors	\$

The number of shares of common stock shown above to be outstanding after this offering is based on the 68,729,774 shares outstanding as of December 31, 2014 and excludes:

302,729 shares of our common stock subject to options outstanding as of December 31, 2014 having a weighted average exercise price of \$18.18 per share;

3,374,940 shares of our common stock subject to outstanding restricted stock units as of December 31, 2014;

9,683,022 shares of our common stock that have been reserved for issuance in connection with future grants under our stock option plans as of December 31, 2014;

23,478,181 shares of our common stock that have been reserved for issuance upon exercise of outstanding warrants as of December 31, 2014 having a weighted average exercise price of \$2.06 per share; and

\_\_\_\_\_ shares of common stock issuable upon the exercise of warrants offered hereby.

To the extent that any options or warrants are exercised, new options are issued under our equity incentive plans or we otherwise issue additional shares of common stock in the future at a price less than the combined public offering price,

there will be further dilution to new investors.

If the underwriters exercise in full their option to purchase \_\_\_\_\_ additional shares at the public offering price of \$ \_\_\_\_\_ per share and warrants to purchase \_\_\_\_\_ additional shares at the public offering price of \$ \_\_\_\_\_ per warrant, the pro forma as adjusted net tangible book value after this offering would be approximately \$ \_\_\_\_\_ per share, representing an increase in net tangible book value of approximately \$ \_\_\_\_\_ per share to existing stockholders and immediate dilution in net tangible book value of approximately \$ \_\_\_\_\_ per share to investors purchasing our common stock in this offering at the public offering price.

S-7

**Table of Contents**

**DESCRIPTION OF SECURITIES**

We are offering a maximum of            shares of our common stock and            warrants in this offering. This prospectus supplement also relates to the offering of shares of our common stock issuable upon exercise, if any, of the warrants.

***Common Stock***

The following summary of the terms of our common stock is subject to and qualified in its entirety by reference to our charter and by-laws, copies of which are on file with the SEC as exhibits to previous SEC filings. Please refer to *Where You Can Find More Information* below for directions on obtaining these documents.

We have authority to issue 225,000,000 shares of common stock. As of February 24, 2015 we had 69,288,450 shares of common stock outstanding.

**General**

Holders of common stock are entitled to one vote per share on matters on which our stockholders vote. There are no cumulative voting rights. Holders of common stock are entitled to receive dividends, if declared by our board of directors, out of funds that we may legally use to pay dividends. If we liquidate or dissolve, holders of common stock are entitled to share ratably in our assets once our debts and any liquidation preference owed to any then-outstanding preferred stockholders are paid. Our certificate of incorporation does not provide the common stock with any redemption, conversion or preemptive rights. All shares of common stock that are outstanding as of the date of this prospectus and, upon issuance and sale, all shares we are offering by this prospectus, will be fully-paid and nonassessable.

**Transfer Agent and Registrar**

The transfer agent and registrar for our common stock is Computershare Trust Company, N.A.

**NASDAQ Capital Market**

Our common stock is listed for quotation on the NASDAQ Capital Market under the symbol *STEM*.

***Warrants***

The following is a brief summary of the material terms of the warrants and is subject in all respects to the provisions contained in the warrants. The form of warrants will be filed with a Current Report on Form 8-K and reference is made thereto for a complete description of the warrants.

*Exercise Price.* The exercise price per share of common stock purchasable upon exercise of the warrants is \$    per share. If we, at any time while the warrants are outstanding, pay a stock dividend on our common stock or otherwise make a distribution on any class of capital stock that is payable in shares of our common stock, subdivide outstanding shares of our common stock into a larger number of shares or combine the outstanding shares of our common stock into a smaller number of shares, then, the number, class and type of shares available under the warrants and the exercise price will be correspondingly adjusted to give the holder of the warrants, on exercise for the same aggregate exercise price, the total number, class, and type of shares or other property as the holder would have owned had the warrants been exercised prior to the event and had the holder continued to hold such shares until the event requiring



adjustment.

*Exercisability.* Holders may exercise the warrants beginning on the date of original issuance and at any time up to the date that is [ ] years after such date the warrants become exercisable.

*Cashless Exercise.* If, at any time during the warrant exercisability period, the fair market value of our common stock exceeds the exercise price of the warrants and the issuance of shares of our common stock upon

S-8

**Table of Contents**

exercise of the warrants is not covered by an effective registration statement, we or the holder are permitted to effect a cashless exercise of the warrants (in whole or in part) by having the holder surrendering the warrants to us, together with delivery to us of a duly executed exercise notice, cancel a portion of the warrant in payment of the purchase price payable in respect of the number of shares of our common stock purchased upon such exercise.

*Transferability.* The warrants may be transferred at the option of the warrant holder upon surrender of the warrants with the appropriate instruments of transfer.

*Exchange Listing.* We do not plan on making an application to list the warrants on the NASDAQ Capital Market, any national securities exchange or other nationally recognized trading system.

*Rights as a Stockholder.* Except as otherwise provided in the warrants or by virtue of such holder's ownership of shares of our common stock, the holders of the warrants do not have the rights or privileges of holders of our common stock, including any voting rights, until they exercise their warrants.

*Fundamental Transactions.* In the event of any fundamental transaction, as described in the warrants and generally including any merger with another entity, the sale, transfer or other disposition of all or substantially all of our assets to another entity, or the acquisition by a person of more than 50% of our common stock, the holders of the warrants will thereafter have the right to receive upon exercise of the warrants such shares of stock, securities or assets as would have been issuable or payable with respect to or in exchange for a number of shares of our common stock equal to the number of shares of our common stock issuable upon exercise of the warrants immediately prior to the fundamental transaction, had the fundamental transaction not taken place, and appropriate provision will be made so that the provisions of the warrants (including, for example, provisions relating to the adjustment of the exercise price) will thereafter be applicable, as nearly equivalent as may be practicable in relation to any share of stock, securities or assets deliverable upon the exercise of the warrants after the fundamental transaction.

*Limits on Exercise of Warrants.* Except upon at least 61 days' prior notice from the holder to us, the holder will not have the right to exercise any portion of the warrant if the holder, together with its affiliates, would beneficially own in excess of 4.99% of the number of shares of our common stock (including securities convertible into common stock) outstanding immediately after the exercise.

**Table of Contents****UNDERWRITING**

We have entered into an underwriting agreement with Maxim Group LLC ( "Maxim" ), acting as sole book-running manager and sole representative of the underwriters, with respect to the shares and warrants being offered. The underwriting agreement provides for the purchase of a specific number of shares and warrants by each of the underwriters. The obligations of the underwriter are subject to certain customary conditions. Subject to such conditions, the underwriters are committed to purchase all of the shares and warrants offered hereby, other than the shares and warrant covered by the over-allotment option described below.

<b>Underwriter</b>	<b>Number of Shares</b>	<b>Number of Warrants</b>
Maxim Group LLC		
Total:		

The fixed combination of shares and warrants sold by the underwriters to the public will be offered at the public offering price set forth on the cover of this prospectus and to certain dealers at that price less a concession not in excess of \$        per fixed combination. The underwriters may allow, and certain dealers may re-allow, a discount from the concession not in excess of \$        per fixed combination to certain brokers and dealers.

We estimate that the total fees and expenses payable by us, excluding underwriting discounts and commissions, will be approximately \$250,000. This estimate includes up to \$150,000 of out-of-pocket fees and expenses of the representative in connection with this offering. The following table shows the underwriting fees to be paid to the underwriters by us in connection with this offering assuming both no exercise and full exercise of the underwriters option to purchase additional shares:

	<b>Per Share and Warrant</b>	<b>Total Without Exercise of Over-Allotment Option</b>	<b>Total With Full Exercise of Over-Allotment Option</b>
Public Offering Price	\$	\$	\$
Underwriting discount (    %)	\$	\$	\$
Proceeds, before expenses, to us	\$	\$	\$

We have agreed to indemnify the underwriters against certain liabilities, including civil liabilities under the Securities Act, or to contribute to payments that the underwriters may be required to make in respect of those liabilities.

We have granted to the underwriters an over-allotment option, exercisable for 30 days from the date of the underwriting agreement to purchase up to (i)        shares of common stock at a price of \$        per share, which price reflects underwriting discount, and/or (ii)        additional warrants at a price of \$        per warrant, which price reflects the underwriting discount. The over-allotment option may be used to purchase shares of common stock and/or warrants in any combination thereof, as determined by the representative. The representative may exercise this option, in whole or in part, solely for the purpose of covering over-allotments, if any, made in connection with the offering of the securities pursuant to this prospectus.

We and our subsidiaries have agreed to certain restrictions on the ability to sell additional shares of our common stock for a period ending on the earlier of 90 days after the date that the underwriting agreement is signed or the date on

which our common stock trades at or above \$ \_\_\_\_\_ for three consecutive days, but in an event earlier than 30 days after the date of the underwriting agreement. Subject to certain exceptions, we and our subsidiaries have agreed not to directly or indirectly offer for sale, sell, contract to sell, grant any option for the sale of, or otherwise issue or dispose of, any shares of common stock, or any securities of the Company or our subsidiaries which would entitle the holder thereof to acquire at any time common stock, including, without limitation, any debt, preferred stock, right, option, warrant or other instrument that is at any time convertible into or exercisable or exchangeable for, or otherwise entitles the holder thereof to receive, common stock, without Maxim's prior written consent.

Our officers and our directors have agreed, subject to limited exceptions, for a period of 30 days after the date of the underwriting agreement, not to offer, sell, contract to sell, pledge, grant any option to purchase, make any short sale or otherwise dispose of, directly or indirectly any shares of common stock or any securities convertible

S-10

**Table of Contents**

into or exchangeable for our common stock either owned as of the date of the underwriting agreement or thereafter acquired at a per share price less than the public offering price of the shares without Maxim's prior written consent. Maxim may, in its sole discretion and at any time or from time to time before the termination of the lock-up period, without notice, release all or any portion of the securities subject to the lock-up.

To facilitate the offering, the underwriters may engage in transactions that stabilize, maintain or otherwise affect the price of our common stock during and after the offering. Specifically, the underwriters may over-allot or otherwise create a short position in the common stock for their own account by selling more common stock than has been sold to them by us. Short sales involve the sale by the underwriters of a greater number of shares of common stock than they are required to purchase in this offering. Naked short sales are sales in excess of the number sold to them by us. The underwriters must close out any naked short position by purchasing common stock in the open market. A naked short position is more likely to be created if the underwriters are concerned that there may be downward pressure on the price of the common stock in the open market after pricing that could adversely affect investors who purchase in this offering.

In addition, the underwriters may stabilize or maintain the price of the common stock by bidding for or purchasing 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 common stock previously distributed in the offering is 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.

From time to time in the ordinary course of their respective business, the underwriters and their affiliates may in the future engage in commercial banking or investment banking transactions with us and our affiliates. We have no present arrangements with the underwriters for any such transactions.

**Table of Contents**

**WHERE YOU CAN FIND MORE INFORMATION**

We file annual, quarterly, and special reports, proxy statements, and other information with the SEC. These documents are on file with the SEC under file number 000-19871. You may read and copy any document we file at the SEC's public reference room at 100 F Street, N.E., Washington, D.C., 20549. You can request copies of these documents by contacting the SEC and paying a fee for the copying cost. Please call the SEC at 1-800-SEC-0330 for further information on the public reference room. Our SEC filings are also available to the public from the SEC's website at [www.sec.gov](http://www.sec.gov).

**INCORPORATION OF CERTAIN DOCUMENTS BY REFERENCE**

This prospectus supplement and the accompanying prospectus are part of a registration statement on Form S-3 filed by us with the SEC. This prospectus supplement and the accompanying prospectus do not contain all of the information set forth in the registration statement, certain parts of which are omitted in accordance with the rules and regulations of the SEC. Statements contained in this prospectus supplement, the accompanying prospectus or the documents incorporated by reference into this prospectus supplement or the accompanying prospectus as to the contents of any contract or other document referred to are not necessarily complete and in each instance reference is made to the copy of that contract or other document filed with the SEC. For further information about us and the securities offered by this prospectus supplement, we refer you to the registration statement and its exhibits and schedules which may be obtained as described herein.

The SEC allows us to incorporate by reference the information contained in documents that we file with them, which means that we can disclose important information to you by referring you to those documents. The information incorporated by reference is considered to be part of this prospectus supplement and the accompanying prospectus, and information in documents that we file later with the SEC will automatically update and supersede information in this prospectus supplement and the accompanying prospectus. We incorporate by reference the documents listed below into this prospectus supplement, and any future filings made by us with the SEC under Section 13(a), 13(c), 14 or 15(d) of the Exchange Act until the offering of all the securities by this prospectus supplement is completed; except that, unless we indicate otherwise, we do not incorporate any information furnished under Item 2.02 or Item 7.01 of any Current Report on Form 8-K. We hereby incorporate by reference the documents listed below:

our Annual Report on Form 10-K for the fiscal year ended December 31, 2014, as amended;

our Current Reports on Form 8-K filed on March 25, 2015 and April 17, 2015; and

the description of our common stock contained in our registration statement on Form 8-A filed August 3, 1998, under the Exchange Act, including any amendment or report filed for the purpose of updating such description.

We will provide each person to whom this prospectus supplement is delivered a copy of all of the information that has been incorporated by reference in this prospectus supplement or the accompanying prospectus but not delivered with this prospectus supplement and the accompanying prospectus. You may obtain copies of these filings, at no cost, through the Investor Relations section of our website ([www.stemcellsinc.com](http://www.stemcellsinc.com)), and you may request copies of these filings, at no cost, by writing or telephoning us at:

StemCells, Inc.

7707 Gateway Blvd., Suite 140

Newark, CA 94560

Attention: Investor Relations

Phone: (510) 456-4000

E-mail: [irpr@stemcellsinc.com](mailto:irpr@stemcellsinc.com)

You should rely only on the information incorporated by reference or provided in this prospectus supplement, the accompanying prospectus or any free writing prospectus required to be filed with the SEC. We have not, and the underwriters have not, authorized anyone to provide you with different information. We are not, and the

S-12

**Table of Contents**

underwriters are not, making an offer of these securities in any jurisdiction where the offer is not permitted. You should not assume that the information contained or incorporated by reference in this prospectus supplement, the accompanying prospectus and any free writing prospectus is accurate as of any date other than the respective dates that are specified in those documents. Our business, financial condition, results of operations and prospects may have changed since those dates.

**LEGAL MATTERS**

Various legal matters with respect to the validity of the shares of common stock and warrants offered by this prospectus supplement will be passed upon for us by Ropes & Gray LLP, Boston, Massachusetts. Certain legal matters related to the offering will be passed upon for the underwriters by Ellenoff Grossman & Schole LLP, New York, New York.

**EXPERTS**

The consolidated balance sheets of StemCells, Inc. as of December 31, 2014 and 2013 and the related consolidated statements of operations and comprehensive loss, stockholders' equity and cash flows for each of the three years in the period ended December 31, 2014, incorporated by reference in this prospectus, and the effectiveness of internal control over financial reporting, have been audited by Grant Thornton LLP, independent registered public accountants, as stated in their reports incorporated by reference herein. Such consolidated financial statements have been so incorporated in reliance upon the reports of such firm given upon their authority as experts in accounting and auditing.



**Table of Contents**

**PROSPECTUS**

**\$100,000,000**

**STEMCELLS, INC.**

**Common Stock**

**Preferred Stock**

**Warrants**

**Debt Securities**

We may offer to the public, from time to time, in one or more series or issuances:

shares of our common stock;

shares of our preferred stock;

warrants to purchase shares of our common stock, preferred stock and/or debt securities; or

debt securities consisting of debentures, notes or other evidences of indebtedness.

This prospectus provides a general description of the securities we may offer. Each time we sell securities, we will provide specific terms of the securities offered in a supplement to this prospectus. The prospectus supplement may also add, update or change information contained in this prospectus. This prospectus may not be used to consummate a sale of securities unless accompanied by the applicable prospectus supplement. You should read both this prospectus and any prospectus supplement together with additional information described under the heading **Where You Can Find More Information** before you make your investment decision.

We will sell these securities directly to our stockholders or to purchasers or through agents on our behalf or through underwriters or dealers as designated from time to time. If any agents or underwriters are involved in the sale of any of these securities, the applicable prospectus supplement will provide the names of the agents or underwriters and any applicable fees, commissions or discounts.

Our common stock is traded on the Nasdaq Capital Market under the symbol **STEM**. On December 24, 2013, the closing price of our common stock was \$1.31.

**Investing in our securities involves certain risks. Please carefully consider Risk Factors on page 3 and other information included and incorporated by reference in this prospectus, and in any applicable prospectus supplement, for a discussion of the factors you should consider carefully before deciding to purchase our securities.**

**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. Any representation to the contrary is a criminal offense.**

**The date of this prospectus is January 8, 2014**

**Table of Contents****TABLE OF CONTENTS**

	<b>Page</b>
<u>Prospectus Summary</u>	1
<u>Risk Factors</u>	3
<u>Note Regarding Forward-Looking Statements</u>	3
<u>Use of Proceeds</u>	4
<u>Ratio of Earnings to Fixed Charges</u>	4
<u>Plan of Distribution</u>	5
<u>Description of Common Stock</u>	7
<u>Description of Preferred Stock</u>	7
<u>Description of Warrants</u>	8
<u>Description of Debt Securities</u>	9
<u>Legal Matters</u>	16
<u>Experts</u>	16
<u>Where You Can Find More Information</u>	16
<u>Incorporation of Certain Documents by Reference</u>	17

This prospectus is part of a registration statement that we filed with the Securities and Exchange Commission (the SEC) utilizing a shelf registration process. Under this shelf process, we may sell different types of securities described in this prospectus in one or more offerings. This prospectus provides you with a general description of the securities we may offer. Each time we offer securities, we will provide a prospectus supplement and attach it to this prospectus. The prospectus supplement will contain specific information about the nature of the persons offering securities and the terms of the securities being offered at that time. The prospectus supplement may also add, update or change information contained in this prospectus. You should read both this prospectus and any prospectus supplement, including all documents incorporated herein by reference, together with additional information described under the headings **Where You Can Find More Information** and **Incorporation of Certain Documents By Reference**.

This prospectus does not contain all of the information that is in the registration statement. We omitted certain parts of the registration statement from this prospectus as permitted by the SEC. We refer you to the registration statement and its exhibits for additional information about us and the securities that may be sold under this prospectus.

All references in this prospectus to StemCells, the Company, we, us, or our mean StemCells, Inc. and its subsidiaries unless we state otherwise or the context otherwise requires.

You should rely only on the information contained or incorporated by reference in this prospectus. We have not authorized anyone to provide you with different information. If anyone provides you with different or inconsistent information, you should not rely on it. We are not making an offer to sell these securities in any jurisdiction where the offer is not permitted. The information contained in this prospectus is accurate only as of the date of this prospectus, regardless of the time of delivery of this prospectus or the time of any sale of our securities. Our business, financial

condition, results of operations, and prospects may have changed since such date.

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**Table of Contents****PROSPECTUS SUMMARY**

*The following is a summary of selected information contained elsewhere or incorporated by reference in this prospectus. It does not contain all of the information that you should consider before buying our securities. You should read this entire prospectus carefully, especially the section entitled Risk Factors and the consolidated financial statements and the notes to the consolidated financial statements incorporated by reference.*

**The Company**

We are engaged in researching, developing, and commercializing cell-based therapeutics and enabling tools and technologies for stem cell-based research and drug discovery and development. Our research and development (R&D) programs are primarily focused on identifying and developing potential cell-based therapeutics which can either restore or support organ function. In particular, since we relocated our corporate headquarters to California in 1999, our R&D efforts have been directed at refining our methods for identifying, isolating, culturing, and purifying the human neural stem cell and developing this cell as potential cell-based therapeutics for the central nervous system (CNS). Our HuCNS-SC® cells (purified human neural stem cells) are currently in clinical development for several indications – chronic spinal cord injury, dry age-related macular degeneration (AMD) and Pelizaeus-Merzbacher disease (PMD), which is a myelination disorder in the brain. We are also conducting preclinical research to evaluate HuCNS-SC cells in Alzheimer's disease.

In October 2012, we published in *Science Translational Medicine*, a peer-reviewed journal, the data from our four-patient Phase I clinical trial in PMD, which showed preliminary evidence of durable and progressive donor-derived myelination in all four patients. In addition, there were measurable gains in neurological function in three of the four patients, with the fourth patient clinically stable. We are conducting a Phase I/II clinical trial for the treatment of chronic spinal cord injury, which represents the first time that neural stem cells have been transplanted as a potential therapeutic agent for spinal cord injury. This trial is being conducted in Switzerland, Canada, and the United States. Data from the first three patients demonstrated a favorable safety profile and multi-segment gains in sensory function in two of the three patients 12 months after transplantation of HuCNS-SC cells compared to pre-transplant baselines; the third patient remained stable. As of November 2013, a total of eight patients have been dosed with our HuCNS-SC cells in this trial. We are also conducting a Phase I/II clinical trial in dry AMD at two trial sites in the United States, and as of November 2013, have enrolled and dosed a total of seven patients with our HuCNS-SC cells in this trial. We previously completed a Phase I clinical trial in infantile and late infantile neuronal ceroid lipofuscinosis (NCL), which showed that our HuCNS-SC cells were well tolerated and non-tumorigenic, and that there was evidence of engraftment and long-term survival of the transplanted HuCNS-SC cells. In October 2013, the results of a four-year, long-term follow up study of the patients from the initial Phase I study showed there were no long-term safety or tolerability issues associated with the cells up to five years post-transplantation.

In April 2013, we entered into an agreement with the California Institute for Regenerative Medicine (CIRM) under which CIRM will provide up to approximately \$19.3 million as a forgivable loan, in accordance with mutually agreed upon terms and conditions and CIRM regulations. The CIRM loan will help fund preclinical development of our HuCNS-SC cells for Alzheimer's disease. In July 2013, we received an initial disbursement of \$3.8 million under the CIRM Loan Agreement. For a brief description of our significant therapeutic research and development programs see Overview – Research and Development Programs in the Business Section of Part I, Item 1 of our Form 10-K for the year ended December 31, 2012.

We are also engaged in developing and commercializing applications of our technologies to enable research, which we believe represent current and nearer-term commercial opportunities. Our portfolio of technologies includes cell technologies relating to embryonic stem cells, induced pluripotent stem (iPS) cells, and tissue-derived (adult) stem

cells; expertise and infrastructure for providing cell-based assays for drug discovery; a cell culture products and antibody reagents business; and an intellectual property portfolio with claims relevant to cell processing, reprogramming and manipulation, as well as to gene targeting and insertion. Many of these enabling technologies were acquired in April 2009 as part of our acquisition of the operations of Stem Cell Sciences Plc (SCS).

## **Table of Contents**

We have not derived any revenue or cash flows from the sale or commercialization of any products except for license revenue for certain of our patented technologies and sales of products for use in stem cell research. As a result, we have incurred annual operating losses since inception and expect to incur substantial operating losses in the future. Therefore, we are dependent upon external financing, such as from equity and debt offerings, to finance our operations. Before we can derive revenue or cash inflows from the commercialization of any of our therapeutic product candidates, we will need to: (i) conduct substantial in vitro testing and characterization of our proprietary cell types, (ii) undertake preclinical and clinical testing for specific disease indications; (iii) develop, validate and scale-up manufacturing processes to produce these cell-based therapeutics, and (iv) obtain required regulatory approvals. These steps are risky, expensive and time consuming.

## **Our Corporate Information**

We are incorporated in Delaware. Our principal executive offices are located at 7707 Gateway Blvd., Suite 140, Newark, California 94560 and our telephone number is (510) 456-4000. Our website is located at [www.stemcellsinc.com](http://www.stemcellsinc.com). We have not incorporated by reference into this prospectus supplement or the accompanying prospectus the information in, or that can be accessed through, our website, and you should not consider it to be a part of this prospectus supplement or the accompanying prospectus.

**Table of Contents**

**RISK FACTORS**

*You should consider the Risk Factors included and incorporated by reference in this prospectus and any applicable prospectus supplement, including the risk factors incorporated by reference from our most recent Annual Report on Form 10-K, as updated by our Quarterly Reports on Form 10-Q and our other filings with the SEC pursuant to Sections 13(a), 13(c), 14 or 15(d) of the Securities Exchange Act of 1934, as amended (the Exchange Act ) filed after such annual report. The risks and uncertainties we describe are not the only ones facing us. Additional risks not presently known to us, or that we currently deem immaterial, may also impair our business operations. If any of these risks were to occur, our business, financial condition, or results of operations would likely suffer. In that event, the trading price of our common stock could decline, and you could lose all or part of your investment.*

**NOTE REGARDING FORWARD-LOOKING STATEMENTS**

This prospectus and the documents incorporated in this prospectus by reference may contain forward-looking statements . Except for strictly historical information contained herein, matters discussed in this report constitute forward-looking statements. Generally, these statements may be identified by the use of forward-looking words or phrases such as anticipate, believe, could, estimate, expect, intend, look forward, may, planned, po and would, and similar terms. These forward-looking statements reflect our current expectations and are based upon currently available data. The Private Securities Litigation Reform Act of 1995 provides a safe harbor for such forward-looking statements. In order to comply with the terms of the safe harbor, we note that a variety of factors could cause actual results and experience to differ materially from the anticipated results or other expectations expressed in the forward-looking statements