Filed Pursuant to Rule 424(b)(5)
Registration No. 333-83992

PROSPECTUS SUPPLEMENT
(To Prospectus Dated July 3, 2002)

StemCells, Inc.

Up to 7,500,000 Shares of Common Stock

$3.00 per share

We are offering up to 7,500,000 shares of our common stock. Our common stock is listed on the Nasdaq SmallCap Market under the symbol "STEM." On October 25, 2004, the last reported sale price per share of our common stock on the Nasdaq SmallCap Market was $4.09.

Investing in our common stock involves a high degree of risk. See "Risk Factors" beginning on page S-5 of this prospectus supplement for a discussion of important risks that you should consider before making an investment decision.

We have retained C.E. Unterberg, Towbin, LLC and Shoreline Pacific, LLC (each, an "Agent" and collectively, the "Agents") as agents for purposes of soliciting and receiving offers for the purchase of shares in this offering. We have agreed to pay the Agents the fees set forth in the table below. The Agents are not required to sell any specified number or dollar value of shares, but will use their best efforts to arrange the sale of all 7,500,000 shares of common stock offered hereby.

	Per Share of Common Stock	Maximum Total
Public Offering Price	$ 3.00	$22,500,000
Agent Fees	$ 0.18	$ 1,350,000
Proceeds, before expenses, to StemCells	$ 2.82	$21,150,000

There is no minimum offering amount required to complete this offering. Accordingly, we may sell substantially fewer than 7,500,000 shares of common stock in this offering and the total agent fees and total proceeds to StemCells may be substantially less than the maximum totals referred to above.

We expect to deliver the shares of common stock against payment on or about October 28, 2004 on which date the offering will end.

The Securities and Exchange Commission and state regulators have not approved or disapproved these securities, or determined if this prospectus supplement or the accompanying prospectus is accurate or complete. Any representation to the contrary is a criminal offense.

C.E. UNTERBERG, TOWBIN **SHORELINE PACIFIC, LLC**

As Agents

The date of this prospectus supplement is October 25, 2004

TABLE OF CONTENTS

ABOUT THIS PROSPECTUS SUPPLEMENT

This prospectus supplement is not complete without, and may not be utilized except in connection with, the accompanying prospectus dated July 3, 2002 and any amendments to such prospectus. This prospectus supplement provides supplemental information regarding the Company, updates and changes in information contained in the prospectus dated July 3, 2002 and describes the specific terms of this offering. The accompanying prospectus dated July 3, 2002 gives more general information, some of which may not apply to this offering. We incorporate important information into this prospectus supplement and the accompanying prospectus by reference. You may obtain the information incorporated by reference into this prospectus supplement and the prospectus without charge by following the instructions under "Where You Can Find More Information." You should carefully read both this prospectus supplement and the prospectus, as well as additional information described under "Incorporation by Reference," before deciding to invest in shares of our common stock. If the

information in, or incorporated by reference in, this prospectus supplement conflicts with information in the accompanying prospectus or a document incorporated by reference herein or therein, the information in, or incorporated by reference in, this prospectus supplement shall control.

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

You should rely only on the information contained or incorporated by reference in this prospectus supplement and the accompanying 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 supplement and the accompanying prospectus is accurate only as of their respective dates, regardless of the time of delivery of this prospectus supplement and the accompanying prospectus or the time of any sale of our common stock. Our business, financial condition, results of operations and prospects may have changed since those dates.

PROSPECTUS SUPPLEMENT SUMMARY

The following summary is qualified in its entirety by, and should be read in conjunction with, the more detailed information and consolidated financial statements and notes thereto appearing elsewhere in, and incorporated by reference into, this prospectus supplement and the accompanying prospectus. Before you decide to invest in our stock, you should read the entire prospectus supplement and the accompanying prospectus carefully, including the risk factors and consolidated financial statements and related notes included or incorporated by reference in this prospectus supplement and the accompanying prospectus.

The Company

We are engaged in research aimed at the development of therapies that would use stem and progenitor cells to treat, and possibly cure, human diseases and injuries such as neurodegenerative diseases (for instance, Batten's, Parkinson's, and Alzheimer's diseases, and other metabolic genetic disorders), demyelinating disorders (for instance, Multiple Sclerosis), spinal cord injuries, stroke, hepatitis, chronic liver failure, and diabetes. We believe that our stem cell technologies, if successfully developed, may provide the basis for effective therapies for these and other conditions. Our aim is to return patients to productive lives and significantly reduce the substantial health care costs often associated with these diseases and disorders. The body uses certain key cells known as stem cells to produce all the functional mature cell types found in normal organs of healthy individuals. Progenitor cells are cells that have already developed from the stem cells, but can still produce one or more types of mature cells within an organ. We use cells derived from fetal or adult tissue sources and are not developing embryonic stem cells for therapeutic use. We are not involved in any activity directed toward human cloning; our programs are all directed toward the use of tissue-derived cells for treating or curing diseases and injuries.

We have identified the human neural stem cell and candidate pancreas and liver stem or progenitor cells, and have issued patents and pending patent applications to protect our proprietary position. Our most advanced program is focused on the development of our human neural stem cells. To date, we have obtained pre-clinical proof of concept in various animal models including spinal cord injury, stroke, myelin disorders and Batten's disease.

Subject to obtaining required approvals, we expect to file with the Food and Drug Administration no later than the first quarter of 2005 our first Investigational New Drug filing, or IND, for a clinical trial in Batten's disease, a rare, fatal neurodegenerative lysosomal storage disorder affecting the central nervous system. More specifically, the IND would provide for a clinical trial in infantile and late-infantile neuronal ceroid lipofuscinosis, or NCL. The NCLs are a set of several closely related genetic lysosomal storage disorders caused by a deficiency of specific enzymes required for normal cell metabolism. The deficiency results in storage of toxic waste materials and the death of certain neurons. The NCLs primarily affect infants and young children and are always fatal. In preclinical studies in a mice model of a specific form of NCL, our proprietary human neural stem cells were transplanted into the mice, resulting in widespread engraftment, persistent production of the enzyme that is deficient in the disease, reduction in the toxic waste material and preliminary indications of improved neuronal survival. Since all of the NCLs, which include Batten's disease, are commonly referred to as Batten's disease, we refer to them in this way throughout this prospectus supplement.

Many diseases, such as Alzheimer's, Parkinson's, and other degenerative diseases of the brain or nervous system, involve the failure of organs that cannot be transplanted. Other diseases, such as hepatitis and diabetes, involve organs such as the liver or pancreas that can be transplanted, but there is a very limited supply of those organs available for transplant. We estimate that these neural, liver and pancreatic conditions affect more than 49 million people in the United States and account for more than $300 billion annually in health care costs.

Our stem cell discovery engine relies upon our state- of the art cell sorting capabilities and our library of proprietary monoclonal antibodies to human proteins. Using these and other monoclonal antibodies, we have successfully identified, purified, and characterized the human central nervous system stem cell. We have also used our proprietary monoclonal antibodies to make significant advances in our search for stem or progenitor cells of the liver and the pancreas. We have established an intellectual property position in all three areas of our stem cell research — the nervous system, the liver and the pancreas — by patenting our discoveries and entering into

exclusive in-licensing arrangements. We believe that, if successfully developed, our platform of stem cell technologies may create the basis for therapies that would address a number of conditions with significant unmet medical needs. We are concentrating our in-house efforts on our neural and liver programs and, for the present, pursuing research on the pancreas primarily through an external collaborator.

Our principal executive offices are located at 3155 Porter Drive, Palo Alto, CA 94304, and our phone number is (650) 475-3100.

Recent Developments

In August 2004, we announced that we had been issued U.S. patent 6,777,233 for work done at the Company covering composition of matter claims for the human neural stem cell. The patent covers human neural stem cell cultures derived from any source, including embryonic as well as fetal, neonatal and adult tissue.

At September 30, 2004, we had cash and cash equivalents of approximately $23,100,000, total current assets of approximately $23,400,000 and total current liabilities of approximately $3,500,000. We expect to report net losses for the three months ended September 30, 2004 and the nine months ended September 30, 2004 of approximately $4,300,000 and $10,400,000, respectively, which reflect, in part, non-cash charges of approximately $1,300,000 and $1,900,000, respectively, due to additions to our reserve for wind-down expenses related to our former Rhode Island facilities.

The Offering

Securities offered	Up to 7,500,000 shares of common stock at $3.00 per share. There is no minimum offering amount required to complete this offering. Accordingly, we may sell substantially fewer than 7,500,000 shares of common stock in this offering.
Shares of common stock to be outstanding after this offering if all shares offered by this prospectus supplement are sold	61,756,938 shares
Use of proceeds	We intend to use the net proceeds of this offering for general corporate purposes, including working capital, product development and capital expenditures, as well as acquisitions and other strategic purposes. Pending these uses, the net proceeds will be invested in an interest-bearing money market account with a financial institution.
Nasdaq SmallCap Market symbol	STEM

The number of shares of common stock shown above to be outstanding after this offering is based on the 54,256,938 shares outstanding as of October 22, 2004 and excludes:

- 6,217,389 shares of our common stock subject to options outstanding as of October 22, 2004 at a weighted average exercise price of $2.601 per share;
- 8,870,529 shares of our common stock that have been reserved for issuance upon future grants under our stock option plans as of October 22, 2004; and
- 6,038,430 shares of our common stock that have been reserved for issuance upon exercise of outstanding warrants as of October 22, 2004 at a weighted average exercise price of $2.09 per share.

RISK FACTORS

Investing in our common stock is risky. In addition to the other information in this prospectus, the following risk factors should be considered carefully in evaluating us and our business. If any of the following 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 a part of your investment.

Risks Related to our Business

Our financial situation is precarious and, based on currently estimated operating expenses, our existing capital resources are only sufficient to fund our operations into 2006.

We have incurred significant operating losses and negative cash flows since inception. We have not achieved profitability and may not be able to realize sufficient revenues to achieve or sustain profitability in the future. We do not expect to be profitable in the next several years, but rather expect to incur additional operating losses. We have limited liquidity and capital resources and must obtain significant additional capital resources in order to sustain our product development efforts and for acquisition of technologies and intellectual property rights, preclinical and clinical testing of our anticipated products, pursuit of regulatory approvals, acquisition of capital equipment, laboratory and office facilities, establishment of production capabilities, general and administrative expenses and other working capital requirements. We rely on cash reserves and proceeds from equity and debt offerings, proceeds from the transfer or sale of our intellectual property rights, equipment, facilities or investments, and government grants and funding from collaborative arrangements, if obtainable, to fund our operations. If we exhaust our cash reserves and are unable to realize adequate financing, we may be unable to meet operating obligations and be required to initiate bankruptcy proceedings. Our existing capital resources are only sufficient to fund our operations into 2006. These conditions raise doubt about our ability to continue as a going concern. The financial statements do not include any adjustments to reflect the possible future effects on the recoverability and classification of assets or the amounts and classification of liabilities that may result from the outcome of this uncertainty.

We intend to pursue opportunities to obtain additional financing in the future through equity and debt financings, grants and collaborative research arrangements. The source, timing and availability of any future financing will depend principally upon market conditions, interest rates and, more specifically, on our progress in our exploratory, preclinical and future clinical development programs. Funding may not be available when needed – at all or on terms acceptable to us. Lack of necessary funds may require us to delay, scale back or eliminate some or all of our research and product development programs and/or our capital expenditures or to license our potential products or technologies to third parties.

Our technology is at an early stage of discovery and development, and we may fail to develop any commercially acceptable products.

Our stem cell technology is still in the pre-clinical stage for the brain stem cell and at the discovery phase for the liver and pancreas stem cells and has not yet led to the development of any product. We may fail to discover the stem cells we are seeking, to develop any products, to obtain regulatory approvals, to enter clinical trials, or to commercialize any products. Any product using stem cell technology may fail to:

- survive and persist in the desired location;
- provide the intended therapeutic benefits;
- properly integrate into existing tissue in the desired manner; or
- achieve therapeutic benefits equal to or better than the standard of treatment at the time of testing.

In addition, our products may cause undesirable side effects. Results of early pre-clinical research may not be indicative of the results that will be obtained in later stages of pre-clinical or clinical research. If regulatory authorities do not approve our products or if we fail to maintain regulatory compliance, we would have limited ability to commercialize our products, and our business and results of operations would be harmed. Furthermore, because stem cells are a new form of therapy, the marketplace may not accept any products we may develop. If we do succeed in developing products, we will face many potential obstacles such as the need to obtain regulatory approvals and to develop or obtain manufacturing, marketing and distribution capabilities. In addition, we will face substantial additional risks such as product liability claims.

Moreover, because our cell therapy treatments will be derived from tissue of individuals other than the patient (that is, they will be “non-self” or “allogeneic” transplant products), patients will require the use of immunosuppressive drugs such as cyclosporine, FK506, or others to prevent rejection of the cells. While immunosuppression is now standard in connection with allogeneic transplants of various kinds, long-term maintenance on immunosuppressive drugs can produce complications that include infection, cancer, cardiovascular disease, renal dysfunction and other side effects depending upon which immunosuppressive regimen is employed. Immunosuppression has not been tested with our therapies since we have not yet conducted any clinical trials.

We plan to file with the Food and Drug Administration no later than the first quarter of 2005 our first IND, providing for a clinical trial in infantile and late-infantile Batten’s disease. As part of the IND process, the FDA requires us to qualify the cell bank to be used in these trials as a suitable source of the cells for the proposed clinical trials. In addition, they require us to conduct extensive pre-clinical safety testing (i.e., pharmacology and toxicology studies) in various animal models. We are also required to submit, as part of the IND filing, details of the proposed clinical plan. We must also obtain the approval of the internal review board at the medical institution where the clinical trial would be conducted. We may not be able to satisfy all of the requirements to file the IND or to move the Batten disease program into clinical trials, which could have a material adverse effect on our product development timeline.

We have payment obligations resulting from real property owned or leased by us in Rhode Island, which diverts funding from our stem cell research and development.

Prior to our reorganization in 1999 and the consolidation of our business in California, we carried out our former encapsulated cell therapy programs in Lincoln, Rhode Island, where we also had our administrative offices. Although we have vacated the Rhode Island facilities, we remain obligated to make on average, lease payments and payments for operating costs of approximately $1,450,000 per year before sub-tenant rent income for our former science and administrative facility, which we have leased through June 30, 2013, and debt service payments and payments for operating costs of approximately $500,000 per year for our former encapsulated cell therapy pilot manufacturing facility, which we own. We have currently subleased a portion of the science and administrative facility, and are seeking to sublease the remaining portion, but we cannot be sure that we will be able to keep any part of the facility subleased for the duration of our obligation. We have currently subleased the entire pilot manufacturing facility to a privately-held biotechnology company, but may not be able to sublease or sell the facility in the future once the current sublease agreements expire. These continuing costs significantly reduce our cash resources and adversely affect our ability to fund further development of our stem cell technology. In addition, changes in real estate market conditions and assumptions regarding the length of time it may take us to either fully sublease, assign or sell our remaining interest in the our former research facility in Rhode Island may have a significant impact on and cause large variations in our quarter to quarter results of operations. In 1999, in connection with exiting our former research facility in Rhode Island, we created a reserve for the estimated lease payments and operating expenses related to it. The reserve has been re-evaluated and adjusted based on assumptions relevant to real estate market conditions and the estimated time until we could either fully sublease, assign or sell our remaining interests in the property. At June 30, 2004 the reserve was $2,680,000. We currently expect that for the three months ended September 30, 2004, expenses of approximately $300,000 net of subtenant income will be recorded against this reserve. We also expect that, based on our re-evaluation of the reserve as of September 30, 2004, we will adjust the reserve to approximately $3,700,000 by recording an additional wind-down expenses of approximately $1,300,000. Wind-down expenses for the same period in 2003 were $224,000. Expenses for this facility will fluctuate based on changes in tenant occupancy rates and other operating expenses related to the lease. Even though it is our intent to sublease, assign, sell or otherwise divest ourselves of our interests in the facility at the earliest possible time, we cannot determine with certainty a fixed date by which such events will occur. In light of this uncertainty, based on estimates, we will periodically re-evaluate and adjust the reserve, as necessary.

We may need but fail to obtain partners to support our stem cell development efforts and to commercialize our technology.

Equity and debt financings alone may not be sufficient to fund the cost of developing our stem cell technologies, and we may need to rely on our ability to reach partnering arrangements to provide financial support for our stem cell discovery and development efforts. In addition, in order to successfully develop and commercialize our technology, we may need to enter into a wide variety of arrangements with corporate sponsors, pharmaceutical companies, universities, research groups and others. While we have engaged, and expect to continue to engage, in discussions regarding such arrangements, we have not reached any agreement, and we may fail to obtain any such agreement on terms acceptable to us. Even if we enter into these arrangements, we may not be able to satisfy our obligations under them

or renew or replace them after their original terms expire. Furthermore, these arrangements may require us to grant certain rights to third parties, including exclusive marketing rights to one or more products, may require us to issue securities to our collaborators or may contain other terms that are burdensome to us. If any of our collaborators terminates its relationship with us or fails to perform its obligations in a timely manner, the development or commercialization of our technology and potential products may be adversely affected.

We have a history of operating losses, and we may fail to obtain revenues or become profitable.

We expect to continue to incur substantial operating losses in the future in order to conduct our research and development activities, and, if those activities are successful, to fund clinical trials and other expenses. These expenses include the cost of acquiring technology, product testing, acquiring regulatory approvals, establishing production, marketing, sales and distribution programs and administrative expenses. We have not earned any revenues from sales of any product. All of our past revenues have been derived from, and any revenues we may obtain for the foreseeable future are expected to be derived from, cooperative agreements, research grants, investments and interest on invested capital. We currently have no cooperative agreements, we have only one current research grant for our stem cell technology, and we may not obtain any such agreements or additional grants in the future or receive any revenues from them.

If we are unable to protect our patents and proprietary rights, our business, financial condition and results of operations will be harmed.

We own or license a number of patents and pending patent applications related to various stem and progenitor cells and methods of deriving and using them, including human neural stem cell cultures. Patent protection for products such as those we propose to develop is highly uncertain and involves complex and continually evolving factual and legal questions. The governmental authorities that consider patent applications can deny or significantly reduce the patent coverage requested in an application before or after issuing the patent. Consequently, we do not know whether any of our pending applications will result in the issuance of patents, if any existing or future patents will provide sufficient protection or significant commercial advantage or if others will circumvent these patents. We cannot be certain that we were the first to discover the inventions covered by each of our pending patent applications or that we were the first to file patent applications for such inventions because patent applications are secret until they are published, and because publication of discoveries in the scientific or patent literature often lags behind actual discoveries. Patents may not issue from our pending or future patent applications or, if issued, may not be of commercial benefit to us. In addition, our patents may not afford us adequate protection from competing products. Third parties may challenge our patents or governmental authorities may declare them invalid. In the event that a third party has also filed a patent application relating to inventions claimed in our patent applications, we may have to participate in proceedings to determine priority of invention. This could result in substantial uncertainties and cost for us, even if the eventual outcome is favorable to us, and the outcome might not be favorable to us. Even if a patent issues, a court could decide that the patent was issued invalidly. Further, patents issue for a limited term, and our patents may expire before we utilize them profitably. Under the procedures of the European Patent Office, third parties may oppose our issued European patents during the relevant opposition period. Such oppositions could result in substantial uncertainties and cost for us, even if the eventual outcome is favorable to us, and the outcome might not be favorable to us. One party has opposed two of our granted European patents. While we are confident in our position, there is no guarantee that we will prevail. If we are unsuccessful in our defense of the opposed patents, all claimed rights in the opposed patents will be lost in Europe.

Proprietary trade secrets and unpatented know-how are also important to our research and development activities. We cannot be certain that others will not independently develop the same or similar technologies on their own or gain access to our trade secrets or disclose such technology or that we will be able to meaningfully protect our trade secrets and unpatented know-how. We require our employees, consultants, and significant scientific collaborators and sponsored researchers to execute confidentiality agreements upon the commencement of an employment or consulting relationship with us. These agreements may, however, fail to provide meaningful protection or adequate remedies for us in the event of unauthorized use, transfer or disclosure of such information or technology.

If others are first to discover and patent the stem cells we are seeking to discover, we could be blocked from further work on those stem cells.

Because the first person or entity to discover and obtain a valid patent to a particular stem or progenitor cell may effectively block all others, it will be important for us or our collaborators to be the first to discover any stem cell that we are seeking to discover. Failure to be the first could prevent us from commercializing all of our research and development affected by that patent.

If we are unable to obtain necessary licenses to third-party patents and other rights, we may not be able to commercially develop our expected products.

A number of pharmaceutical, biotechnology and other companies, universities and research institutions have filed patent applications or have received patents relating to cell therapy, stem cells and other technologies potentially relevant to or necessary for our expected products. We cannot predict which, if any, of the applications will issue as patents. If third party patents or patent applications contain valid claims that our technology infringes upon their technology, we may be unable to obtain licenses to these patents at a reasonable cost, if at all, and may also be unable to develop or obtain alternative technology. If we are unable to obtain such licenses at a reasonable cost, our business could be significantly harmed. We have obtained rights from universities and research institutions to technologies, processes and compounds that we believe may be important to the development of our products. These licensors, however, may cancel our licenses or convert them to non-exclusive licenses if we fail to use the relevant technology or otherwise breach these agreements. Loss of these licenses could expose us to the risks of third-party patents and/or technology. We can give no assurance that any of these licenses will provide effective protection against our competitors.

We compete with companies that have significant advantages over us.

The market for therapeutic products to treat diseases of, or injuries to, the central nervous system (CNS) is large, and competition is intense. The majority of the products currently on the market or in development are small molecule pharmaceutical compounds. Many of the world's pharmaceutical companies, including Merck, Pfizer, Abbott, Bristol-Myers Squibb, Novartis and GlaxoSmithKline, have made significant commitments to the CNS field. Any cell-based therapy to treat diseases of, or injuries to, the CNS is likely to face intense competition from the small molecule sector. In addition, a number of biotechnology companies with resources far greater than ours may also emerge as competitors. These include Genzyme, Amgen, Cephalon, Transkaryotic Therapies, BioMarin, Celgene, Biogen, and Titan Pharmaceuticals. Finally, we also expect to compete with smaller biotechnology companies, some of which are privately owned, such as Neuralstem, Geron, NeuroNova, ReNeuron, ES Cell International, and CellFactors/Diacrin.

We believe that our human neural stem cells may have application to many or most of the Lysosomal Storage Diseases ("LSDs") with CNS involvement. We intend to submit our first IND for Batten's Disease, which is one of the LSDs that affect the CNS. There are, so far as we know, no approved therapies for Battens or any of the other CNS-specific LSDs, but other companies, including Genzyme, BioMarin, and Transkaryotic Therapies, have products approved to treat peripheral aspects of some of the other LSDs, and other products are in clinical trials.

In the field of diabetes, a number of major companies currently market products for the treatment of diabetes and are also engaged in the research and development of new therapies. Such companies include Eli Lilly, Novo Nordisk, J&J, Amylin, Serono. Consequently, should we successfully develop a cell-based therapy for diabetes, we would expect to face severe competition from these and similar companies.

In the liver field, there are no broad-based therapies for the treatment of liver disease at present. The primary therapy is liver transplantation, which is limited by the availability of matched donor organs. Liver-assist devices, when and if they become available, could also be used to help patients while they await suitably matched organs for transplantation.

Development of our technology is subject to and restricted by extensive government regulation, which could impede our business.

Our research and development efforts, as well as any future clinical trials, and the manufacturing and marketing of any products we may develop, will be subject to and restricted by extensive regulation by governmental authorities in the United States and other countries. The process of obtaining U.S. Food and Drug Administration and other necessary regulatory approvals is lengthy, expensive and uncertain. We or our collaborators may fail to obtain the necessary approvals to commence or continue clinical testing or to manufacture or market our potential products in reasonable time frames, if at all. In addition, the U.S. Congress and other legislative bodies may enact regulatory reforms or restrictions on the development of new therapies that could adversely affect the regulatory environment in which we operate or the development of any products we may develop.

We base our research and development on the use of human stem and progenitor cells obtained from fetal tissue. The federal and state governments and other jurisdictions impose restrictions on the use of fetal tissue. These restrictions change from time to time and may become more onerous. Additionally, we may not be able to identify or develop reliable sources for the cells necessary for our potential products – that is, sources that follow all state and federal guidelines for cell procurement. Further, we may not be able to obtain such cells in the quantity or

quality sufficient to satisfy the commercial requirements of our potential products. As a result, we may be unable to develop or produce our products in a profitable manner.

Although we do not use embryonic stem cells, government regulation and threatened regulation of embryonic tissue may lead top researchers to leave the field of stem cell research, or the country, in order to assure that their careers will not be impeded by restrictions on their work. Similarly, these factors may induce the best graduate students to choose other fields less vulnerable to changes in regulatory oversight, thus exacerbating the risk, discussed below, that we may not be able to attract and retain the scientific personnel we need in face of the competition among pharmaceutical, biotechnology and health care companies, universities and research institutions for what may become a shrinking class of qualified individuals. In addition, we cannot assure you that constraints on the use of embryonic stem cells will not be extended to use of fetal stem cells. Moreover, it is possible that concerns regarding research using embryonic stem cells will impact our ability to attract collaborators and investors and our stock price.

We may apply for status under the Orphan Drug Act for some of our therapies to gain a seven-year period of marketing exclusivity for those therapies. The U.S. Congress in the past has considered, and in the future again may consider, legislation that would restrict the extent and duration of the market exclusivity of an orphan drug. If enacted, such legislation could prevent us from obtaining some or all of the benefits of the existing statute even if we were to apply for and be granted orphan drug status with respect to a potential product.

We are dependent on the services of key personnel.

We are highly dependent on the principal members of our management and scientific staff and some of our outside consultants, including the members of our scientific advisory board, our chief executive officer, our vice presidents and the directors of our neural stem cell and liver stem cell programs. Although we have entered into employment agreements with some of these individuals, they may terminate their agreements at any time. In addition, our operations are dependent upon our ability to attract and retain additional qualified scientific and management personnel. We may not be able to attract and retain the personnel we need on acceptable terms given the competition for experienced personnel among pharmaceutical, biotechnology and health care companies, universities and research institutions.

We may need to improve our financial control procedures.

The Company may also need to add additional personnel in the area of financial management. In connection with its audit of the Company's consolidated financial statements for the year ended December 31, 2003, Grant Thornton LLP, the Company's independent accountants, communicated to the Audit Committee and management regarding internal control matters with respect to segregation of duties and financial reporting matters that they considered to be deficiencies and which they considered, in the aggregate, to constitute a significant deficiency and material weakness under standards established by the American Institute of Certified Public Accountants. In response to the observations made by Grant Thornton, the Company undertook a re-evaluation of its internal controls and procedures relating to those observations and plans to implement such enhancements as the review suggested were appropriate.

Since health care insurers and other organizations may not pay for our products or may impose limits on reimbursements, our ability to become profitable could be reduced.

In both domestic and foreign markets, sales of potential products are likely to depend in part upon the availability and amounts of reimbursement from third party health care payor organizations, including government agencies, private health care insurers and other health care payors, such as health maintenance organizations and self-insured employee plans. There is considerable pressure to reduce the cost of therapeutic products, and government and other third party payors are increasingly attempting to contain health care costs by limiting both coverage and the level of reimbursement for new therapeutic products and by refusing, in some cases, to provide any coverage for uses of approved products for disease indications for which the U.S. Food and Drug Administration has not granted marketing approval. Significant uncertainty exists as to the reimbursement status of newly approved health care products or novel therapies such as ours. We can give no assurance that reimbursement will be provided by such payors at all or without substantial delay or, if such reimbursement is provided, that the approved reimbursement amounts will be sufficient to enable us to sell products we develop on a profitable basis. Changes in reimbursement policies could also adversely affect the willingness of pharmaceutical companies to collaborate with us on the development of our stem cell technology. In certain foreign markets, pricing or profitability of prescription pharmaceuticals is subject to government control. We also expect that there will continue to be a number of federal and state proposals to implement government control over health care costs. Efforts at health care reform are likely to continue in future legislative sessions. We do not know what legislative proposals federal or state governments will adopt or what actions federal, state or private payers for health care goods and services may take in response to

health care reform proposals or legislation. We cannot predict the effect government control and other health care reforms may have on our business.

We have limited liquidity and capital resources and may not obtain the significant capital resources we will need to sustain our research and development efforts.

We have limited liquidity and capital resources and must obtain substantial additional capital to support our research and development programs, for acquisition of technology and intellectual property rights and, to the extent we decide to undertake these activities ourselves, for pre-clinical and clinical testing of our anticipated products, pursuit of regulatory approvals, establishment of production capabilities, establishment of marketing and sales capabilities and distribution channels, and general administrative expenses. If we do not obtain the necessary capital resources, we may have to delay, reduce or eliminate some or all of our research and development programs or license our technology or any potential products to third parties rather than commercialize them ourselves. We intend to pursue our needed capital resources through equity and debt financings, corporate alliances, grants and collaborative research arrangements. We may fail to obtain the necessary capital resources from any such sources when needed or on terms acceptable to us. Our ability to complete successfully any such arrangements will depend upon market conditions and, more specifically, on continued progress in our research and development efforts.

Risks Related to the Securities Market and this Offering

Our stock price has been, and will likely continue to be, highly volatile, which may negatively affect our ability to obtain additional financing in the future.

The market price of our stock has been and is likely to continue to be highly volatile due to the risks and uncertainties described in this section of the prospectus, as well as other factors, including:

- our ability to develop and test our technology;
- our ability to patent or obtain licenses to necessary technology;
- conditions and publicity regarding the industry in which we operate, as well as the specific areas our product candidates seek to address;
- competition in our industry;
- federal or state government actions affecting the conduct or funding of stem cell research, including, without limitation, the passage or defeat of Proposition 71, which is to be voted on by California voters on November 2, 2004;
- price and volume fluctuations in the stock market at large that are unrelated to our operating performance; and
- comments by securities analysts, or our failure to meet market expectations.

Over the two-year period ended October 25, 2004, the closing price of our common stock as reported on the Nasdaq National Market and the Nasdaq SmallCap Market ranged from a high of $4.09 to a low of $0.49. As a result of this volatility, your investment in our stock is subject to substantial risk. Furthermore, the volatility of our stock price could negatively impact our ability to raise capital in the future.

If our common stock price drops significantly, we may be delisted from the NASDAQ SmallCap Market, which could eliminate the trading market for our common stock.

Our common stock is quoted on the Nasdaq SmallCap Market. In order to continue to be included in the Nasdaq Small Cap Market, a company must meet Nasdaq's maintenance criteria. The maintenance criteria most applicable to us requires a minimum bid price of $1.00 per share and additionally requires a minimum of $2,500,000 in stockholders' equity. Stockholders' equity is composed of three fundamental sources: capital stock, additional paid-in-capital, and retained earnings. Capital stock represents ownership interest in the corporation. Additional paid-in-capital represents additional monies paid into the corporation by investors above the par value of shares issued. Retained earnings represents income (loss) that the corporation has accumulated as a result of its day-to-day operating activities. Our stockholders' equity as of June 30, 2004 was $23,743,236. Failure to meet these maintenance criteria may result in the delisting of our common stock from the Nasdaq SmallCap Market. If our common stock were delisted, in order to have our common stock relisted on the SmallCap Market we would be required to meet the criteria for initial listing, which are more stringent than the maintenance criteria. Accordingly,

we cannot assure you that if we were delisted we would be able to have our common stock relisted on the Nasdaq SmallCap Market. If our common stock were delisted from the Nasdaq SmallCap Market, we also may be required to pay damages to holders of our common stock under agreements we previously entered into with them in connection with equity financings. Finally, if our common stock were delisted from the Nasdaq SmallCap Market, it might become more difficult for us to raise funds through the sale of our common stock or securities convertible into our common stock.

We are contractually obligated to issue shares in the future, diluting your interest in us.

As of October 22, 2004, there were outstanding and exercisable warrants to purchase 6,038,430 shares of our common stock, at a weighted average exercise price of $2.09 per share. As of October 22, 2004, there were also outstanding and exercisable options to purchase 6,217,389 shares of our common stock, at a weighted average exercise price of $2.601 per share. Moreover, we expect to issue additional options to purchase shares of our common stock to compensate employees, consultants and directors, and may issue additional shares to raise capital, to acquire other companies or technologies, to pay for services, or for other corporate purposes. Any such issuances will have the effect of further diluting the interest of the purchasers of the securities being sold in this offering.

FORWARD-LOOKING STATEMENTS

This prospectus supplement, the accompanying prospectus and the documents incorporated by reference in this prospectus supplement and the accompanying prospectus contain “forward-looking statements” within the meaning of Section 27A of the Securities Act of 1933, as amended (the “Securities Act”), and Section 21E of the Securities Exchange Act of 1934, as amended (the “Exchange Act”). These statements may be identified by the use of forward-looking words or phrases such as “anticipate,” “believe,” “could,” “expect,” “intend,” “look forward,” “may,” “planned,” “potential,” “should,” “will,” and “would.” 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. 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, including our plans to make an IND filing no later than the first quarter of 2005, 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, such as failure to obtain a corporate partner or partners to support the development of our stem cell programs, our inability to sell, assign or sublease our interest in our facilities related to our encapsulated cell technology program, risks of delays in, or adverse results from, our research, development and pre-clinical and clinical testing programs, including our work in preparation for our planned IND filing, obsolescence of our technology, lack of available funding, competition from third parties, intellectual property rights of third parties, failure of our collaborators to perform, regulatory constraints, litigation and other risks to which we are subject.

USE OF PROCEEDS

If all of the 7,500,000 shares of common stock offered hereby are sold, we expect that we will receive net proceeds of approximately $20,950,000, after deducting the Agents' fees and estimated offering expenses that we will pay. There is no minimum offering amount required to complete this offering. Accordingly, we may sell substantially less than 7,500,000 shares of common stock in this offering and the net proceeds of this offering may be significantly less than $20,950,000.

We intend to use the net proceeds of our sales of common stock in this offering for general corporate purposes, including working capital, product development and capital 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. There are currently no commitments or agreements with respect to any such material acquisition. Pending these uses, the net proceeds will be invested in an interest-bearing money market account with a financial institution.

PRICE RANGE OF COMMON STOCK

Our common stock trades on the Nasdaq SmallCap Market under the symbol "STEM." The high and low intraday sales prices of our common stock as reported by the Nasdaq SmallCap Market (Nasdaq National Market prior to December 23, 2002) have been as follows:

	High	Low
Fiscal Year Ended December, 2002		
First Quarter	3.95	2.03
Second Quarter	2.58	1.35
Third Quarter	2.09	0.65
Fourth Quarter	1.30	0.49
Fiscal Year Ended December 31, 2003		
First Quarter	1.48	0.85
Second Quarter	2.85	0.65
Third Quarter	2.60	1.16
Fourth Quarter	3.12	1.70
Fiscal Year Ended December 31, 2004		
First Quarter	2.69	1.56
Second Quarter	2.20	1.30
Third Quarter	1.87	1.24
Fourth Quarter (to October 25, 2004)	4.87	1.53

The last reported sales price of the common stock on the Nasdaq SmallCap Market on October 25, 2004 was $4.09 per share. As of October 22, 2004, there were outstanding 54,256,938 shares of our common stock.

DIVIDEND POLICY

We do not pay cash dividends on our common stock and do not intend to declare or pay dividends in the foreseeable future.

DESCRIPTION OF CAPITAL STOCK

The Company is authorized to issue 126,000,000 shares of stock, consisting of 125,000,000 shares of common stock and 1,000,000 shares of undesignated preferred stock. The holders of our common stock are entitled to one vote per share on all matters submitted to our stockholders. The holders of our common stock are entitled to receive dividends as and when declared by our board of directors. The Board of Directors is authorized to designate the rights, privileges and preferences of the preferred stock.

Upon any liquidation, dissolution or winding up of StemCells, holders of common stock are entitled to ratable distribution of the assets available for distribution to our stockholders.

Holders of common stock do not have preemptive rights or cumulative voting rights.

PLAN OF DISTRIBUTION

Pursuant to an agency agreement, we engaged the Agents as our exclusive agents to solicit offers to purchase our common stock in this offering. The Agents are not obligated to, and have advised us that they will not, purchase any shares of our common stock offered hereby for their own accounts, but each has agreed to use its reasonable best efforts to arrange for the sale, in the aggregate, of up to 7,500,000 shares of our common stock. We will enter into securities purchase agreements directly with the investors in connection with this offering. Assuming purchase agreements are executed by investors as currently contemplated, on and subject to the terms and conditions of the purchase agreements, investors will agree to purchase, and we will agree to sell, up to an aggregate of 7,500,000 shares of our common stock. The purchase agreements will provide for, and closing thereunder will be facilitated by, an escrow arrangement whereby each investor will be required to deposit into an escrow account the amount of the purchase price for the shares of common stock subscribed for by such investor, which amount, net of Agents' fees and reimbursable expenses, will be distributed to us at the closing.

We expect that the shares of common stock will be delivered only in book-entry form through The Depository Trust Company, New York, New York on or about October 28, 2004.

Offers and sales of our common stock in this offering will be made to investors that are "accredited investors" as defined in regulations of the SEC. Each investor will be required to make certain representations to us relating to such investor's investment intent and status as an "accredited investor."

Each Agent's compensation for acting as agent for this offering will consist of a cash fee equal to 3% of the gross proceeds from the sale of shares of common stock in this offering and reimbursement of expenses described below.

The following table sets forth the cash fee to be paid to the Agents for this offering on a per share basis and assuming all of the shares offered hereby are sold at the closing.

	Per Share of Common Stock	Maximum Total
Agent Fees	$0.18	$1,350,000

There is no minimum offering amount required to complete this offering. Accordingly, we may sell substantially less than 7,500,000 shares of common stock, in which case our net proceeds would be substantially reduced and the total Agent fees may be substantially less than the maximum total referred to above.

We have also agreed to reimburse the Agents for reasonable expenses including fees and disbursements of counsel incurred by the Agents in connection with this offering, estimated to be approximately $50,000.

The expenses directly related to this offering, not including the Agent fees, are estimated to be approximately $200,000 and will be paid by us. Expenses of the offering, exclusive of the Agent fees, include the Agents' reimbursable expenses, our legal and accounting fees, printing expenses, transfer agent fees, Nasdaq listing fees and miscellaneous fees. We have agreed to indemnify each Agent and its controlling persons from and against, and to make contributions for payments made by such person with respect to, certain liabilities, including liabilities arising under the Securities Act.

Each of our executive officers and certain of our directors have agreed that, without the prior written consent of the Agents, they will not offer, sell, contract to sell, pledge or otherwise dispose of, or enter into any transaction which is designed to, or might reasonably be expected to, result in the disposition by them, their affiliates or persons in privity with them of, or establish or increase a put equivalent position or liquidate or decrease a call equivalent position with respect to, any shares of our common stock or any securities convertible into or exercisable or exchangeable for shares of our common stock, now or hereafter owned of record or beneficially by them, or publicly announce an intention to effect any such transaction, for a period commencing on the date of this prospectus supplement and ending 90 days thereafter. The restrictions described above do not apply to:

- transfers pursuant to a court order, decree or settlement,
- pledges of common stock or other securities to a bank or other financial institution,

- transfers of common stock or other securities to members of the immediate family of the director or executive officer or to a corporation, partnership, limited liability company or other entity wholly-owned by him or her or members of his or her immediate family, transfers to charitable organizations, or transfers to any trust for the direct or indirect benefit of the director or executive officer or his or her immediate family; provided in each such case the transferee agrees to be bound by the lock-up restrictions, and

- the exercise of options and transfers of shares of common stock to us that are used to pay taxes applicable to the exercise of options in accordance with our stock option arrangements.

In connection with this offering, the Agents may engage in transactions that stabilize, maintain or otherwise affect the market price of our common stock. Any of these activities may maintain the market price of our common stock at a level above that which might otherwise prevail in the open market. The Agents are not required to engage in these activities and, if commenced, may end any of these activities at any time. In connection with this offering, the Agents may distribute prospectuses electronically.

Each Agent and its affiliates in the future may provide financial services for us for which they may receive compensation.

LEGAL MATTERS

The validity of the shares of common stock being offered hereby and certain legal matters related to the sale of the shares of common stock will be passed upon for the Company by Ropes & Gray LLP, Boston, Massachusetts. Certain legal matters related to the sale of the shares of our common stock offered hereby will be passed upon for the Agents by Cooley Godward LLP, San Francisco, California.

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. You may read and copy any document we file at the SEC's public reference room at 450 Fifth Street, N.W., 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.

INCORPORATION BY REFERENCE

This prospectus supplement and the accompanying prospectus are part of a registration statement on Form S-3, including amendments, relating to the common stock offered by this prospectus supplement and the accompanying prospectus, which has been filed with the SEC. This prospectus supplement and the accompanying prospectus do not contain all of the information set forth in the registration statement and the exhibits and schedules thereto, certain parts of which are omitted in accordance with the rules and regulations of the SEC. Statements contained in this prospectus supplement and 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 as an exhibit to the registration statement. For further information about us and the common stock offered by this prospectus supplement and the accompanying prospectus we refer you to the registration statement and its exhibits and schedules which may be obtained as described above.

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. Information in the accompanying prospectus supersedes information incorporated by reference that we filed with the SEC before the date of the prospectus, and information in this prospectus supplement supersedes information incorporated by reference that we filed with the SEC before the date of this prospectus supplement, while information that we file later with the SEC will automatically update and supersede prior information. We incorporate by reference the documents listed below and any future filings we will make with the SEC under Sections 13(a), 13(c), 14 or 15(d) of the Securities Exchange Act of 1934, as amended, prior to the termination of the offering:

- our annual report on Form 10-K for the fiscal year ended December 31, 2003, including any amendment filed for the purpose of updating such annual report;
- our quarterly reports on Form 10-Q for the fiscal quarters ended March 31, 2004 and June 30, 2004, including any amendments filed for the purpose of updating such quarterly reports;
- our current reports on Form 8-K filed with the SEC on April 12, 2004, May 4, 2004, June 17, 2004, July 30, 2004 and October 25, 2004;
- the description of our common stock contained in our registration statement on Form 8-A (File No. 1-19871) filed under the Exchange Act, including any amendment or report filed for the purposes of updating such description; and
- our definitive proxy statement on Schedule 14A filed with the SEC on April 28, 2004.

You may obtain copies of these filings, at no cost, on our website (www.stemcellsinc.com), and you may request copies of these filings, at no cost, by writing or telephoning us at:

StemCells, Inc.
3155 Porter Drive
Palo Alto, Ca 94304
Attention: Investor Relations
(650) 475-3100

Except for the SEC filings that are incorporated by reference, the information contained on our website is not a part of this prospectus supplement or the accompanying prospectus.

PROSPECTUS

STEMCELLS, INC.
15,000,000 SHARES OF COMMON STOCK

We may offer from time to time up to 15,000,000 shares of our common stock. We will offer the common stock in amounts, at prices, and on terms to be determined at the time of the offering. We will provide the specific terms of the offering in supplements to this prospectus. This prospectus may not be used to offer and sell our common stock unless accompanied by a prospectus supplement.

Our common stock is listed on the Nasdaq National Market under the symbol "STEM." The last reported sale price for our common stock on the Nasdaq National Market on July 1, 2002 was $1.59 per share.

We will provide the specific terms of the offering in supplements to this prospectus. You should read this prospectus and any supplement carefully before you invest. This prospectus may not be used to offer and sell our common stock unless accompanied by a prospectus supplement.

The securities offered hereby involve a high degree of risk.
See "Risk Factors" beginning on page 2.

These securities have not been approved or disapproved by the Securities and Exchange Commission or any state securities commission nor has the Securities and Exchange Commission or any state securities commission passed upon the accuracy or adequacy of this Prospectus. Any representation to the contrary is a criminal offense.

The date of this Prospectus is July 3, 2002.

TABLE OF CONTENTS

ABOUT THIS PROSPECTUS

This prospectus is part of a registration statement that we have filed with the Securities and Exchange Commission under a "shelf" registration process. Under this shelf process, we may sell any number of shares of common stock in one or more offerings up to a total number of shares of 15,000,000. Each time we offer common stock, we will provide a prospectus supplement that will describe the specific terms of the offering. The prospectus supplement and any pricing supplement may also add to, update or change the information contained in this prospectus. Please carefully read this prospectus, the prospectus supplement and any pricing supplement, in addition to the information contained in the documents we refer to under the heading "Where You Can Find More Information."

EXECUTIVE OFFICE

Our principal executive office is located at 3155 Porter Drive, Palo Alto, California 94304 and our telephone number is (650) 475-3100. We maintain a website on the Internet at WWW.STEMCELLSINC.COM. Our website, and the information contained therein, is not a part of this prospectus.

RISK FACTORS

The offering involves a high degree of risk. You should carefully consider the risks described below and the other information in this Prospectus before making an investment decision regarding StemCells, Inc. Our business, financial condition or results of operations could be materially adversely affected if any of these risks actually occur. Consequentially, the trading price of our common stock could decline, resulting in the loss of all or part of your investment.

Our technology is at an early stage of discovery and development, and we may fail to develop any commercially acceptable products.

Our stem cell technology is at the early pre-clinical stage for the brain stem cell and at the discovery phase for the liver and pancreas stem cells and has not yet led to the development of any product. We may fail to discover the stem cells we are seeking, to develop any products, to obtain regulatory approvals, to enter clinical trials, or to commercialize any products. Any product using stem cell technology may fail to:

- survive and persist in the desired location;
- provide the intended therapeutic benefits;
- properly integrate into existing tissue in the desired manner; or
- achieve therapeutic benefits equal to or better than the standard of treatment at the time of testing.

In addition, our products may cause undesirable side effects. Results of early pre-clinical research may not be indicative of the results that will be obtained in later stages of pre-clinical or clinical research. If regulatory authorities do not approve our products, or if we fail to maintain regulatory compliance, we would have limited ability to commercialize our products, and our business and results of operations would be harmed. Furthermore, because stem cells are a new form of therapy, the marketplace may not accept any products we may develop.

If we do succeed in developing products, we will face many potential obstacles such as the need to obtain regulatory approvals, and to develop or obtain manufacturing, marketing and distribution capabilities. In addition, we will face substantial additional risks such as product liability.

We have payment obligations resulting from real property owned or leased by un in Rhode Island, which diverts funding from our stem cell research and development.

Prior to our reorganization in 1999 and the consolidation of our business in California, we carried out our encapsulated cell therapy programs in Lincoln, Rhode Island, where we also had our administrative offices. Although we have vacated the Rhode Island facilities, we remain obligated to make lease payments and payments for operating costs of approximately $1,200,000 per year for our former science and administrative facility, which we have leased through June 30, 2013, and debt service payments and payments for operating costs of approximately $1,000,000 per year for our former encapsulated cell therapy pilot manufacturing facility, which we own. We have currently subleased a portion of the science and administrative facility, but cannot be sure that we will be able to do so for the entire duration of our obligation. We are seeking to sublease the remaining portion of the science and administrative facility. We have currently subleased the entire pilot manufacturing facility, but may not be able to sublease or sell the facility in the future once the current sublease agreements expire. These continuing costs significantly

reduce our cash resources and adversely affect our ability to fund further development of our stem cell technology.

We may need but fail to obtain partners to support our stem cell development efforts and to commercialize our technology.

Equity and debt financings alone may not be sufficient to fund the cost of developing our stem cell technologies, and we may need to rely on our ability to reach partnering arrangements to provide financial support for our stem cell discovery and development efforts. In addition, in order to successfully develop and commercialize our technology, we may need to enter into a wide variety of arrangements with corporate sponsors, pharmaceutical companies, universities, research groups and others. While we have engaged, and expect to continue to engage, in discussions regarding such arrangements, we have not reached any agreement, and we may fail to obtain any such agreement on terms acceptable to us. Even if we enter into these arrangements, we may not be able to satisfy our obligations under them or renew or replace them after their original terms expire. Furthermore, these arrangements may require us to grant certain rights to third parties, including exclusive marketing rights to one or more products, may require us to issue securities to our collaborators or may contain other terms that are burdensome to us. If any of our collaborators terminates its relationship with us or fails to perform its obligations in a timely manner, the development or commercialization of our technology and potential products may be adversely affected.

We have a history of operating losses and we may fail to obtain revenues or become profitable.

We expect to continue to incur substantial operating losses in the future in order to conduct our research and development activities, and, if those activities are successful, to fund clinical trials and other expenses. These expenses include the cost of acquiring technology, product testing, acquiring regulatory approvals, establishing production, marketing, sales and distribution programs and administrative expenses. We have not earned any revenues from sales of any product. All of our past revenues have been derived from, and any revenues we may obtain for the foreseeable future are expected to be derived from, cooperative agreements, research grants, investments and interest on invested capital. We currently have no cooperative agreements and we have received only two research grants for our stem cell technology, and we may not obtain any such agreements or additional grants in the future or receive any revenues from them.

If we are unable to protect our patents and proprietary rights, our business, financial condition and results of operation will be harmed.

We own or license a number of patents and pending patent applications covering human nerve stem cell cultures, central nervous system stem cell cultures, neuroblast cultures, peripheral nervous system stem cell cultures, and an animal model for liver failure. Patent protection for products such as those we propose to develop is highly uncertain and involves complex and continually evolving factual and legal questions. The governmental authorities that consider patent applications can deny or significantly reduce the patent coverage requested in an application before or after issuing the patent. Consequently, we do not know whether any of our pending applications will result in the issuance of patents, or if any existing or future patents will provide sufficient protection or significant commercial advantage or if others will circumvent these patents. We cannot be certain that we were the first to make the inventions covered by each of our pending patent applications or that we were the first to file patent applications for such inventions because patent applications are secret until patents are issued in the United States or until the applications are published in foreign countries, and because publication of discoveries in the scientific or patent literature often lags behind actual discoveries. Patents may not issue from our pending or future patent applications or, if issued, may not be of commercial benefit to us, or may not afford us adequate protection from competing products. In addition, third parties may challenge our patents or governmental authorities may declare them invalid. In the event that a third party has also filed a patent application relating to inventions claimed in our patent applications, we may have to participate in proceedings to determine priority of invention. This could result in substantial uncertainties and cost for us, even if the eventual outcome is favorable to us, and the outcome might not be favorable to us. Even if a patent issues, a

court could decide that the patent was issued invalidly. Further, patents issue for a limited term and our patents may expire before we utilize them profitably.

Proprietary trade secrets and unpatented know-how are also important to our research and development activities. We cannot be certain that others will not independently develop the same or similar technologies on their own or gain access to our trade secrets or disclose such technology, or that we will be able to meaningfully protect our trade secrets and unpatented know-how and keep them secret. We require our employees, consultants, and significant scientific collaborators and sponsored researchers to execute confidentiality agreements upon the commencement of an employment or consulting relationship with us. These agreements may, however, fail to provide meaningful protection or adequate remedies for us in the event of unauthorized use, transfer or disclosure of such information or inventions.

If others are first to discover and patent the stem cells we are seeking to discover, we could be blocked from further work on those stem cells.

Because the first person or entity to discover and obtain a valid patent to a particular stem or progenitor cell may effectively block all others, it will be important for us or our collaborators to be the first to discover any stem cell that we are seeking to discover. Failure to be the first could prevent us from commercializing all of our research and development affected by that patent.

If we are unable to obtain necessary licenses to third party patents and other rights, we may not be able to commercially develop our expected products.

A number of pharmaceutical, biotechnology and other companies, universities and research institutions have filed patent applications or have received patents relating to cell therapy, stem cells and other technologies potentially relevant to or necessary for our expected products. We cannot predict which, if any, of the applications will issue as patents. If third party patents or patent applications contain claims infringed by our technology and these claims are valid, we may be unable to obtain licenses to these patents at a reasonable cost, if at all, and may also be unable to develop or obtain alternative technology. If we are unable to obtain such licenses at a reasonable cost, our business could be significantly harmed.

We have obtained rights from universities and research institutions to technologies, processes and compounds that we believe may be important to the development of our products. Licensors may cancel our licenses or convert them to non-exclusive licenses if we fail to use the relevant technology or otherwise breach these agreements. Loss of these licenses could expose us to the risks of third party patents and/or technology. We can give no assurance that any of these licenses will provide effective protection against our competitors.

We compete with companies that have significant advantages over us.

The market for therapeutic products that address degenerative diseases is large and competition is intense. For example, while we believe that our neural stem cells may have application to Parkinson’s disease, we have no clinical program directed toward that disease at this time. More than twenty companies worldwide, including Merck, Roche, Cephalon, Schering AG, Pharmacia Corp., and Genzyme have at least one clinical trial for Parkinson’s disease in progress at some phase, and some have more than one. At least seven companies already have products on the market. We expect competition to increase.

In general, we believe that our most significant competitors will be fully integrated pharmaceutical companies and more established biotechnology companies, such as Biogen, Inc. and Genzyme, an Elan Corporation. These companies already produce or are developing treatments for degenerative diseases that are not stem cell-based, and they have significantly greater capital resources and expertise in research and development, manufacturing, testing, obtaining regulatory approvals and marketing than we do. Many of these potential competitors have significant products approved or in development that could be competitive with our potential products, and also operate large, well-funded research and development programs. In addition, we expect to compete with other companies, some of which are smaller and may be privately owned, including CellFactors, Diacrin, Geron, Layton Bioscience, NeuralStem Biopharmaceuticals,

NeuroNova, and ReNeuron, and with universities and other research institutions who are developing treatments for degenerative diseases that are stem cell-based.

Our competitors may succeed in developing technologies and products that are more effective than the ones we are developing, or that would render our technology obsolete or non-competitive.

The relative speed with which we and our competitors can develop products, complete the clinical testing and approval processes, and supply commercial quantities of a product to market will affect our ability to gather market acceptance and market share. With respect to clinical testing, competition may delay progress by limiting the number of clinical investigators and patients available to test our potential products.

Development of our technology is subject to and restricted by extensive government regulation which could impede our business.

Our research and development efforts, as well as any future clinical trials, and the manufacturing and marketing of any products we may develop, will be subject to and restricted by extensive regulation by governmental authorities in the United States and other countries. The process of obtaining U.S. Food and Drug Administration and other necessary regulatory approvals is lengthy, expensive and uncertain. We or our collaborators may fail to obtain the necessary approvals to commence or continue clinical testing or to manufacture or market our potential products in reasonable time frames, if at all. In addition, the U.S. Congress and other legislative bodies may enact regulatory reforms or restrictions on the development of new therapies that could adversely affect the regulatory environment in which we operate or the development of any products we may develop.

We base our research and development on the use of human stem and progenitor cells obtained from fetal tissue. The federal and state governments and other jurisdictions impose restrictions on the use of fetal tissue. These restrictions change from time to time and may become more onerous. Additionally, we may not be able to identify or develop reliable sources for the cells necessary for our potential products—that is, sources that follow all state and federal guidelines for cell procurement. Further, we may not be able to obtain such cells in the quantity or quality sufficient to satisfy the commercial requirements of our potential products. As a result, we may be unable to develop or produce our products in a profitable manner.

Although we do not use embryonic stem cells, government regulation and threatened regulation of embryonic tissue may lead outstanding researchers to leave the field of stem cell research, or the country, in order to assure that their careers will not be impeded by restrictions on their work. Similarly, these factors may induce the best graduate students to choose other fields less vulnerable to changes in regulatory oversight, thus exacerbating the risk, discussed below, that we may not be able to attract and retain the scientific personnel we need in face of the competition among pharmaceutical, biotechnology and health care companies, universities and research institutions for what may become a shrinking class of qualified individuals. In addition, we cannot assure you that constraints on use of embryonic stem cells will not be extended to use of fetal stem cells. Moreover, it is possible that concerns regarding research using embryonic stem cells will impact our ability to attract collaborators and investors and our stock price. We may apply for status under the Orphan Drug Act for some of our therapies to gain a seven year period of marketing exclusivity for those therapies. The U.S. Congress in the past has considered, and in the future again may consider, legislation that would restrict the extent and duration of the market exclusivity of an orphan drug. If enacted, such legislation could prevent us from obtaining some or all of the benefits of the existing statute even if we were to apply for and be granted orphan drug status with respect to a potential product.

If we lose the services of key personnel or are unable to attract and retain additional qualified personnel, we may have to delay, reduce or eliminate some or all of our research and development programs.

We are highly dependent on the principal members of our management and scientific staff and some of our outside consultants, including the members of our scientific advisory board, our chief executive officer, our vice president and the directors of our neural stem cell and liver stem cell programs. Although we have entered into employment agreements with some of these individuals, they may terminate their agreements at any time. In addition, our operations are dependent upon our ability to attract and retain additional qualified scientific and management personnel. We may not be able to attract and retain the personnel we need on acceptable terms given the competition for experienced personnel among pharmaceutical, biotechnology and health care companies, universities and research institutions.

Since health care insurers and other organizations may not pay for our products or may impose limits on reimbursements, our ability to become profitable could be reduced.

In both domestic and foreign markets, sales of potential products are likely to depend in part upon the availability and amounts of reimbursement from third party health care payor organizations, including government agencies, private health care insurers and other health care payors, such as health maintenance organizations and self-insured employee plans. There is considerable pressure to reduce the cost of therapeutic products, and government and other third party payors are increasingly attempting to contain health care costs by limiting both coverage and the level of reimbursement for new therapeutic products, and by refusing, in some cases, to provide any coverage for uses of approved products for disease indications for which the U.S. Food and Drug Administration has not granted marketing approval. Significant uncertainty exists as to the reimbursement status of newly approved health care products. We can give no assurance that reimbursement will be provided by such payors at all or without substantial delay, or, if such reimbursement is provided, that the approved reimbursement amounts will be sufficient to enable us to sell products we develop on a profitable basis. Changes in reimbursement policy could also adversely affect the willingness of pharmaceutical companies to collaborate with us on the development of our stem cell technology.

In certain foreign markets, pricing or profitability of prescription pharmaceuticals is subject to government control. We also expect that there will continue to be a number of federal and state proposals to implement government control over health care costs. Efforts at health care reform are likely to continue in future legislative sessions. We do not know what legislative proposals federal or state governments will adopt or what actions federal, state or private payers for health care goods and services may take in response to health care reform proposals or legislation. We cannot predict the effect government control and other health care reforms may have on our business.

We have limited liquidity and capital resources and may not obtain the significant capital resources we will need to sustain our research and development efforts.

We have limited liquidity and capital resources and must obtain substantial additional capital to support our research and development programs, for acquisition of technology and intellectual property rights, and, to the extent we decide to undertake these activities ourselves, for pre-clinical and clinical testing of our anticipated products, pursuit of regulatory approvals, establishment of production capabilities, establishment of marketing and sales capabilities and distribution channels, and general administrative expenses. If we do not obtain the necessary capital resources, we may have to delay, reduce or eliminate some or all of our research and development programs or license our technology or any potential products to third parties rather than commercializing them ourselves.

If we are unable to draw down on our existing equity line or choose not to do so, we intend to pursue our needed capital resources through equity and debt financings, corporate alliances, grants and collaborative research arrangements. We may fail to obtain the necessary capital resources from any such sources when needed or on terms acceptable to us. Our ability to complete any such arrangements successfully will depend upon market conditions and, more specifically, on continued progress in our research and development efforts. We are prohibited from entering into other stand-by equity based credit facilities during the term of the common stock purchase agreement that governs our existing equity line.

If our common stock price drops significantly, we may be delisted from the Nasdaq National Market, which could eliminate the trading market for our Common Stock.

Our common stock is quoted on the Nasdaq National Market. In order to continue to be included in the Nasdaq National Market, a company must meet Nasdaq's maintenance criteria. The maintenance criteria most applicable to us requires a minimum bid price of $1.00 per share and $5,000,000 market value of publicly held shares. Additionally, we must maintain either $10 million in stockholders' equity or $4 million in net tangible assets. After November 1, 2002, the net tangible asset maintenance criterion will no longer apply and we must satisfy the stockholders' equity maintenance criterion. Stockholders' equity is composed of three fundamental sources: capital stock, additional paid-in-capital, and retained earnings. Capital stock represents ownership interest in the corporation. Additional paid-in-capital represents additional monies paid into the corporation by investors above the par value of shares issued. Retained earnings represents income (loss) that the corporation has accumulated as a result of its day-to-day operating activities. Our stockholders' equity at the end of 2001 was $13,207,807. Failure to meet these maintenance criteria may result in the delisting of our common stock from the Nasdaq National Market. If our common stock were delisted, in order to have our common stock relisted on the Nasdaq National Market we would be required to meet the criteria for initial listing, which are more stringent than the maintenance criteria. Accordingly, we cannot assure you that if we were delisted we would be able to have our common stock relisted on the Nasdaq National Market.

If our common stock were delisted from the Nasdaq National Market, we would not be able to draw down any additional funds on our existing equity line, and we also may be required to pay damages to holders of our common stock under agreements we previously entered into with them in connection with equity financings. Finally, if our common stock were removed from listing on the Nasdaq National Market, it might become more difficult for us to raise funds through the sale of our common stock or securities convertible into our common stock.

The sale and issuance of the 3% and 6% cumulative convertible redeemable preferred stock will have an impact to earnings available to common stockholders.

Of the proceeds from our sale of the 3% and 6% cumulative convertible redeemable preferred stock, approximately $3.1 million will be allocated to the common stock warrants and the conversion feature included with the subscription agreement, and will be reflected as an increase to additional paid-in capital and a decrease to the 3% and 6% cumulative convertible redeemable preferred stock. This $3.1 million will be accreted to the preferred stock over the term of the redemption period. This accretion, along with the preferred stock dividend, will increase the net loss (reduce the net income) available to common stockholders.

SPECIAL NOTE REGARDING FORWARD-LOOKING INFORMATION

This prospectus contains forward-looking statements within the meaning of Section 27A of the Securities Act and Section 21E of the Securities Exchange Act that involve substantial risks and uncertainties. You can identify these statements by forward-looking words such as "anticipate," "believe," "could," "estimate," "expect," "intend," "may," "should," "will," and "would" or similar words. You should carefully read statements that contain these words because they discuss our future expectations, contain projections of our future results of operations or of our financial position or state other "forward-looking" information. We believe that it is important to communicate our future expectations to our investors. However, there may be events in the future that we are not able to accurately predict or control. The factors listed above in the section captioned "Risk Factors," as well as any cautionary language in this prospectus, provide examples of risks, uncertainties and events that may cause our actual results to differ materially from the expectations we describe in our forward-looking statements. Before you invest, you should be aware that the occurrence of the events described in these risk factors and elsewhere in this prospectus could have a material adverse effect on our business, results of operations and financial position.

USE OF PROCEEDS

Unless we inform you otherwise in a prospectus supplement or any pricing supplement, we expect to use the net proceeds from any and all offerings of the common stock registered hereunder for general corporate purposes, including working capital, product development and capital expenditures. A portion of the net proceeds may also be used for the acquisition of businesses, products and technologies that are complementary to ours. There are currently no commitments or agreements with respect to any such material acquisition.

PLAN OF DISTRIBUTION

We may offer the common stock covered by this prospectus in and outside the United States by one or more of, or a combination of, the following methods:

- through agents to the public or to investors;
- to underwriters for resale to the public or to investors;
- directly to investors;
- in payment of all or a portion of the purchase price from one or more acquisitions of companies, businesses or assets complementary to our existing business; or
- as consideration for rights for us to use third party technologies pursuant to one or more license, development or other similar agreements.
- We will set forth in a prospectus supplement the terms of the offering of securities, including:
- the name or names of any agents or underwriters;
- the purchase price of the securities being offered and the proceeds we will receive from the sale;
- any over-allotment options under which underwriters may purchase additional securities from us;
- any agency fees or underwriting discounts and other items constituting agents' or underwriters' compensation;
- any initial public offering price;
- any discounts or concessions allowed or reallowed or paid to dealers; and
- any securities exchanges on which such securities may be listed.

Sale through agents

We may designate agents to solicit purchases for the period of the agent's appointment or to sell the common stock on a continuing basis. Unless we inform you otherwise in the applicable prospectus supplement, any agent will agree to use its reasonable best efforts to solicit purchases for the period of the agent's appointment.

Sale through underwriters or dealers

If we use underwriters for a sale of the common stock, the underwriters will acquire the common stock for their own account. The underwriters may resell the common stock in one or more transactions,

including negotiated transactions, at a fixed public offering price or at varying prices determined at the time of sale. The obligations of the underwriters to purchase the common stock will be subject to the conditions set forth in the applicable underwriting agreements. The underwriters will be obligated to purchase all the offered common stock if they purchase any of the offered common stock. The underwriters may from time to time change any public offering price and any discounts or concessions allowed or reallowed or paid to dealers. We may use underwriters with whom we have a material relationship. We will describe in the prospectus supplement which names the underwriter the nature of any such relationship.

If we use dealers in the sale of common stock, we will sell the common stock to the dealers as principals. They may then resell that common stock to the public at varying prices determined by the dealers at the time of resale. The dealers participating in any sale of our common stock may be deemed to be underwriters within the meaning of the Securities Act with respect to any sale of that common stock.

Compensation of underwriters, dealers and agents

Underwriters, dealers and agents that participate in the distribution of the common stock may be underwriters as defined in the Securities Act and any discounts or commissions they receive from us, as well as any profit on their resale of the common stock, may be treated as underwriting discounts and commissions under the Securities Act. We will identify in the applicable prospectus supplement any underwriters, dealers or agents and will describe their compensation. We may have agreements with the underwriters, dealers or agents to indemnify them against specified civil liabilities, including liabilities under the Securities Act. Underwriters, dealers and agents may engage in transactions with or perform services for us or our subsidiaries in the ordinary course of their businesses.

Direct sales

We may sell the common stock directly. In that event, no underwriters or agents would be involved. We may sell the common stock directly to institutional investors or others who may be deemed to be underwriters within the meaning of the Securities Act with respect to any sale of that common stock.

Delayed delivery contracts

If we so indicate in a prospectus supplement, we may authorize underwriters, dealers or agents to solicit offers from selected types of institutions to purchase common stock from us at the public offering price under delayed delivery requirements. These contracts would provide for payment and delivery on a specified date in the future. Institutions with which such contracts may be made include commercial and savings banks, insurance companies, pension funds, investment companies, educational and charitable institutions and others. The contracts would be subject only to those conditions described in the prospectus supplement. The applicable prospectus supplement relating to such contracts will set forth the price to be paid for common stock under the contracts, the commission payable for solicitation of the contracts and the date or dates in the future for delivery of the common stock under the contracts.

Stabilization activities

During and after an offering through underwriters, the underwriters may purchase and sell the common stock in the open market. These transactions may include overallotment and stabilizing transactions and purchases to cover syndicate short positions created in connection with the offering. The underwriters may also impose a penalty bid, in which selling concessions allowed to syndicate members or other broker-dealers for the offered common stock sold for their account may be reclaimed by the syndicate if the offered common stock is repurchased by the syndicate in stabilizing or covering transactions. These activities may stabilize, maintain or otherwise affect the market price of the offered common stock, which may be higher than the price that might otherwise prevail in the open market. If commenced, these activities may be discontinued at any time.

Passive market making

Any underwriters who are qualified market makers on the NASDAQ National Market may engage in passive market making transactions in the common stock on the Nasdaq National Market in accordance with Rule 103 of Regulation M, during the business day prior to the pricing of the offering, before the commencement of offers or sales of the securities. Passive market makers must comply with applicable volume and price limitations and must be identified as passive market makers. In general, a passive market maker must display its bid at a price not in excess of highest independent bid for the security; if all independent bids are lowered below the passive market maker's bid, however, the passive market maker's bid then must be lowered when certain purchase limits are exceeded.

Acquisitions

We may offer the common stock in payment of all or a portion of the purchase price from one or more acquisitions of companies, businesses or assets complementary to our existing business. We expect that the terms of acquisitions in which the common stock would be issued by us would be determined by negotiations between us and the owners of the companies, businesses or assets we intend to acquire. It is anticipated that the common stock issued in any such acquisition would be valued for purposes of the acquisition at a price reasonably related to the market value of the common stock either at the time of the execution of the definitive acquisition agreement or at the time of the consummation of the acquisition.

License, development or other similar agreements

We may offer the common stock as consideration for rights for us to use third party technologies pursuant to one or more license, development or other similar agreements. We expect that the terms of those agreements would be determined by negotiations between us and the other party or parties to a particular agreement. The common stock issued as part of any such agreement would be valued for purposes of the agreement at a price reasonably related to the market value of the common stock either at the time of the signing of the agreement, or such other date as the agreement stipulates.

LEGAL MATTERS

The validity of the shares of our common stock offered hereby will be passed upon for us by Ropes & Gray, Boston, Massachusetts.

EXPERTS

Ernst & Young LLP, independent auditors, have audited our consolidated financial statements included in our Annual Report on Form 10-K for the year ended December 31, 2001, as set forth in their report, which is incorporated by reference in this prospectus and elsewhere in the registration statement. Our financial statements are incorporated by reference in reliance on Ernst & Young LLP's report, given on their authority as experts in accounting and auditing.

WHERE YOU CAN FIND MORE INFORMATION

We have filed with the SEC a registration statement on Form S-3 under the Securities Act with respect to the common stock to be sold in this offering. This prospectus does not contain all the information included in the registration statement and the related exhibits and schedules. You will find additional information about us and our common stock in the registration statement. The registration statement and the related exhibits and schedules may be inspected and copied at the public reference facilities maintained by the SEC at Room 1024, Judiciary Plaza, 450 Fifth Street, N.W., Washington, D.C. 20549, and at the public reference facilities of the SEC's Regional Offices: New York Regional Office, Seven World Trade Center, Suite 1300, New York, New York 10048; and Chicago Regional Office, Citicorp Center, 500 West Madison Street, Chicago, Illinois 60661. Copies of this material may also be obtained from the Public Reference Section of the SEC at 450 Fifth Street, N.W., Washington, D.C. 20549 at prescribed rates. You can obtain information on the operation of the public reference facilities by calling 1-800-SEC-0330. The SEC also maintains a site on the World Wide Web (http://www.sec.gov) that contains reports, proxy and

information statements and other information regarding registrants, including us, that file electronically with the SEC. Statements made in this prospectus about legal documents may not necessarily be complete and you should read the documents which are filed as exhibits or schedules to the registration statement or otherwise filed with the SEC.

INCORPORATION OF DOCUMENTS BY REFERENCE

The SEC allows us to incorporate by reference the information we file with it, which means that we can disclose information important to you by referring you to those documents. The information incorporated by reference is considered to be a part of this prospectus, and information that we later file with the SEC will automatically update and supersede this information. Accordingly, we incorporate by reference the following documents we filed with the SEC pursuant to Section 13 of the Securities Exchange Act of 1934:

- our Annual Report on Form 10-K for the year ended December 31, 2001 (filed March 7, 2002);
- our Quarterly Report on Form 10-Q for the quarter ended March 31, 2002 (filed May 3, 2002);
- the description of our common stock contained in the registration statement on Form 8-A filed with the SEC pursuant to Section 12 of the Securities Exchange Act of 1934 and all amendments thereto and reports filed for the purpose of updating such description; and
- all documents filed by us with the SEC pursuant to the Securities Exchange Act of 1934 after the date of this prospectus and before the offering of common stock is completed (other than portions of such documents described in paragraphs (i), (k) and (l) of Item 402 of Regulation S-K promulgated by the SEC).

These documents are or will be available for inspection or copying at the locations identified above under the caption “Where You Can Find More Information.” We will provide without charge to each person to whom this prospectus is delivered, upon written or oral request, a copy of any and all of the documents that have been incorporated by reference in this prospectus (other than exhibits to those documents). You should direct requests for documents to:

StemCells, Inc.
3155 Porter Drive
Palo Alto, CA 94304
Attention: Investor Relations
Telephone number: (650) 475-3100