ADVANCED CELL TECHNOLOGY, INC.
Form 424B3
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Under the Securities Act of 1933, as amended
Registration No. 333- 162435

PROSPECTUS
ADVANCED CELL TECHNOLOGY, INC.
192,148,119 Shares of Common Stock

This prospectus relates to the public offering of up to 192,148,119 shares of common stock, par value $.001 per share, of Advanced Cell Technology, Inc. (“Common Stock”), by the selling stockholders. These shares are issuable to the selling stockholders upon exercise of warrants which were issued to the selling stockholders in private placements in September 2005, August 2006, August 2007, and March 2008, and were amended and restated on July 29, 2009 (as amended and restated, the “Amended and Restated Warrants”). The Amended and Restated Warrants have an exercise price of $0.10 and a termination date of June 30, 2014.

The selling stockholders may sell Common Stock from time to time in the principal market on which the stock is traded at the prevailing market price or in negotiated transactions.

We will not receive any of the proceeds from the sale of Common Stock by the selling stockholders. We will pay the expenses of registering these shares.

Investment in the Common Stock involves a high degree of risk. You should consider carefully the risk factors beginning on page 7 of this prospectus before purchasing any of the shares offered by this prospectus.

Our common stock is quoted on the Over-the-Counter Bulletin Board and trades under the symbol "ACTC". The last reported sale price of our common stock on the Over-the-Counter Bulletin Board on October 7, 2009, was approximately $0.12 per share.

We may amend or supplement this prospectus from time to time by filing amendments or supplements as required. You should read the entire prospectus and any amendments or supplements carefully before you make your investment decision.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or determined if this prospectus is truthful or complete. Any representation to the contrary is a criminal offense.

The date of this prospectus is October 23, 2009.

This prospectus is not an offer to sell these securities and is not soliciting an offer to buy these securities in any state where the offer or sale is not permitted.

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You may only rely on the information contained in this prospectus or that we have referred you to. We have not authorized anyone to provide you with different information. This prospectus does not constitute an offer to sell or a solicitation of an offer to buy any securities other than the common stock offered by this prospectus. This prospectus does not constitute an offer to sell or a solicitation of an offer to buy any common stock in any circumstances in which such offer or solicitation is unlawful. Neither the delivery of this prospectus nor any sale made in connection with this prospectus shall, under any circumstances, create any implication that there has been no change in our affairs since the date of this prospectus or that the information contained by reference to this prospectus is correct as of any time after its date.

Prospectus Summary

This summary highlights information contained elsewhere in this prospectus. You should read the entire prospectus carefully, including, the section entitled "Risk Factors" before deciding to invest in our common stock.

About Us

Advanced Cell Technology, Inc., a Delaware corporation (the “Company”, “we”, “us” or “our”) is a biotechnology company focused on developing and commercializing human embryonic and adult stem cell technology in the emerging field of regenerative medicine.

We have acquired, developed and maintain a portfolio of patents and patent applications that form the proprietary base for our research and development efforts in the area of embryonic and adult stem cell research. We believe that our intellectual property represents one of the strongest portfolios in the field. We employ a team including some of the world's leading scientists in the field of stem cell research and development and experts in the conduct of clinical trials. We believe our technology base, in combination with our know-how, provides a competitive advantage and will facilitate the successful development and commercialization of products for use in treatment of a wide array of chronic degenerative diseases and in regenerative repair of acute disease, such as trauma, myocardial infarction and burns.

Our belief that our intellectual property represents one of the strongest portfolios in the field is supported by:

- The size, date and pace of filing, and focus of the portfolio.
- The relative immaturity of this field of study.
- The limited number of truly competitive portfolios of intellectual property.

Regenerative medicine is a new and emerging field of study involving development of medical therapies based on advances in stem cell and nuclear transfer technology. We have developed and maintain a broad portfolio with ownership or exclusive licensing of over 45 issued patents and over 170 patent applications in the field of regenerative medicine and related technologies. This significant volume of patents and patent licenses has been developed in the short span of approximately the past seven to ten years.

The Company has no therapeutic products currently available for sale and does not expect to have any therapeutic products commercially available for sale for a period of years, if at all. These factors indicate that the Company’s ability to continue its research and development activities is dependent upon the ability of management to obtain additional financing as required.

We have incurred losses since inception. As of June 30, 2009, we have an accumulated deficit of $138,254,284 and a stockholders’ deficit of $73,810,017. We incurred net losses of $29,436,804 and $48,436,680 for the three and six months ended June 30, 2009, respectively, and $33,903,513 and $15,898,725 for the years ended December 31, 2008 and 2007, respectively.

In our auditors' report dated July 2, 2009, they have expressed substantial doubt about our ability to continue as a going concern.

Our executive offices are located at 381 Plantation Street, Worcester, MA 01605. Our website is located at www.advancedcell.com, and our telephone number is 508-756-1212.

Recent Developments

On July 29, 2009, we entered into a consent, amendment and exchange agreement (the "Consent and Amendment") with holders (the "Holders") of the Company's outstanding convertible debentures in the aggregate outstanding principal amount of $20,353,878 (the "Debentures") and warrants to purchase an aggregate of 192,148,119 shares of the Company's common stock (the "Warrants"), which were issued in private placements that closed in September 2005, August 2006, August 2007, and March 2008.

Simultaneously with the execution of Consent and Amendment, and as a condition of the Consent and Amendment, the Company and the Holders entered into a Standstill and Forbearance Agreement (the "Forbearance Agreement"). Pursuant to the Forbearance Agreement:

- The Company acknowledged certain defaults that have occurred under the Debentures and documents executed in connection therewith (the "Transaction Documents").

- The Holders agreed to forbear from exercising their rights and remedies under the Debentures and the Transaction Documents.

- The obligation of the Holders to forbear from exercising their rights and remedies under the Debentures and the Transaction Documents will terminate on the earliest of (i) the date, if any, on which a petition for relief under the date, if any, on which a petition for relief under the United States Bankruptcy Code or any similar state or Canadian law is filed by or against the Company or any of its subsidiaries or (ii) the date the Forbearance Agreement is otherwise terminated or expires, it being understood that the Holders holding 67% of the then outstanding principal amount of the Debentures shall have the right to terminate the Forbearance Agreement on 3 business days' prior notice to the Company.

- The Company provided a general release in favor of the Holders.

Pursuant to the Consent and Amendment:

- The Company agreed to issue to each Holder in exchange for such Holder's Debenture an amended and restated Debenture (the "Amended and Restated Debentures") in a principal amount equal to the principal amount of such Holder's Debenture times 1.35 minus any interest paid thereon.

- The conversion price under the Amended and Restated Debentures was reduced to $0.10, subject to further adjustment as provided therein (including for stock splits, stock dividends, and certain subsequent equity sales).

- The maturity date under the Amended and Restated Debentures was extended until December 31, 2010.

- The Amended and Restated Debentures bear interest at the rate of 12% per annum, which shall accrete to, and increase the principal amount payable upon maturity.

- The Amended and Restated Debentures will begin to amortize on September 25, 2009 at a rate of 6.25% of the outstanding principal amount per month, valued at the lesser of the then conversion price and 90% of the average volume weighted average price for the ten prior trading days.

- The Warrants were amended and restated (as amended and restated, the "Amended and Restated Warrants").

- The exercise price under the Amended and Restated Warrants was reduced to $0.10 subject to further adjustment as provided therein (including for stock splits, stock dividends, and certain subsequent equity sales).

- The termination date under the Amended and Restated Warrants was extended until June 30, 2014.

- Each Holder agreed not to convert more than 20% of such Holder's outstanding principal amount of Amended and Restated Debenture in any month during the period from September 1, 2009 through January 31, 2010, provided, however, that this limitation will terminate if (i)(a) the volume weighted average price of the Company's common stock for each of 5 consecutive trading days is greater than $0.15 per share, and (b) the trading volume on such days exceeds 7,500,000 shares per trading day, or (ii)(a) the volume weighted average price for any one trading day is greater than $0.20 per share and (b) the trading volume on such day exceeds 10,000,000 shares.

- The Company agreed to amend the Company's articles of incorporation to increase the number of authorized shares of Common Stock (the "Amendment"). The Amendment was effected in accordance with the Consent and Amendment on September 15, 2009.

- The Company agreed to increase the number of shares available for issuance under the Company's 2005 Stock Incentive Plan to 129,000,000 shares, by September 18, 2009. The amendment to the 2005 Stock Incentive Plan was timely effected on September 10, 2009.

- The Holders agreed to waive any event of default under the Debentures resulting solely from (i) any adjustment to the conversion price of the Debenture and exercise price of the Warrants that would result from the reduction of the conversion price of certain securities of the Company pursuant to the Stipulation of Settlement, dated March 11, 2009, between the Company and Alpha Capital, and (ii) any failure by the Company to reserve such number of authorized but unissued shares of common stock issuable upon conversion of the Debentures and exercise of the Warrants.

In connection with the foregoing, the Company relied upon the exemption from securities registration afforded by Rule 506 of Regulation D as promulgated by the United States Securities and Exchange Commission under the Securities Act of 1933, as amended (the "Securities Act") and/or Section 4(2) of the Securities Act. No advertising or general solicitation was employed in offering the securities. The offerings and sales were made to a limited number of persons, all of whom were accredited investors, and transfer was restricted by the Company in accordance with the requirements of the Securities Act of 1933.

About This Offering

This prospectus includes the 192,148,119 shares of the Company's common stock issuable upon exercise of the Amended and Restated Warrants.

Estimated use of proceeds

This prospectus relates to shares of our Common Stock that may be offered and sold from time to time by the selling stockholders. We will not receive any of the proceeds resulting from the sale of Common Stock by the selling stockholders. We will receive the sale price of any Common Stock we sell to the selling stockholders upon exercise of warrants for cash. If all of the warrants the underlying are shares of which are included in this prospectus are exercised for cash, we will receive $19,214,811.90. There is no assurance that any of the warrants will be exercised. We expect to use the proceeds received from the exercise of the warrants, if any, for general working capital purposes.

Summary of the Shares offered by the Selling Stockholders.

The following is a summary of the shares being offered by the selling stockholders:

Common Stock offered by the selling stockholders	Up to 192,148,119 shares of Common Stock issuable upon exercise of warrants.
Common Stock outstanding prior to the offering	501,905,641 (1)
Common Stock to be outstanding after the offering	694,053,760 assuming the full exercise of the warrants the underlying shares of which are included in this prospectus.
Use of proceeds	We will not receive any proceeds from the sale of the Common Stock hereunder.

(1) Based upon the total number of issued and outstanding shares as of September 23, 2009.

RISK FACTORS

An investment in the Company's common stock involves a high degree of risk. You should carefully consider the risks described below as well as other information provided to you in this prospectus, including information in the section of this document entitled "Forward Looking Statements." The risks and uncertainties described below are not the only ones facing us. Additional risks and uncertainties not presently known to us or that we currently believe are immaterial may also impair our business operations. If any of the following risks actually occur, our business, financial condition or results of operations could be materially adversely affected, the value of our common stock could decline, and you may lose all or part of your investment.

Risks Relating to the Company's Early Stage of Development

We may not be able to continue as a going concern.

Our consolidated financial statements have been prepared on a going concern basis, which contemplates the realization of assets and the satisfaction of liabilities in the normal course of business. We have a history of operating losses that are likely to continue in the future. Our auditors have included an explanatory paragraph in their Report of Independent Registered Public Accounting Firm included in our audited consolidated financial statements for the

years ended December 31, 2008 and 2007 to the effect that our significant losses from operations and our dependence on equity and debt financing raise substantial doubt about our ability to continue as a going concern. Our consolidated financial statements do not include any adjustments that might be necessary should we be unable to continue as a going concern.

Our business is at an early stage of development and we may not develop therapeutic products that can be commercialized.

We do not yet have any product candidates in late-stage clinical trials or in the marketplace. Our potential therapeutic products will require extensive preclinical and clinical testing prior to regulatory approval in the United States and other countries. We may not be able to obtain regulatory approvals (see REGULATORY RISKS), enter clinical trials for any of our products, or commercialize any products. Our therapeutic and product candidates may prove to have undesirable and unintended side effects or other characteristics adversely affecting their safety, efficacy or cost-effectiveness that could prevent or limit their use. Any product using any of our technology may fail to provide the intended therapeutic benefits, or achieve therapeutic benefits equal to or better than the standard of treatment at the time of testing or production. In addition, we will need to determine whether any of our potential products can be manufactured in commercial quantities or at an acceptable cost. Our efforts may not result in a product that can be or will be marketed successfully. Physicians may not prescribe our products, and patients or third party payors may not accept our products. For these reasons we may not be able to generate revenues from commercial production.

We have limited clinical testing, regulatory, manufacturing, marketing, distribution and sales capabilities which may limit our ability to generate revenues.

Due to the relatively early stage of our therapeutic products, regenerative medical therapies and stem cell therapy-based programs, we have not yet invested significantly in regulatory, manufacturing, marketing, distribution or product sales resources. We cannot assure you that we will be able to invest or develop any of these resources successfully or as expediently as necessary. The inability to do so may inhibit or harm our ability to generate revenues or operate profitably.

We have limited capital resources and we may not obtain the significant additional capital required to sustain our research and development efforts.

We will need additional capital to conduct our operations and develop our products and our ability to obtain the necessary funding is uncertain. (see FINANCIAL RISKS) We have losses from operations, negative cash flows from operations and a substantial stockholders' deficit and we do not believe that our cash from all sources (including cash, cash equivalents, anticipated revenues from licensing fees and sponsored research contracts) is sufficient for us to continue operations beyond December 31, 2009.

Management continues to evaluate alternatives and sources of additional funding. These may include public and private investors, strategic partners, and grant programs available through specific states of foundations. However, there is no assurance that such sources will result in raising additional capital. Lack of necessary funding may require us to delay, scale back or eliminate some or all of our research and product development programs and/or capital expenditures, to license our potential products or technologies to third parties, to consider business combinations related to ongoing business operations, or to shut down some, or all, of our operations.

Additionally, our cash requirements may vary materially from our current projections due to unforeseen and unexpected results in product research and development, or changes in any of the following: potential relationships with strategic partners, the focus and direction of our research and development programs, the competitive landscape, litigation required to protect our technology, technological advances, the cost of pre-clinical and clinical testing, the regulatory process of the FDA (and of foreign regulators), among others. Our current cash reserves are not sufficient to fund our operations through the commercialization of our first products and/or services.

We have a history of operating losses and we may not achieve future revenues or operating profits.

We have generated modest revenue to date from our operations. Historically, we have had net operating losses each year since our inception. As of June 30, 2009, we have an accumulated deficit of $138,254,284 and a stockholders' deficit of $73,810,017. We incurred net losses of $29,436,804 and $48,436,680 for the three and six months ended June 30, 2009, respectively, and $33,903,513 and $15,898,725 for the years ended December 31, 2008 and 2007, respectively. We have limited current potential sources of income from licensing fees and the Company does not generate significant revenue outside of licensing non-core technologies. Additionally, even if we are able to commercialize our technologies or any products or services related to our technologies it is not certain that they will result in revenue or profitability.

We are in the early stages of a strategic joint venture which may slow, impede or result in the termination of potential therapeutic products whose development is now the responsibility of the partnership and not solely of the Company.

The Company has entered into a new partnership (CHA) and as a result, we are subject to 3rd party interests (see RISKS RELATED TO THIRD PARTY RELIANCE) and control issues, including with respect to certain of our employees no longer being exclusively managed by us. We therefore could be at risk for losing key employees. Additionally substantial operating and working capital will be required and there is no assurance that CHA Biotech

Co. limited, partner in our joint venture, will be able to fund their requirements.

We have a limited operating history on which investors may evaluate our operations and prospects for profitable operations.

If we continue to suffer losses as we have in the past, investors may not receive any return on their investment and may lose their entire investment. Our prospects must be considered speculative in light of the risks, expenses and difficulties frequently encountered by companies in their early stages of development, particularly in light of the uncertainties relating to the new, competitive and rapidly evolving markets in which we anticipate we will operate. To attempt to address these risks, we must, among other things, further develop our technologies, products and services, successfully implement our research, development, marketing and commercialization strategies, respond to competitive developments and attract, retain and motivate qualified personnel. A substantial risk is involved in investing in us because, as an early stage company we have fewer resources than an established company, our management may be more likely to make mistakes at such an early stage, and we may be more vulnerable operationally and financially to any mistakes that may be made, as well as to external factors beyond our control.

Risks Relating to Technology

We are dependent on new and unproven technologies.

Our risks as an early stage company are compounded by our heavy dependence on emerging and sometimes unproven technologies. If these technologies do not produce satisfactory results, our business may be harmed. Additionally some of our technologies and significant potential revenue sources involve ethically sensitive and controversial issues which could become the subject of legislation or regulations that could materially restrict our operations and, therefore, harm our financial condition, operating results and prospects for bringing our investors a return on their investment.

Over the last twelve months we have narrowed our potential product pool to focusing on our Retinal Program as well as the applications of our I.P.S. technology, which will limit our revenue sources.

Our human embryonic stem cell and regenerative medical therapy programs are in the pre-clinical stage and the Company doesn't foresee having a commercial product until clinical trials are completed. We have identified the programs that we are working to get into the clinical testing phase. We have narrowed the scope of our developmental focus to our Retinal Program and those related therapies, focusing our products related to our I.P.S. technology and, as part of our recently established partnership with CHA, developing products in the Hemangioblast/immunology arena. (see DESCRIPTION OF BUSINESS Section of prospectus). As a result of our narrower product focus, we have fewer revenue sources. Our emphasis on fewer programs may hinder our results if these programs are not successful. Although our adult stem cell myoblast program has completed Phase I and Ib FDA clinical trials we have suspended that program indefinitely due to a lack of funding in the cardiac area. As a result of our emphasis on our retinal program, our hemangioblast program and our IPS technology, our ability to progress as a company is more significantly hinged on the success of fewer programs and thus, a setback or adverse development relating to any one of them could potentially have a significant impact on share price as well as an inhibitory effect on our ability to raise additional capital. Additionally, we partially rely on nuclear transfer and embryonic stem cell and myoblast technologies that we may not be able to successfully develop, which will prevent us from generating revenues, operating profitably or providing investors any return on their investment. We cannot guarantee that we will be able to successfully develop our Retinal, hemangioblast, IPS-related technologies, nuclear transfer technology, embryonic stem cell or myoblast technologies or that such development will result in products or services with any significant commercial utility. We anticipate that the commercial sale of such products or services, and royalty/licensing fees related to our technology, would be our primary sources of revenues. If we are unable to develop our technologies, investors will likely lose their entire investment in us.

We may not be able to commercially develop our technologies and proposed product lines, which, in turn, would significantly harm our ability to earn revenues and result in a loss of investment.

Our ability to commercially develop our technologies will be dictated in large part by forces outside our control which cannot be predicted, including, but not limited to, general economic conditions, the success of our research and pre-clinical and field testing, the availability of collaborative partners to finance our work in pursuing applications of nuclear transfer technology and technological or other developments in the biomedical field which, due to efficiencies, technological breakthroughs or greater acceptance in the biomedical industry, may render one or more areas of commercialization more attractive, obsolete or competitively unattractive. It is possible that one or more areas of commercialization will not be pursued at all if a collaborative partner or entity willing to fund research and development cannot be located. Our decisions regarding the ultimate products and/or services we pursue could have a significant adverse affect on our ability to earn revenue if we misinterpret trends, underestimate development costs and/or pursue wrong products or services. Any of these factors either alone or in concert could materially harm our ability to earn revenues or could result in a loss of any investment in us.

If we are unable to keep up with rapid technological changes in our field or compete effectively, we will be unable to operate profitably.

We are engaged in activities in the biotechnology field, which is characterized by extensive research efforts and rapid technological progress. If we fail to anticipate or respond adequately to technological developments, our ability to operate profitably could suffer. We cannot assure you that research and discoveries by other biotechnology, agricultural, pharmaceutical or other companies will not render our technologies or potential products or services uneconomical or result in products superior to those we develop or that any technologies, products or services we develop will be preferred to any existing or newly-developed technologies, products or services.

Risks Related to Intellectual Property

Our business is highly dependent upon maintaining licenses with respect to key technology.

Several of the key patents we utilize are licensed to us by third parties. These licenses are subject to termination under certain circumstances (including, for example, our failure to make minimum royalty payments or to timely achieve development and commercialization benchmarks). The loss of any of such licenses, or the conversion of such licenses to non-exclusive licenses, could harm our operations and/or enhance the prospects of our competitors.

Certain of these licenses also contain restrictions, such as limitations on our ability to grant sublicenses that could materially interfere with our ability to generate revenue through the licensing or sale to third parties of important and valuable technologies that we have, for strategic reasons, elected not to pursue directly. The possibility exists that in the future we will require further licenses to complete and/or commercialize our proposed products. We cannot assure you that we will be able to acquire any such licenses on a commercially viable basis.

Certain of our technology is not protectable by patent.

Certain parts of our know-how and technology are not patentable. To protect our proprietary position in such know-how and technology, we intend to require all employees, consultants, advisors and collaborators to enter into confidentiality and invention ownership agreements with us. We cannot assure you, however, that these agreements will provide meaningful protection for our trade secrets, know-how or other proprietary information in the event of any unauthorized use or disclosure. Further, in the absence of patent protection, competitors who independently develop substantially equivalent technology may harm our business.

Patent litigation presents an ongoing threat to our business with respect to both outcomes and costs.

We have previously been involved in patent interference litigation, and it is possible that further litigation over patent matters with one or more competitors could arise. We could incur substantial litigation or interference costs in defending ourselves against suits brought against us or in suits in which we may assert our patents against others. If the outcome of any such litigation is unfavorable, our business could be materially adversely affected. To determine the priority of inventions, we may also have to participate in interference proceedings declared by the United States Patent and Trademark Office, which could result in substantial cost to us. Without additional capital, we may not have the resources to adequately defend or pursue this litigation.

We may not be able to protect our proprietary technology, which could harm our ability to operate profitably.

The biotechnology and pharmaceutical industries place considerable importance on obtaining patent and trade secret protection for new technologies, products and processes. Our success will depend, to a substantial degree, on our ability to obtain and enforce patent protection for our products, preserve any trade secrets and operate without infringing the proprietary rights of others. We cannot assure you that:

- we will succeed in obtaining any patents in a timely manner or at all, or that the breadth or degree of protection of any such patents will protect our interests,
    - the use of our technology will not infringe on the proprietary rights of others,
- patent applications relating to our potential products or technologies will result in the issuance of any patents or that, if issued, such patents will afford adequate protection to us or not be challenged invalidated or infringed, or
    - patents will not issue to other parties, which may be infringed by our potential products or technologies.

We are aware of certain patents that have been granted to others and certain patent applications that have been filed by others with respect to nuclear transfer technologies. The fields in which we operate have been characterized by significant efforts by competitors to establish dominant or blocking patent rights to gain a competitive advantage, and by considerable differences of opinion as to the value and legal legitimacy of competitors' purported patent rights and the technologies they actually utilize in their businesses.

Patents obtained by other persons may result in infringement claims against us that are costly to defend and which may limit our ability to use the disputed technologies and prevent us from pursuing research and development or commercialization of potential products.

A number of other pharmaceutical, biotechnology and other companies, universities and research institutions have filed patent applications or have been issued patents relating to cell therapies, stem cells, and other technologies potentially relevant to or required by our expected products. We cannot predict which, if any, of such applications will issue as patents or the claims that might be allowed. We are aware that a number of companies have filed applications relating to stem cells. We are also aware of a number of patent applications and patents claiming use of stem cells and other modified cells to treat disease, disorder or injury.

If third party patents or patent applications contain claims infringed by either our licensed technology or other technology required to make and use our potential products and such claims are ultimately determined to be valid, there can be no assurance that we would be able to obtain licenses to these patents at a reasonable cost, if at all, or be able to develop or obtain alternative technology. If we are unable to obtain such licenses at a reasonable cost, we may not be able to develop some products commercially. We may be required to defend ourselves in court against allegations of infringement of third party patents. Patent litigation is very expensive and could consume substantial resources and create significant uncertainties. And adverse outcome in such a suit could subject us to significant liabilities to third parties, require disputed rights to be licensed from third parties, or require us to cease using such technology.

We are not in full compliance with some of our license agreements.

We are not in full compliance with some of our licenses (see Our Intellectual Property in the DESCRIPTION OF BUSINESS section of this prospectus) and due to limited financial resources we cannot guarantee that we will regain full compliance status. If we are unable to be in compliance with our license agreements, our business may be harmed.

We may not be able to adequately defend against piracy of intellectual property in foreign jurisdictions.

Considerable research in the areas of stem cells, cell therapeutics and regenerative medicine is being performed in countries outside of the United States, and a number of potential competitors are located in these countries. The laws protecting intellectual property in some of those countries may not provide adequate protection to prevent our competitors from misappropriating our intellectual property. Several of these potential competitors may be further along in the process of product development and also operate large, company-funded research and development programs. As a result, our competitors may develop more competitive or affordable products, or achieve earlier patent protection or product commercialization than we are able to achieve. Competitive products may render any products or product candidates that we develop obsolete.

Regulatory Risks

We cannot market our product candidates until we receive regulatory approval.

We must comply with extensive government regulations in order to obtain and maintain marketing approval for our products in the United States and abroad. The process of obtaining regulatory approval is lengthy, expensive and uncertain. In the United States, the FDA imposes substantial requirements on the introduction of biological products and many medical devices through lengthy and detailed laboratory and clinical testing procedures, sampling activities and other costly and time-consuming procedures. Satisfaction of these requirements typically takes several years and the time required to do so may vary substantially based upon the type and complexity of the biological product or medical device.

In addition, product candidates that we believe should be classified as medical devices for purposes of the FDA regulatory pathway may be determined by the FDA to be biologic products subject to the satisfaction of significantly more stringent requirements for FDA approval. Any difficulties that we encounter in obtaining regulatory approval may have a substantial adverse impact on our business and cause our stock price to significantly decline.

We cannot assure you that we will obtain FDA or foreign regulatory approval to market any of our product candidates for any indication in a timely manner or at all.

If we fail to obtain regulatory approval of any of our product candidates for at least one indication, we will not be permitted to market our product candidates and may be forced to cease our operations.

Even if some of our product candidates receive regulatory approval, these approvals may be subject to conditions, and we and our third party manufacturers will in any event be subject to significant ongoing regulatory obligations and oversight.

Even if any of our product candidates receives regulatory approval, the manufacturing, marketing and sale of our product candidates will be subject to stringent and ongoing government regulation. Conditions of approval, such as limiting the category of patients who can use the product, may significantly impact our ability to commercialize the product and may make it difficult or impossible for us to market a product profitably. Changes we may desire to make to an approved product, such as cell culturing changes or revised labeling, may require further regulatory review and approval, which could prevent us from updating or otherwise changing an approved product. If our product candidates are approved by the FDA or other regulatory authorities for the treatment of any indications, regulatory labeling may specify that our product candidates be used in conjunction with other therapies.

Once obtained, regulatory approvals may be withdrawn and can be expensive to maintain.

Regulatory approval may be withdrawn for a number of reasons, including the later discovery of previously unknown problems with the product. Regulatory approval may also require costly post-marketing follow-up studies, and failure of our product candidates to demonstrate sufficient efficacy and safety in these studies may result in either withdrawal of marketing approval or severe limitations on permitted product usage. In addition, numerous additional regulatory requirements relating to, among other processes, the labeling, packaging, adverse event reporting, storage, advertising, promotion and record-keeping will also apply. Furthermore, regulatory agencies subject a marketed product, its manufacturer and the manufacturer's facilities to continual review and periodic inspections. Compliance with these regulatory requirements are time consuming and require the expenditure of substantial resources.

If any of our product candidates is approved, we will be required to report certain adverse events involving our products to the FDA, to provide updated safety and efficacy information and to comply with requirements concerning the advertisement and promotional labeling of our products. As a result, even if we obtain necessary regulatory approvals to market our product candidates for any indication, any adverse results, circumstances or events that are subsequently discovered, could require that we cease marketing the product for that indication or expend money, time and effort to ensure full compliance, which could have a material adverse effect on our business.

If our products do not comply with applicable laws and regulations our business will be harmed.

Any failure by us, or by any third parties that may manufacture or market our products, to comply with the law, including statutes and regulations administered by the FDA or other U.S. or foreign regulatory authorities, could result in, among other things, warning letters, fines and other civil penalties, suspension of regulatory approvals and the resulting requirement that we suspend sales of our products, refusal to approve pending applications or supplements to approved applications, export or import restrictions, interruption of production, operating restrictions, closure of the facilities used by us or third parties to manufacture our product candidates, injunctions or criminal prosecution. Any of the foregoing actions could have a material adverse effect on our business.

Our products may not be accepted in the marketplace.

If we are successful in obtaining regulatory approval for any of our product candidates, the degree of market acceptance of those products will depend on many factors, including:

- Our ability to provide acceptable evidence and the perception of patients and the healthcare community, including third party payors, of the positive characteristics of our product candidates relative to existing treatment methods, including their safety, efficacy, cost effectiveness and/or other potential advantages,

- The incidence and severity of any adverse side effects of our product candidates,
- The availability of alternative treatments,
- The labeling requirements imposed by the FDA and foreign regulatory agencies, including the scope of approved indications and any safety warnings,
- Our ability to obtain sufficient third party insurance coverage or reimbursement for our products candidates,
- The inclusion of our products on insurance company coverage policies,
- The willingness and ability of patients and the healthcare community to adopt new technologies,
- The procedure time associated with the use of our product candidates,
- Our ability to manufacture or obtain from third party manufacturers sufficient quantities of our product candidates with acceptable quality and at an acceptable cost to meet demand, and
- Marketing and distribution support for our products.

We cannot predict or guarantee that physicians, patients, healthcare insurers, third party payors or health maintenance organizations, or the healthcare community in general, will accept or utilize any of our product candidates. Failure to achieve market acceptance would limit our ability to generate revenue and would have a material adverse effect on our business. In addition, if any of our product candidates achieve market acceptance, we may not be able to maintain that market acceptance over time if competing products or technologies are introduced that are received more favorably or are more cost-effective.

Risks Related to Domestic Governmental Regulation

Companies such as ours engaged in research using embryonic stem cells, adult stem cells and IPS technology are currently subject to strict government regulations, and our operations could be harmed by any legislative or administrative efforts impacting the use of nuclear transfer technology or human embryonic material.

We cannot assure you that our operations will not be harmed by any legislative or administrative efforts by politicians or groups opposed to the development of I.P.S. (Induced Pluripotent Stem Cell) technology generally or the use of IPS technology in the development of therapies specifically. Further, we cannot assure you that legislative or administrative restrictions directly or indirectly delaying, limiting or preventing the use of IPS in the development of products or human embryonic material or the sale, manufacture or use of products or services derived from IPS or human embryonic material will not be adopted in the future.

Restrictions on the use of human embryonic stem cells, and the ethical, legal and social implications of that research, could prevent us from developing or gaining acceptance for commercially viable products in these areas.

Some of our most important programs involve the use of stem cells that are derived from human embryos. The use of human embryonic stem cells gives rise to ethical, legal and social issues regarding the appropriate use of these cells. In the event that our research related to human embryonic stem cells becomes the subject of adverse commentary or publicity, the market price for our common stock could be significantly harmed. Some political and religious groups have voiced opposition to our technology and practices. We use stem cells derived from human embryos that have been created for in vitro fertilization procedures but are no longer desired or suitable for that use and are donated with appropriate informed consent for research use. Many research institutions, including some of our scientific collaborators, have adopted policies regarding the ethical use of human embryonic tissue. These policies may have the effect of limiting the scope of research conducted using human embryonic stem cells, thereby impairing our ability to conduct research in this field.

Despite the rescission of the President Bush’s Executive order in August 2001 by President Barack Obama in March 2009, the overall effect of new laws drafted by the NIH and put into effect regarding the dropping of restrictions on hES research has yet to be seen or made clear.

While it is unclear whether Federal law continues to restrict the use of federal funds for human embryonic cell research, commonly referred to as hES cell research, there can be no assurance that our operations will not be restricted by any future legislative or administrative efforts by politicians or groups opposed to the development of hES call technology or nuclear transfer technology. Additionally there are no allowances made addressing the legality of therapies resulting from IPS technology. Additionally the executive order does not overturn the Dickey–Wicker Amendment, a 13-year-old ban on federal funding for the actual creation of new stem cell lines, an act that destroys an embryo. In the United States these efforts still must be funded privately or by state governments. Further, there can be no assurance that legislative or administrative restrictions directly or indirectly delaying, limiting or preventing the use of hES technology, nuclear transfer technology, IPS technology, the use of human embryonic material, or the sale, manufacture or use of products or services derived from nuclear transfer technology or other hES technology will not be adopted or extended in the future.

Because we or our collaborators must obtain regulatory approval to market our products in the United States and other countries, we cannot predict whether or when we will be permitted to commercialize our products.

Federal, state and local governments in the United States and governments in other countries have significant regulations in place that govern many of our activities. We are or may become subject to various federal, state and local laws, regulations and recommendations relating to safe working conditions, laboratory and manufacturing practices, the experimental use of animals and the use and disposal of hazardous or potentially hazardous substances used in connection with our research and development work. The preclinical testing and clinical trials of the products that we or our collaborators develop are subject to extensive government regulation that may prevent us from creating commercially viable products from our discoveries. In addition, the sale by us or our collaborators of any commercially viable product will be subject to government regulation from several standpoints, including manufacturing, advertising and promoting, selling and marketing, labeling, and distributing.

If, and to the extent that, we are unable to comply with these regulations, our ability to earn revenues will be materially and negatively impacted. The regulatory process, particularly in the biotechnology field, is uncertain, can take many years and requires the expenditure of substantial resources. Biological drugs and non-biological drugs are rigorously regulated. In particular, proposed human pharmaceutical therapeutic product candidates are subject to rigorous preclinical and clinical testing and other requirements by the FDA in the United States and similar health authorities in other countries in order to demonstrate safety and efficacy. We may never obtain regulatory approval to market our proposed products. For additional information about governmental regulations that will affect our planned and intended business operations, see "DESCRIPTION OF BUSINESS—Government Regulation".

Our products may not receive FDA approval, which would prevent us from commercially marketing our products and producing revenues.

The FDA and comparable government agencies in foreign countries impose substantial regulations on the manufacture and marketing of pharmaceutical products through lengthy and detailed laboratory, pre-clinical and clinical testing procedures, sampling activities and other costly and time-consuming procedures. Satisfaction of these regulations typically takes several years or more and varies substantially based upon the type, complexity and novelty of the proposed product. We cannot assure you that FDA approvals for any products developed by us will be granted on a timely basis, if at all. Any such delay in obtaining, or failure to obtain, such approvals could have a material adverse effect on the marketing of our products and our ability to generate product revenue. For additional information about governmental regulations that will affect our planned and intended business operations, see "DESCRIPTION OF BUSINESS—Government Regulation".

For-profit entities may be prohibited from benefiting from grant funding.

There has been much publicity about grant resources for stem cell research, including Proposition 71 in California, which is described more fully under the heading "DESCRIPTION OF BUSINESS—California Proposition 71". Recent developments regarding the State of California deep and significant financial problems has had a direct and significant impact on the availability of funds: funding commitments have not been met by CIRM and there is no guarantee that any funds will flow to for-profit institutions as most of it will go to state and not-for-profit institutions. Additionally state rules and regulations related to any funding that may ultimately be provided, the type of entity that will be eligible for funding, the science to be funded, and funding details have not been finalized. As a result of these uncertainties regarding Proposition 71, we cannot assure you that funding, if any, will be available to us, or any for-profit entity.

The government maintains certain rights in technology that we develop using government grant money and we may lose the revenues from such technology if we do not commercialize and utilize the technology pursuant to established government guidelines. Certain of our and our licensors' research has been or is being funded in part by government grants. In connection with certain grants, the U.S. government retains rights in the technology developed with the grant. These rights could restrict our ability to fully capitalize upon the value of this research.

Risks Related to International Regulation

We may not be able to obtain required approvals in other countries.

The requirements governing the conduct of clinical trials and cell culturing and marketing of our product candidates outside the United States vary widely from country to country. Foreign approvals may take longer to obtain than FDA approvals and can require, among other things, additional testing and different clinical trial designs. Foreign regulatory approval processes generally include all of the risks associated with the FDA approval processes. Some foreign regulatory agencies also must approve prices of the products. Regulatory approval in one country does not ensure regulatory approval in another, but a failure or delay in obtaining regulatory approval in one country may

negatively impact the regulatory process in others. We may not be able to file for regulatory approvals and may not receive necessary approvals to market our product candidates in any foreign country. If we fail to comply with these regulatory requirements or fail to obtain and maintain required approvals in any foreign country, we will not be able to sell our product candidates in that country and our ability to generate revenue will be adversely affected.

Financial Risks

We may not be able to raise the required capital to conduct our operations and develop and commercialize our products.

We require substantial additional capital resources in order to conduct our operations and develop and commercialize our products and run our facilities. We will need significant additional funds or a collaborative partner, or both, to finance the research and development activities of our therapies and potential products. Accordingly, we are continuing to pursue additional sources of financing. Our future capital requirements will depend upon many factors, including:

- The continued progress and cost of our research and development programs,
- The progress with pre-clinical studies and clinical trials,
- The time and costs involved in obtaining regulatory clearance,
- The costs in preparing, filing, prosecuting, maintaining and enforcing patent claims,
- The costs of developing sales, marketing and distribution channels and our ability to sell the therapies/products if developed,
- The costs involved in establishing manufacturing capabilities for commercial quantities of our proposed products,
- Competing technological and market developments,
- Market acceptance of our proposed products,
- The costs for recruiting and retaining employees and consultants, and
- The costs for educating and training physicians about our proposed therapies/products.

Additional financing through strategic collaborations, public or private equity financings or other financing sources may not be available on acceptable terms, or at all. Additional equity financing could result in significant dilution to our shareholders. Further, if additional funds are obtained through arrangements with collaborative partners, these arrangements may require us to relinquish rights to some of our technologies, product candidates or products that we would otherwise seek to develop and commercialize on our own. If sufficient capital is not available, we may be required to delay, reduce the scope of or eliminate one or more of our programs or potential products, any of which could have a material adverse affect on our financial condition or business prospects.

Risks Relating to the September 2005, September 2006, August 2007 and March 2008 Financings

If we are required for any reason to repay our outstanding debentures we would be required to deplete our working capital, if available, or raise additional funds. Our failure to repay the convertible debentures, if required, could result in legal action against us, which could require the sale of substantial assets.

We have outstanding, as of June 30, 2009, $13,434,892 aggregate original principal amount of convertible debentures with an original issue discount of 20.3187% with $4,758,880 in 2008 Debentures, $6,739,215 in 2007 Debentures, $1,854,875 in 2006 Debentures, and $81,922 in 2005 Debentures. We are required to redeem on a monthly basis, by payment, at our option, with cash or with shares of our common stock, 1/30th of the aggregate original principal amount of the debentures. On August 6, 2008, we enacted a moratorium on redemption of all debentures, which moratorium is still in effect as of June 15, 2009. This moratorium triggered an event of default under the terms of all Debentures.

The 2005 Debentures were due and payable on September 15, 2008, the 2006 Debentures are due and payable on September 6, 2009, the 2007 Debentures are due and payable on August 31, 2010, the February 2008 Debenture is due and payable February 15, 2010, and the April 2008 Debenture was due and payable on March 31, 2009. Any event of default could require the early repayment of the convertible debentures, and additional interest is accruing on the outstanding principal balance of the debentures. We anticipate that the full amount of the convertible debentures will be converted into shares of our common stock, in accordance with the terms of the convertible debentures; however

no assurance can be provided that any amount of debentures will be converted. If, prior to the maturity date, we are required to repay the convertible debentures in full, we would be required to use our limited working capital and raise additional funds. If we remain unable to repay the notes when required, the debenture holders could commence legal action against us to recover the amounts due. Any such action could require us to curtail or cease operations.

On July 29, 2009, we entered into a consent, amendment and exchange agreement with holders of our outstanding convertible debentures and warrants, which were issued in private placements to the 2005, 2006, 2007 and 2008 debentures. We agreed to issue to each debenture holder in exchange for the holder's debenture an amended and restated debenture in a principle amount equal to the principal amount of the holder's debenture times 1.35 minus any interest paid thereon. The conversion price under the amended and restated debentures was reduced to $0.10, subject to certain customary anti-dilution adjustments. The maturity date under the amended and restated debentures was extended until December 30, 2010. The amended and restated debentures bear interest at 12% per annum. Further, we agreed to issue to each holder in exchange for the holder's warrant an amended and restated warrant, which exercise price was reduced to $0.10, subject to certain customary anti-dilution adjustments. The termination date under the amended and restated warrants was extended until June 30, 2014. Simultaneously with the signing of this agreement, we and the debenture holders entered into a standstill and forbearance agreement, whereby the debenture holders agreed to forbear from exercising their rights and remedies under the original debentures and transaction documents.

There are a large number of shares underlying our Amended and Restated Debentures and Amended and Restated Warrants. The sale of these shares may depress the market price of our common stock.

As of September 30, 2009, on an aggregated basis our Amended and Restated Debentures may be converted into approximately 210,000,000 shares of our common stock, and Amended and Restated Warrants that may be converted into approximately 192,000,000 shares of our common stock.

Sales of a substantial number of shares of our common stock in the public market could adversely affect the market price for our common stock and make it more difficult for you to sell shares of our common stock at times and prices that you feel are appropriate.

The issuance of shares upon conversion of the Amended and Restated Debentures and exercise of the Amended and Restated Warrants will cause immediate and substantial dilution to our existing stockholders.

The issuance of shares upon conversion of the Amended and Restated Debentures and exercise of Amended and Restated Warrants, will result in substantial dilution to the interests of other stockholders since the holders may ultimately convert and sell the full amount issuable on conversion. Although no single holder may convert its Amended and Restated Debenture and/or exercise its Amended and Restated Warrant if such conversion or exercise would cause it to own more than 4.99% of our outstanding common stock, this restriction does not prevent each holder from converting and/or exercising some of its holdings and then converting the rest of its holdings. In this way, each holder could sell more than this limit while never holding more than this limit. There is no upper limit on the number of shares that may be issued which will have the effect of further diluting the proportionate equity interest and voting power of holders of our common stock.

Our outstanding indebtedness on our Amended and Restated Debentures imposes certain restrictions on how we conduct our business. In addition, all of our assets, including our intellectual property, are pledged to secure this indebtedness. If we fail to meet our obligations under the Amended and Restated Debentures, our payment obligations may be accelerated and the collateral securing the debt may be sold to satisfy these obligations.

The Amended and Restated Debentures and related agreements contain various provisions that restrict our operating flexibility. Pursuant to such agreements, we may not, among other things:

- Except for certain permitted indebtedness, enter into, create, incur, assume, guarantee or suffer to exist any indebtedness for borrowed money of any kind, including but not limited to, a guarantee, on or with respect to any of its property or assets now owned or hereafter acquired or any interest therein or any income or profits therefrom,

- Except for certain permitted liens, enter into, create, incur, assume or suffer to exist any liens of any kind, on or with respect to any of our property or assets now owned or hereafter acquired or any interest therein or any income or profits therefrom,

- Amend our certificate of incorporation, bylaws or other charter documents so as to materially and adversely affect any rights of holders of the Amended and Restated Debentures and Amended and Restated Warrants,

- Repay, repurchase or offer to repay, repurchase or otherwise acquire more than a de minimis number of shares of our common stock or common stock equivalents,

- Enter into any transaction with any of our affiliates, which would be required to be disclosed in any public filing with the Securities and Exchange Commission, unless such transaction is made on an arm's-length basis and expressly approved by a majority of our disinterested directors (even if less than a quorum otherwise required for board approval),

- Pay cash dividends or distributions on any of our equity securities,
- Grant certain registration rights,
- Enter into any agreement with respect to any of the foregoing, or
- Make cash expenditures in excess of $1,000,000 per calendar month, subject to certain specified exceptions.

These provisions could have important consequences for us, including (i) making it more difficult for us to obtain additional debt financing from another lender, or obtain new debt financing on terms favorable to us, (ii) causing us to use a portion of our available cash for debt repayment and service rather than other perceived needs and/or (iii) impacting our ability to take advantage of significant, perceived business opportunities.

Our obligations under our securities purchase agreements are secured by substantially all of our assets.

Our obligations under certain security agreements, executed in connection with both the Amended and Restated Debentures, are secured by substantially all of our assets. As a result, if we default under the terms of the security agreement, such holders could foreclose on their security interest and liquidate all of our assets. This would cause operations to cease.

Risks Related to Third Party Reliance

We depend on third parties to assist us in the conduct of our preclinical studies and clinical trials, and any failure of those parties to fulfill their obligations could result in costs and delays and prevent us from obtaining regulatory approval or successfully commercializing our product candidates on a timely basis, if at all.

We engage consultants and contract research organizations to help design, and to assist us in conducting, our preclinical studies and clinical trials and to collect and analyze data from those studies and trials. The consultants and contract research organizations we engage interact with clinical investigators to enroll patients in our clinical trials. As a result, we depend on these consultants and contract research organizations to perform the studies and trials in accordance with the investigational plan and protocol for each product candidate and in compliance with regulations and standards, commonly referred to as "good clinical practice", for conducting, recording and reporting results of clinical trials to assure that the data and results are credible and accurate and the trial participants are adequately protected, as required by the FDA and foreign regulatory agencies. We may face delays in our regulatory approval process if these parties do not perform their obligations in a timely or competent fashion or if we are forced to change service providers.

We depend on our collaborators to help us develop and test our proposed products, and our ability to develop and commercialize products may be impaired or delayed if collaborations are unsuccessful.

Our strategy for the development, clinical testing and commercialization of our proposed products requires that we enter into collaborations with corporate partners, licensors, licensees and others. We are dependent upon the subsequent success of these other parties in performing their respective responsibilities and the continued cooperation of our partners. Under agreements with collaborators, we may rely significantly on such collaborators to, among other things:

- Design and conduct advanced clinical trials in the event that we reach clinical trials;
- Fund research and development activities with us;
- Pay us fees upon the achievement of milestones; and
- Market with us any commercial products that result from our collaborations.

Our collaborators may not cooperate with us or perform their obligations under our agreements with them. We cannot control the amount and timing of our collaborators’ resources that will be devoted to our research and development activities related to our collaborative agreements with them. Our collaborators may choose to pursue existing or alternative technologies in preference to those being developed in collaboration with us.

The development and commercialization of potential products will be delayed if collaborators fail to conduct these activities in a timely manner, or at all. In addition, our collaborators could terminate their agreements with us and we may not receive any development or milestone payments.

If we do not achieve milestones set forth in the agreements, or if our collaborators breach or terminate their collaborative agreements with us, our business may be materially harmed.

In an effort to conserve financial resources (see FINANCIAL RISK), we have implemented reductions in our work force.
As a result of these and other factors, we may not be successful in hiring or retaining key personnel. Our inability to replace any key employee could harm our operations.

Our reliance on the activities of our non-employee consultants, research institutions, and scientific contractors, whose activities are not wholly within our control, may lead to delays in development of our proposed products.

We rely extensively upon and have relationships with scientific consultants at academic and other institutions, some of whom conduct research at our request, and other consultants with expertise in clinical development strategy or other matters. These consultants are not our employees and may have commitments to, or consulting or advisory contracts with, other entities that may limit their availability to us. We have limited control over the activities of these consultants and, except as otherwise required by our collaboration and consulting agreements to the extent they exist, can expect only limited amounts of their time to be dedicated to our activities. These research facilities may have commitments to other commercial and non-commercial entities. We have limited control over the operations of these laboratories and can expect only limited amounts of time to be dedicated to our research goals.

Preclinical & Clinical Product Development Risks

We have limited experience in conducting and managing preclinical development activities, clinical trials and the application process necessary to obtain regulatory approvals.

Our limited experience in conducting and managing preclinical development activities, clinical trials and the application process necessary to obtain regulatory approvals might prevent us from successfully designing or implementing a preclinical study or clinical trial. If we do not succeed in conducting and managing our preclinical development activities or clinical trials, or in obtaining regulatory approvals, we might not be able to commercialize our product candidates, or might be significantly delayed in doing so, which will materially harm our business.

Our ability to generate revenues from any of our product candidates will depend on a number of factors, including our ability to successfully complete clinical trials, obtain necessary regulatory approvals and implement our commercialization strategy. In addition, even if we are successful in obtaining necessary regulatory approvals and bringing one or more product candidates to market, we will be subject to the risk that the marketplace will not accept those products. We may, and anticipate that we will need to, transition from a company with a research and development focus to a company capable of supporting commercial activities and we may not succeed in such a transition.

Because of the numerous risks and uncertainties associated with our product development and commercialization efforts, we are unable to predict the extent of our future losses or when or if we will become profitable.

Our failure to successfully commercialize our product candidates or to become and remain profitable could depress the market price of our common stock and impair our ability to raise capital, expand our business, diversify our

product offerings and continue our operations.

None of the products that we are currently developing has been approved by the FDA or any similar regulatory authority in any foreign country. Our approach of using cell-based therapy for the treatment of Retinal disease (we are beginning with a treatment for Startgardt's disease and Age-related Macular Degeneration) is risky and unproven and no products using this approach have received regulatory approval in the United States or Europe.

We believe that no company has yet been successful in its efforts to obtain regulatory approval in the United States or Europe of a cell-based therapy product for the treatment of retinal disease or degeneration in humans. Cell-based therapy products, in general, may be susceptible to various risks, including undesirable and unintended side effects, unintended immune system responses, inadequate therapeutic efficacy or other characteristics that may prevent or limit their approval by regulators or commercial use. Many companies in the industry have suffered significant setbacks in advanced clinical trials, despite promising results in earlier trials. If our clinical trials are unsuccessful or significantly delayed, or if we do not complete our clinical trials, we will not receive regulatory approval for or be able to commercialize our product candidates.

Our lead product candidate, our therapeutic Retinal program has note yet started Phase I Clinical Trials and has not yet received approval from the FDA or any similar foreign regulatory authority for any indication.

We cannot market any product candidate until regulatory agencies grant approval or licensure. In order to obtain regulatory approval for the sale of any product candidate, we must, among other requirements, provide the FDA and similar foreign regulatory authorities with preclinical and clinical data that demonstrate to the satisfaction of regulatory authorities that our product candidates are safe and effective for each indication under the applicable standards relating to such product candidate. The preclinical studies and clinical trials of any product candidates must comply with the regulations of the FDA and other governmental authorities in the United States and similar agencies in other countries. Our therapeutic Retinal program may never receive approval from the FDA or any similar foreign regulatory authority.

We may experience numerous unforeseen events during, or as a result of, the clinical trial process that could delay or prevent regulatory approval and/or commercialization of our product candidates, including the following:

- The FDA or similar foreign regulatory authorities may find that our product candidates are not sufficiently safe or effective or may find our cell culturing processes or facilities unsatisfactory,

- Officials at the FDA or similar foreign regulatory authorities may interpret data from preclinical studies and clinical trials differently than we do,

- Our clinical trials may produce negative or inconclusive results or may not meet the level of statistical significance required by the FDA or other regulatory authorities, and we may decide, or regulators may require us, to conduct additional preclinical studies and/or clinical trials or to abandon one or more of our development programs,

- The FDA or similar foreign regulatory authorities may change their approval policies or adopt new regulations,

- There may be delays or failure in obtaining approval of our clinical trial protocols from the FDA or other regulatory authorities or obtaining institutional review board approvals or government approvals to conduct clinical trials at prospective sites,

- We, or regulators, may suspend or terminate our clinical trials because the participating patients are being exposed to unacceptable health risks or undesirable side effects,

- We may experience difficulties in managing multiple clinical sites,

- Enrollment in our clinical trials for our product candidates may occur more slowly than we anticipate, or we may experience high drop-out rates of subjects in our clinical trials, resulting in significant delays,

- We may be unable to manufacture or obtain from third party manufacturers sufficient quantities of our product candidates for use in clinical trials, and

- Our product candidates may be deemed unsafe or ineffective, or may be perceived as being unsafe or ineffective, by healthcare providers for a particular indication.

Any delay of regulatory approval will harm our business.

Risks Related to Competition

The market for therapeutic stem cell products is highly competitive.

We expect that our most significant competitors will be fully integrated pharmaceutical companies and more established biotechnology companies. These companies are developing stem cell-based products and they have significantly greater capital resources in research and development, manufacturing, testing, obtaining regulatory approvals, and marketing capabilities. Many of these potential competitors are further along in the process of product development and also operate large, company-funded research and development programs. As a result, our competitors may develop more competitive or affordable products, or achieve earlier patent recognition and filings.

The biotechnology industries are characterized by rapidly evolving technology and intense competition. Our competitors include major multinational pharmaceutical companies, specialty biotechnology companies and chemical and medical products companies operating in the fields of regenerative medicine, cell therapy, tissue engineering and tissue regeneration.

Many of these companies are well-established and possess technical, research and development, financial and sales and marketing resources significantly greater than ours. In addition, certain smaller biotech companies have formed strategic collaborations, partnerships and other types of joint ventures with larger, well established industry competitors that afford these companies' potential research and development and commercialization advantages. Academic institutions, governmental agencies and other public and private research organizations are also conducting and financing research activities which may produce products directly competitive to those we are developing. Moreover, many of these competitors may be able to obtain patent protection, obtain FDA and other regulatory approvals and begin commercial sales of their products before we do.

In the general area of cell-based therapies (including both ES cell and autologous cell therapies), we compete with a variety of companies, most of whom are specialty biotechnology companies, such as Geron Corporation, Genzyme Corporation, StemCells, Inc., Aastrom Biosciences, Inc., Viacell, Inc., MG Biotherapeutics, Celgene, BioHeart, Inc., Baxter Healthcare, Osiris Therapeutics and Cytori.

Each of these companies are well-established and have substantial technical and financial resources compared to us. However, as cell-based products are only just emerging as medical therapies, many of our direct competitors are smaller biotechnology and specialty medical products companies. These smaller companies may become significant competitors through rapid evolution of new technologies. Any of these companies could substantially strengthen their competitive position through strategic alliances or collaborative arrangements with large pharmaceutical or biotechnology companies.

The diseases and medical conditions we are targeting have no effective long-term therapies. Nevertheless, we expect that our technologies and products will compete with a variety of therapeutic products and procedures offered by major pharmaceutical companies (in the Retinal Disease indication one of our primary competitors is Celgene). Many pharmaceutical and biotechnology companies are investigating new drugs and therapeutic approaches for the same purposes, which may achieve new efficacy profiles, extend the therapeutic window for such products, alter the prognosis of these diseases, or prevent their onset.

We believe that our products, when and if successfully developed, will compete with these products principally on the basis of improved and extended efficacy and safety and their overall economic benefit to the health care system.

Competition for any stem cell products that we may develop may be in the form of existing and new drugs, other forms of cell transplantation, ablative and simulative procedures, and gene therapy. We believe that some of our competitors are also trying to develop stem and progenitor cell-based technologies. We expect that all of these products will compete with our potential stem cell products based on efficacy, safety, cost and intellectual property positions. We may also face competition from companies that have filed patent applications relating to the use of genetically modified cells to treat disease, disorder or injury. In the event our therapies should require the use of such genetically modified cells, we may be required to seek licenses from these competitors in order to commercialize certain of our proposed products, and such licenses may not be granted.

If we develop products that receive regulatory approval, they would then have to compete for market acceptance and market share. For certain of our potential products, an important success factor will be the timing of market introduction of competitive products. This timing will be a function of 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. These competitive products may also impact the timing of clinical testing and approval processes by limiting the number of clinical investigators and patients available to test our potential products.

Our competition includes both public and private organizations and collaborations among academic institutions and large pharmaceutical companies, most of which have significantly greater experience and financial resources than we do.

Private and public academic and research institutions also compete with us in the research and development of therapeutic products based on human embryonic and adult stem cell technologies. In the past several years, the pharmaceutical industry has selectively entered into collaborations with both public and private organizations to explore the possibilities that stem cell therapies may present for substantive breakthroughs in the fight against disease.

The biotechnology and pharmaceutical industries are characterized by intense competition. We compete against numerous companies, both domestic and foreign, many of which have substantially greater experience and financial and other resources than we have. Several such enterprises have initiated cell therapy research programs and/or efforts

to treat the same diseases targeted by us.

Companies such as Geron Corporation, Genzyme Corporation, StemCells, Inc., Aastrom Biosciences, Inc. and Viacell, Inc., as well as others, many of which have substantially greater resources and experience in our fields than we do, are well situated to effectively compete with us. Any of the world's largest pharmaceutical companies represents a significant actual or potential competitor with vastly greater resources than ours. These companies hold licenses to genetic selection technologies and other technologies that are competitive with our technologies. These and other competitive enterprises have devoted, and will continue to devote, substantial resources to the development of technologies and products in competition with us.

Many of our competitors have significantly greater experience than we have in the development, pre-clinical testing and human clinical trials of biotechnology and pharmaceutical products, in obtaining FDA and other regulatory approvals of such products and in manufacturing and marketing such products.

Accordingly our competitors may succeed in obtaining FDA approval for products more rapidly or effectively than we can. Our competitors may also be the first to discover and obtain a valid patent to a particular stem cell technology which may effectively block all others from doing so. It will be important for us or our collaborators to be the first to discover any stem cell technology 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 discovery. Additionally, if we commence commercial sales of any products, we will also be competing with respect to manufacturing efficiency and sales and marketing capabilities, areas in which we have no experience.

General Risks Relating to Our Business

We are subject to litigation that will be costly to defend or pursue and uncertain in its outcome.

Our business may bring us into conflict with our licensees, licensors, or others with whom we have contractual or other business relationships, or with our competitors or others whose interests differ from ours. If we are unable to resolve those conflicts on terms that are satisfactory to all parties, we may become involved in litigation brought by or against us. That litigation is likely to be expensive and may require a significant amount of management's time and attention, at the expense of other aspects of our business. The outcome of litigation is always uncertain, and in some cases could include judgments against us that require us to pay damages, enjoin us from certain activities, or otherwise affect our legal or contractual rights, which could have a significant adverse effect on our business. See "LEGAL PROCEEDINGS" in this prospectus for a more complete discussion of currently pending litigation against the Company.

We may not be able to obtain third-party patient reimbursement or favorable product pricing, which would reduce our ability to operate profitably.

Our ability to successfully commercialize certain of our proposed products in the human therapeutic field may depend to a significant degree on patient reimbursement of the costs of such products and related treatments at acceptable levels from government authorities, private health insurers and other organizations, such as health maintenance organizations. We cannot assure you that reimbursement in the United States or foreign countries will be available for any products we may develop or, if available, will not be decreased in the future, or that reimbursement amounts will not reduce the demand for, or the price of, our products with a consequent harm to our business. We cannot predict what additional regulation or legislation relating to the health care industry or third-party coverage and reimbursement may be enacted in the future or what effect such regulation or legislation may have on our business. If additional regulations are overly onerous or expensive, or if health care related legislation makes our business more expensive or burdensome than originally anticipated, we may be forced to significantly downsize our business plans or completely abandon our business model.

Our products are likely to be expensive to manufacture, and they may not be profitable if we are unable to control the costs to manufacture them.

Our products are likely to be significantly more expensive to manufacture than most other drugs currently on the market today. Our present manufacturing processes produce modest quantities of product intended for use in our ongoing research activities, and we have not developed processes, procedures and capability to produce commercial volumes of product. We hope to substantially reduce manufacturing costs through process improvements, development of new science, increases in manufacturing scale and outsourcing to experienced manufacturers. If we are not able to make these or other improvements, and depending on the pricing of the product, our profit margins

may be significantly less than that of most drugs on the market today. In addition, we may not be able to charge a high enough price for any cell therapy product we develop, even if they are safe and effective, to make a profit. If we are unable to realize significant profits from our potential product candidates, our business would be materially harmed.

Our current source of revenues depends on the stability and performance of our sub-licensees.

Our ability to collect royalties on product sales from our sub-licensees will depend on the financial and operational success of the companies operating under a sublicense. Revenues from those licensees will depend upon the financial and operational success of those third parties. We cannot assure you that these licensees will be successful in obtaining requisite financing or in developing and successfully marketing their products. These licensees may experience unanticipated obstacles including regulatory hurdles, and scientific or technical challenges, which could have the effect of reducing their ability to generate revenues and pay us royalties.

We depend on key personnel for our continued operations and future success, and a loss of certain key personnel could significantly hinder our ability to move forward with our business plan.

Because of the specialized nature of our business, we are highly dependent on our ability to identify, hire, train and retain highly qualified scientific and technical personnel for the research and development activities we conduct or sponsor. The loss of one or more certain key executive officers, or scientific officers, would be significantly detrimental to us. In addition, recruiting and retaining qualified scientific personnel to perform research and development work is critical to our success. Our anticipated growth and expansion into areas and activities requiring additional expertise, such as clinical testing, regulatory compliance, manufacturing and marketing, will require the addition of new management personnel and the development of additional expertise by existing management personnel. There is intense competition for qualified personnel in the areas of our present and planned activities, and there can be no assurance that we will be able to continue to attract and retain the qualified personnel necessary for the development of our business. The failure to attract and retain such personnel or to develop such expertise would adversely affect our business.

Our credibility as a business operating in the field of human embryonic stem cells is largely dependent upon the support of our Ethics Advisory Board.

Because the use of human embryonic stem cells gives rise to ethical, legal and social issues, we have instituted an Ethics Advisory Board. Our Ethics Advisory Board is made up of highly qualified individuals with expertise in the field of human embryonic stem cells. We cannot assure you that these members will continue to serve on our Ethics Advisory Board, and the loss of any such member may affect the credibility and effectiveness of the Board. As a result, our business may be materially harmed in the event of any such loss.

Our insurance policies may be inadequate and potentially expose us to unrecoverable risks.

We have limited director and officer insurance and commercial insurance policies. Any significant insurance claims would have a material adverse effect on our business, financial condition and results of operations. Insurance availability, coverage terms and pricing continue to vary with market conditions. We endeavor to obtain appropriate insurance coverage for insurable risks that we identify, however, we may fail to correctly anticipate or quantify insurable risks, we may not be able to obtain appropriate insurance coverage, and insurers may not respond as we intend to cover insurable events that may occur. We have observed rapidly changing conditions in the insurance markets relating to nearly all areas of traditional corporate insurance. Such conditions have resulted in higher premium costs, higher policy deductibles, and lower coverage limits. For some risks, we may not have or maintain insurance coverage because of cost or availability.

We have no product liability insurance, which may leave us vulnerable to future claims we will be unable to satisfy.

The testing, manufacturing, marketing and sale of human therapeutic products entail an inherent risk of product liability claims, and we cannot assure you that substantial product liability claims will not be asserted against us. We have no product liability insurance. In the event we are forced to expend significant funds on defending product liability actions, and in the event those funds come from operating capital, we will be required to reduce our business activities, which could lead to significant losses.

We cannot assure you that adequate insurance coverage will be available in the future on acceptable terms, if at all, or that, if available, we will be able to maintain any such insurance at sufficient levels of coverage or that any such insurance will provide adequate protection against potential liabilities. Whether or not a product liability insurance policy is obtained or maintained in the future, any product liability claim could harm our business or financial condition.

We presently have members of management and other key employees located in various locations throughout the country which adds complexities to the operation of the business.

Presently, we have members of management and other key employees located in both California and Massachusetts, which adds complexities to the operation of our business.

We face risks related to compliance with corporate governance laws and financial reporting standards.

The Sarbanes-Oxley Act of 2002, as well as related new rules and regulations implemented by the Securities and Exchange Commission and the Public Company Accounting Oversight Board, require changes in the corporate governance practices and financial reporting standards for public companies. These new laws, rules and regulations, including compliance with Section 404 of the Sarbanes-Oxley Act of 2002 relating to internal control over financial reporting, referred to as Section 404, have materially increased our legal and financial compliance costs and made some activities more time-consuming and more burdensome.

Risks Relating to Our Common Stock

Stock prices for biotechnology companies have historically tended to be very volatile.

Stock prices and trading volumes for many biotechnology companies fluctuate widely for a number of reasons, including but not limited to the following factors, some of which may be unrelated to their businesses or results of operations:

- Clinical trial results,
- The amount of cash resources and ability to obtain additional funding,
- Announcements of research activities, business developments, technological innovations or new products by companies or their competitors,
- Entering into or terminating strategic relationships,
- Changes in government regulation,
- Disputes concerning patents or proprietary rights,
- Changes in revenues or expense levels,
- Public concern regarding the safety, efficacy or other aspects of the products or methodologies being developed,
- Reports by securities analysts,
- Activities of various interest groups or organizations,
- Media coverage, and
- Status of the investment markets.

This market volatility, as well as general domestic or international economic, market and political conditions, could materially and adversely affect the market price of our common stock and the return on your investment.

A significant number of shares of our common stock have become available for sale and their sale could depress the price of our common stock.

On March 1, 2008, a significant number of our outstanding securities that were previously restricted became eligible for sale under Rule 144 of the Securities Act, and their sale will not be subject to any volume limitations.

Not including the shares of common stock underlying the Amended and Restated Debentures and the Amended and Restated Warrants, there are presently approximately 53,443,000 outstanding options, warrants and other securities convertible or exercisable into shares of our common stock.

We may also sell a substantial number of additional shares of our common stock in connection with a private placement or public offering of shares of our common stock (or other series or class of capital stock to be designated in the future). The terms of any such private placement would likely require us to register the resale of any shares of capital stock issued or issuable in the transaction. We have also issued common stock to certain parties, such as vendors and service providers, as payment for products and services. Under these arrangements, we may agree to

register the shares for resale soon after their issuance. We may also continue to pay for certain goods and services with equity, which would dilute your interest in the company.

Sales of a substantial number of shares of our common stock under any of the circumstances described above could adversely affect the market price for our common stock and make it more difficult for you to sell shares of our common stock at times and prices that you feel are appropriate.

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

Any payment of cash dividends will depend upon our financial condition, results of operations, capital requirements and other factors and will be at the discretion of our board of directors. We do not anticipate paying cash dividends on our common stock in the foreseeable future. Furthermore, we may incur additional indebtedness that may severely restrict or prohibit the payment of dividends.

Our common stock is subject to "penny stock" regulations and restrictions on initial and secondary broker-dealer sales.

The Securities and Exchange Commission has adopted regulations which generally define "penny stock" to be any listed, trading equity security that has a market price less than $5.00 per share or an exercise price of less than $5.00 per share, subject to certain exemptions. Penny stocks are subject to certain additional oversight and regulatory requirements. Brokers and dealers affecting transactions in our common stock in many circumstances must obtain the written consent of a customer prior to purchasing our common stock, must obtain information from the customer and must provide disclosures to the customer. These requirements may restrict the ability of broker-dealers to sell our common stock and may affect your ability to sell your shares of our common stock in the secondary market.

As an issuer of “penny stock,” the protection provided by the federal securities laws relating to forward looking statements does not apply to us.

Although federal securities laws provide a safe harbor for forward-looking statements made by a public company that files reports under the federal securities laws, this safe harbor is not available to issuers of penny stocks. As a result, the Company will not have the benefit of this safe harbor protection in the event of any legal action based upon a claim that the material provided by the Company contained a material misstatement of fact or was misleading in any material respect because of the Company’s failure to include any statements necessary to make the statements not misleading. Such an action could hurt our financial condition.

FORWARD-LOOKING STATEMENTS

This prospectus contains forward-looking statements that involve risks and uncertainties. We use words such as “may,” “assumes,” “forecasts,” “positions,” “predicts,” “strategy,” “will,” “expects,” “estimates,” “anticipates,” “believes,” “projects,” “budgets,” “potential,” “continue” and variations thereof, and other statements contained in this prospectus, regarding matters that are not historical facts and are forward-looking statements. Because these statements involve risks and uncertainties, as well as certain assumptions, actual results may differ materially from those expressed or implied by such forward-looking statements. Factors that could cause actual results to differ materially include, but are not limited to risks inherent in: our early stage of development, including a lack of operating history, lack of profitable operations and the need for additional capital; the development and commercialization of largely novel and unproven technologies and products; our ability to protect, maintain and defend our intellectual property rights; uncertainties regarding our ability to obtain the capital resources needed to continue research and development operations and to conduct research, preclinical development and clinical trials necessary for regulatory approvals; uncertainty regarding the outcome of clinical trials and our overall ability to compete effectively in a highly complex, rapidly developing, capital intensive and competitive industry. See “Risk Factors” set forth herein for a more complete discussion of these factors. Readers are cautioned not to place undue reliance on these forward-looking statements, which speak only as of the date that they are made. We undertake no obligation to publicly update or revise any forward-looking statements, whether as a result of new information, future events or otherwise.

Forward-looking statements include our plans and objectives for future operations, including plans and objectives relating to our products and our future economic performance. Assumptions relating to the foregoing involve judgments with respect to, among other things, future economic, competitive and market conditions, future business decisions, and the time and money required to successfully complete development and commercialization of our technologies, all of which are difficult or impossible to predict accurately and many of which are beyond our control. Although we believe that the assumptions underlying the forward-looking statements contained herein are reasonable, any of those assumptions could prove inaccurate and, therefore, we cannot assure you that the results contemplated in any of the forward-looking statements contained herein will be realized. Based on the significant uncertainties inherent in the forward-looking statements included herein, the inclusion of any such statement should not be regarded as a representation by us or any other person that our objectives or plans will be achieved.

USE OF PROCEEDS

We will receive no proceeds from the sale of shares of Common Stock offered by the selling stockholders. However, we will generate proceeds from the cash exercise of the warrants by the selling stockholders, if any. We intend to use those proceeds for general corporate purposes.

SELLING SECURITY HOLDERS

The following table details the name of each selling stockholder, the number of shares owned by that selling stockholder, and the number of shares that may be offered by each selling stockholder for resale under this prospectus. The selling stockholders may sell up to 192,148,119 shares of our Common Stock from time to time in one or more offerings under this prospectus. These shares are issuable upon the exercise of warrants held by the selling stockholders. Because each selling stockholder may offer all, some or none of the shares it holds, and because, based upon information provided to us, there are currently no agreements, arrangements, or understandings with respect to the sale of any of the shares, no definitive estimate as to the number of shares that will be held by each selling stockholder after the offering can be provided. The following table has been prepared on the assumption that all shares offered under this prospectus will be sold to parties unaffiliated with the selling stockholders.

Name of Selling Stockholder	Beneficial Ownership Before the Offering (1)		Percentage of Ownership Before Completion of Offering	Shares of Common Stock Included in Prospectus (2)	Beneficial Ownership After the Offering	Percentage of Ownership After Completion of Offering (3)
Newberg Family Trust UTD 12/18/90	948,509	(4)	*	925,859	22,650	*
JMB Capital Partners, LP	5,453,046	(5)	1.07%	2,777,576	2,675,470	*
J Goldman Master Limited Partnership	8,010,290	(6)	1.57%	3,700,370	4,309,920	*
CAMOFI Master LDC	26,360,479	(7)	4.99%	15,230,628	12,017,782	2.34%
Shapiro Family Trust Dtd. 9.25.89	6,237,076	(8)	1.23%	3,018,340	3,218,736	*
G. Tyler Runnels or Jasmine Niklas Runnels, Trustees Family Trust	1,871,025	(9)	*	1,608,628	262,397	*
High Tide, LLC	2,041,043	(10)	*	1,778,646	262,397	*
JMG Triton Offshore Fund, Ltd	11,277,301	(11)	2.20%	6,624,373	4,652,928	*
JMG Capital Partners, LP	11,205,419	(12)	2.18%	6,624,373	4,581,046	*
Cranshire Capital, LP	7,505,538	(13)	1.47%	4,192,847	3,312,691	*
MM&B Holdings, LLC	4,322,672	(14)	*	3,955,317	367,355	*
JGB Capital, LP	1,146,777	(15)	*	898,555	248,222	*
Bristol Investment Fund	22,884,810	(16)	4.36%	19,480,674	3,404,136	*
Overbrook Fund, LLC	1,204,060	(17)	*	941,662	262,398	*
Portside Growth and Opportunity Fund	3,000,719	(18)	*	2,349,975	650,744	*
Rockmore Investment Master Fund, Ltd.	3,190,382	(19)	*	2,770,022	420,360	*
Smithfield Fiduciary, LLC	26,360,479	(20)	4.99%	17,259,913	14,386,114	2.79%
Alpha Capital Ansalt	9,338,040	(21)	1.83%	5,101,042	4,236,998	*
Midsummer Investments, Ltd.	26,360,479	(22)	4.99%	19,027,990	11,576,670	2.25%
Bushido Capital Master Fund	790,125	(23)	*	393,518	396,607	*
BCMF Trustees, LLC	1,281,799	(24)	*	636,791	645,008	*
Ralph Rabman	12,326	(25)	*	5,021	7,305	*

CFRR Holdings, LLC	16,568	(26)	*	6,764	9,804*
ACM SPV, LLC	223,621	(27)	*	91,064	132,557*
John A. Kryzanowski	8,022,538	(28)	1.57%	3,885,542	4,136,996*
DAFNA	452,927	(29)	*	452,927	- *
Whalehaven Capital Fund Limited	3,439,363	(30)	*	3,019,527	419,836*
Portside Growth and Opportunity Fund	1,255,732	(31)	*	1,237,684	18,048*
Stonestreet, LP	268,014	(32)	*	180,548	87,466*
Anthem/CIC Ventures Fund, LP	5,485,153	(33)	1.08%	1,811,595	3,673,558*
Anthem Ventures Annex Fund, LP	2,487,548	(34)	*	738,235	1,749,313*
Evan S. Malik	178,849	(35)	*	90,580	88,269*
Gamma Opportunity Fund Capital Partners LP Class A	641,913	(36)	*	226,449	415,464*
Gamma Opportunity Fund Capital Partners LP Class C	641,911	(37)	*	226,451	415,460*
CAMHZN Master LDC	8,286,905	(38)	1.62%	4,078,057	4,208,848*
RHP Master Fund, Ltd.	3,781,458	(39)	*	2,828,023	953,435*
Brio Capital, LP	3,859,045	(40)	*	1,864,828	1,994,217*
Gemini Master Fund, Ltd.	8,251,644	(41)	1.62%	3,903,994	4,347,650*
Paragon Capital, LP	7,451,301	(42)	1.46%	3,602,812	3,848,489*
The Black Diamond Fund, LLP	2,487,548	(43)	*	738,235	1,749,313*
Chestnut Ridge Partners, LP	3,700,883	(44)	*	3,060,634	640,249*
PDPI LLC	7,382,902	(45)	1.45%	6,112,902	1,270,000*
T.R. Winston & Company, LLC	26,360,479	(46)	4.99%	32,087,898	2,623,970*
Burril & Company	142,110	(47)	*	142,110	- *
Rodman & Renshaw	214,457	(48)	*	214,457	- *
Axel, PhD	153,016	(49)	*	153,016	- *
Pierce Atwood, LLP	4,715,636	(50)	*	2,091,667	2,623,969*

* Less than 1%.

(1) The number and percentage of shares beneficially owned is determined in accordance with Rule 13d-3 of the Securities Exchange Act of 1934, as amended, and the information is not necessarily indicative of beneficial ownership for any other purpose. Under such rule, beneficial ownership includes any shares as to which the selling stockholders has sole or shared voting power or investment power and also any shares, which the selling stockholders has the right to acquire within 60 days. As of September 23, 2009, the Company had 501,905,641 shares of common stock issued and outstanding.

(2) Represents shares of common stock issuable upon exercise of Amended and Restated Warrants.

(3) Assumes the sales of all shares included in this prospectus.

(4) Includes 22,650 shares of common stock issuable upon conversion of Amended and Restated Debentures and 925,859 shares of common stock issuable upon exercise of Amended and Restated Warrants.

(5) Includes 2,675,470 shares of common stock issuable upon conversion of Amended and Restated Debentures and 2,777,576 shares of common stock issuable upon exercise of Amended and Restated Warrants.

(6) Includes 4,309,920 shares of common stock issuable upon conversion of Amended and Restated Debentures and 3,700,370 shares of common stock issuable upon exercise of Amended and Restated Warrants.

(7) The selling stockholder owns Amended and Restated Debentures convertible into 12,017,782 shares of common stock and 15,230,628 Amended and Restated Warrants. The Amended and Restated Debentures and Amended and Restated Warrants cannot be converted or exercised, respectively, to the extent that such conversion or exercise would cause the selling stockholder to beneficially own in excess of 4.99% of the Company’s outstanding common stock immediately following such conversion or exercise. The number of shares deemed beneficially owned is limited accordingly.

(8) Includes 3,218,736 shares of common stock issuable upon conversion of Amended and Restated Debentures and 3,018,340 shares of common stock issuable upon exercise of Amended and Restated Warrants.

(9) Includes 262,397 shares of common stock issuable upon conversion of Amended and Restated Debentures and 1,608,628 shares of common stock issuable upon exercise of Amended and Restated Warrants.

(10) Includes 262,397 shares of common stock issuable upon conversion of Amended and Restated Debentures and 1,778,646 shares of common stock issuable upon exercise of Amended and Restated Warrants.

(11) Includes 4,652,928 shares of common stock issuable upon conversion of Amended and Restated Debentures and 6,624,373 shares of common stock issuable upon exercise of Amended and Restated Warrants.

(12) Includes 4,581,046 shares of common stock issuable upon conversion of Amended and Restated Debentures and 6,624,373 shares of common stock issuable upon exercise of Amended and Restated Warrants.

(13) Includes 3,312,691 shares of common stock issuable upon conversion of Amended and Restated Debentures and 4,192,847 shares of common stock issuable upon exercise of Amended and Restated Warrants.

(14) Includes 367,355 shares of common stock issuable upon conversion of Amended and Restated Debentures and 3,955,317 shares of common stock issuable upon exercise of Amended and Restated Warrants.

(15) Includes 248,222 shares of common stock issuable upon conversion of Amended and Restated Debentures and 898,555 shares of common stock issuable upon exercise of Amended and Restated Warrants.

(16) Includes 3,404,136 shares of common stock issuable upon conversion of Amended and Restated Debentures and 19,480,674 shares of common stock issuable upon exercise of Amended and Restated Warrants.

(17) Includes 262,398 shares of common stock issuable upon conversion of Amended and Restated Debentures and 941,662 shares of common stock issuable upon exercise of Amended and Restated Warrants.

(18) Includes 650,744 shares of common stock issuable upon conversion of Amended and Restated Debentures and 2,349,975 shares of common stock issuable upon exercise of Amended and Restated Warrants.

(19) Includes 420,360 shares of common stock issuable upon conversion of Amended and Restated Debentures and 2,770,022 shares of common stock issuable upon exercise of Amended and Restated Warrants.

(20) The selling stockholder owns Amended and Restated Debentures convertible into 14,386,114 shares of common stock and 17,259,913 Amended and Restated Warrants. The Amended and Restated Debentures and Amended and Restated Warrants cannot be converted or exercised, respectively, to the extent that such conversion or exercise would cause the selling stockholder to beneficially own in excess of 4.99% of the Company’s outstanding common stock immediately following such conversion or exercise. The number of shares deemed beneficially owned is limited accordingly.

(21) Includes 4,236,998 shares of common stock issuable upon conversion of Amended and Restated Debentures and 5,101,042 shares of common stock issuable upon exercise of Amended and Restated Warrants.

(22) The selling stockholder owns Amended and Restated Debentures convertible into 11,576,670 shares of common stock and 19,027,990 Amended and Restated Warrants. The Amended and Restated Debentures and Amended and Restated Warrants cannot be converted or exercised, respectively, to the extent that such conversion or exercise would cause the selling stockholder to beneficially own in excess of 4.99% of the Company’s outstanding common stock immediately following such conversion or exercise. The number of shares deemed beneficially owned is limited accordingly.

(23) Includes 396,607 shares of common stock issuable upon conversion of Amended and Restated Debentures and 393,518 shares of common stock issuable upon exercise of Amended and Restated Warrants.

(24) Includes 645,008 shares of common stock issuable upon conversion of Amended and Restated Debentures and 636,791 shares of common stock issuable upon exercise of Amended and Restated Warrants.

(25) Includes 7,305 shares of common stock issuable upon conversion of Amended and Restated Debentures and 5,021 shares of common stock issuable upon exercise of Amended and Restated Warrants.

(26) Includes 9,804 shares of common stock issuable upon conversion of Amended and Restated Debentures and 6,764 shares of common stock issuable upon exercise of Amended and Restated Warrants.

(27) Includes 132,557 shares of common stock issuable upon conversion of Amended and Restated Debentures and 91,064 shares of common stock issuable upon exercise of Amended and Restated Warrants.

(28) Includes 4,136,996 shares of common stock issuable upon conversion of Amended and Restated Debentures and 3,885,542 shares of common stock issuable upon exercise of Amended and Restated Warrants.

(29) Includes 452,927 shares of common stock issuable upon exercise of Amended and Restated Warrants.

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(30) Includes 419,836 shares of common stock issuable upon conversion of Amended and Restated Debentures and 3,019,527 shares of common stock issuable upon exercise of Amended and Restated Warrants.

(31) Includes 18,048 shares of common stock issuable upon conversion of Amended and Restated Debentures and 1,237,684 shares of common stock issuable upon exercise of Amended and Restated Warrants.

(32) Includes 87,466 shares of common stock issuable upon conversion of Amended and Restated Debentures and 180,548 shares of common stock issuable upon exercise of Amended and Restated Warrants.

(33) Includes 3,673,558 shares of common stock issuable upon conversion of Amended and Restated Debentures and 1,811,595 shares of common stock issuable upon exercise of Amended and Restated Warrants.

(34) Includes 1,749,313 shares of common stock issuable upon conversion of Amended and Restated Debentures and 738,235 shares of common stock issuable upon exercise of Amended and Restated Warrants.

(35) Includes 88,269 shares of common stock issuable upon conversion of Amended and Restated Debentures and 90,580 shares of common stock issuable upon exercise of Amended and Restated Warrants.

(36) Includes 415,464 shares of common stock issuable upon conversion of Amended and Restated Debentures and 226,449 shares of common stock issuable upon exercise of Amended and Restated Warrants.

(37) Includes 415,460 shares of common stock issuable upon conversion of Amended and Restated Debentures and 226,451 shares of common stock issuable upon exercise of Amended and Restated Warrants.

(38) Includes 4,208,848 shares of common stock issuable upon conversion of Amended and Restated Debentures and 4,078,057 shares of common stock issuable upon exercise of Amended and Restated Warrants.

(39) Includes 953,435 shares of common stock issuable upon conversion of Amended and Restated Debentures and 2,828,023 shares of common stock issuable upon exercise of Amended and Restated Warrants.

(40) Includes 1,994,217 shares of common stock issuable upon conversion of Amended and Restated Debentures and 1,864,828 shares of common stock issuable upon exercise of Amended and Restated Warrants.

(41) Includes 4,347,650 shares of common stock issuable upon conversion of Amended and Restated Debentures and 3,903,994 shares of common stock issuable upon exercise of Amended and Restated Warrants.

(42) Includes 3,848,489 shares of common stock issuable upon conversion of Amended and Restated Debentures and 3,602,812 shares of common stock issuable upon exercise of Amended and Restated Warrants.

(43) Includes 1,749,313 shares of common stock issuable upon conversion of Amended and Restated Debentures and 738,235 shares of common stock issuable upon exercise of Amended and Restated Warrants.

(44) Includes 640,249 shares of common stock issuable upon conversion of Amended and Restated Debentures and 3,060,634 shares of common stock issuable upon exercise of Amended and Restated Warrants.

(45) Includes 1,270,000 shares of common stock issuable upon conversion of Amended and Restated Debentures and 6,112,902 shares of common stock issuable upon exercise of Amended and Restated Warrants.

(46) The selling stockholder owns Amended and Restated Debentures convertible into 2,623,970 shares of common stock and 32,087,898 Amended and Restated Warrants. The Amended and Restated Debentures and Amended and Restated Warrants cannot be converted or exercised, respectively, to the extent that such conversion or exercise would cause the selling stockholder to beneficially own in excess of 4.99% of the Company's outstanding common stock immediately following such conversion or exercise. The number of shares deemed beneficially owned is limited accordingly.

(47) Includes 142,110 shares of common stock issuable upon exercise of Amended and Restated Warrants.

(48) Includes 214,457 shares of common stock issuable upon exercise of Amended and Restated Warrants.

(49) Includes 153,016 shares of common stock issuable upon exercise of Amended and Restated Warrants.

(50) Includes 2,623,969 shares of common stock issuable upon conversion of Amended and Restated Debentures and 2,091,667 shares of common stock issuable upon exercise of Amended and Restated Warrants.

PLAN OF DISTRIBUTION

Each selling stockholder and any of its pledgees, assignees and successors-in-interest may, from time to time, sell any or all of its shares of common stock on the Over-the-Counter Bulletin Board or any other stock exchange, market or trading facility on which our shares are traded or in private transactions. These sales may be at fixed or negotiated prices. A selling stockholder may use any one or more of the following methods when selling shares:

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

The selling stockholders may also sell shares under Rule 144 under the Securities Act of 1933, as amended, if available, rather than under this prospectus.

A selling stockholder or its pledgees, donees, transferees or other successors in interest, may also sell the shares directly to market makers acting as principals and/or broker-dealers acting as agents for themselves or their customers. Such broker-dealers may receive compensation in the form of discounts, concessions or commissions from the selling stockholder and/or the purchasers of shares for whom such broker-dealers may act as agents or to whom they sell as principal or both, which compensation as to a particular broker-dealer might be in excess of customary commissions. Market makers and block purchasers purchasing the shares will do so for their own account and at their own risk. It is possible that a selling stockholder will attempt to sell shares of common stock in block transactions to market makers or other purchasers at a price per share which may be below the then market price. A selling stockholder cannot assure that all or any of the shares offered in this prospectus will be issued to, or sold by, the selling stockholder. The selling stockholders and any brokers, dealers or agents, upon effecting the sale of any of the shares offered in this prospectus, may be deemed to be "underwriters" as that term is defined under the Securities Act of 1933, as amended, or the Securities Exchange Act of 1934, as amended, or the rules and regulations under such acts. In such event, any commissions received by such broker-dealers or agents and any profit on the resale of the shares purchased by them may be deemed to be underwriting commissions or discounts under the Securities Act.

We are required to pay all fees and expenses incident to the registration of the shares, including fees and disbursements of counsel to the selling stockholder, but excluding brokerage commissions or underwriter discounts.

The selling stockholders, alternatively, may sell all or any part of the shares offered in this prospectus through an underwriter. No selling stockholder has entered into any agreement with a prospective underwriter and there is no assurance that any such agreement will be entered into.

A selling stockholder may pledge its shares to their brokers under the margin provisions of customer agreements. If a selling stockholder defaults on a margin loan, the broker may, from time to time, offer and sell the pledged shares. The selling stockholder and any other persons participating in the sale or distribution of the shares will be subject to applicable provisions of the Securities Exchange Act of 1934, as amended, and the rules and regulations under such act, including, without limitation, Regulation M. These provisions may restrict certain activities of, and limit the timing of purchases and sales of any of the shares by, the selling stockholder or any other such person. In the event that the selling stockholder is deemed affiliated with purchasers or distribution participants within the meaning of Regulation M, then the selling stockholder will not be permitted to engage in short sales of common stock. Furthermore, under Regulation M, persons engaged in a distribution of securities are prohibited from simultaneously engaging in market making and certain other activities with respect to such securities for a specified period of time prior to the commencement of such distributions, subject to specified exceptions or exemptions. In regards to short sells, the selling stockholder is contractually restricted from engaging in short sells. In addition, if such short sale is deemed to be a stabilizing activity, then the selling stockholder will not be permitted to engage in a short sale of our common stock. All of these limitations may affect the marketability of the shares.

If the selling stockholder notifies us that it has a material arrangement with a broker-dealer for the resale of the common stock, then we would be required to amend the registration statement of which this prospectus is a part, and file a prospectus supplement to describe the agreements between the selling stockholder and the broker-dealer.

DESCRIPTION OF SECURITIES TO BE REGISTERED

This prospectus includes 192,148,119 shares of our Common Stock offered by the selling stockholders. The following description of our Common Stock is only a summary. You should also refer to our certificate of incorporation and bylaws, which have been filed as exhibits to the registration statement of which this prospectus forms a part.

We are authorized to issue 1,750,000,000 shares of Common Stock having a par value of $0.001 per share and 50,000,000 shares of preferred stock having a par value of $0.001 per share ("Preferred Stock"). Holders of Common Stock are entitled to one vote for each share held on all matters submitted to a vote of stockholders and do not have cumulative voting rights. Accordingly, holders of a majority of the shares of Common Stock entitled to vote in any election of directors may elect all of the directors standing for election. Holders of Common Stock are entitled to receive proportionately any dividends as may be declared by our board of directors, subject to any preferential dividend rights of outstanding preferred stock. Our outstanding shares of Common Stock are fully paid and non-assessable. Holders of shares of Common Stock have no conversion, preemptive or other subscription rights, and there are no redemption or sinking fund provisions applicable to the Common Stock.

Effective March 3, 2009, we entered into a $5 million credit facility ("Facility") with a life sciences fund. Under the terms of the agreement, we may draw down funds, as needed, from the investor through the issuance of Series A-1 convertible preferred stock, par value $.001, at a basis of 1 share of Series A-1 convertible preferred stock for every $10,000 invested. The preferred stock pays dividends, in kind of preferred stock, at an annual rate of 10%, matures in four years from the initial drawdown date, and is convertible at the option of the holder into common stock at $0.75 per share. As of September 30, 2009, we had drawn down approximately $2,288,000 on this credit facility.

INTERESTS OF NAMED EXPERTS AND COUNSEL

The validity of the shares of common stock offered hereby will be passed upon for the Registrant by Sichenzia Ross Friedman Ference LLP, 61 Broadway, 32nd fl., New York, NY 10006. Sichenzia Ross Friedman Ference LLP or certain members or employees of Sichenzia Ross Friedman Ference LLP will receive 150,000 shares of the Company's restricted common stock. .

DESCRIPTION OF BUSINESS

Overview

We are a biotechnology company focused on developing and commercializing human embryonic and adult stem cell technology in the emerging field of regenerative medicine.

We were incorporated in Nevada under the name Two Moon Kachinas Corp. on May 18, 2000. On December 30, 2004, we filed an amendment to our articles of incorporation to change our corporate name to A.C.T. Holdings, Inc. On January 31, 2005, we completed the acquisition of Advanced Cell Technology, Inc., a Delaware corporation (prior to the Reincorporation (as defined below), "ACT"), pursuant to the terms of an Agreement and Plan of Merger dated January 3, 2005. As a result of the transaction, we terminated our kachina doll business and succeeded to the business operations and research efforts of ACT in the field of biotechnology. On June 17, 2005, we filed an amendment to our articles of incorporation to change our corporate name to Advanced Cell Technology, Inc. On November 18, 2005, we consummated a merger with and into our wholly-owned subsidiary ACT (the "Reincorporation"). As a result of the Reincorporation, we became a Delaware corporation.

We have acquired, developed and maintain a portfolio of patents and patent applications that form the proprietary base for our research and development efforts in the area of embryonic and adult stem cell research. We believe that our intellectual property represents one of the strongest portfolios in the field. We employ a team including some of the world's leading scientists in the field of stem cell research and development and experts in the conduct of clinical trials. We believe our technology base, in combination with our know-how, provides a competitive advantage and will facilitate the successful development and commercialization of products for use in treatment of a wide array of chronic degenerative diseases and in regenerative repair of acute disease, such as trauma, myocardial infarction and burns.

Our belief that our intellectual property represents one of the strongest portfolios in the field is supported by:

- The size, date and pace of filing, and focus of the portfolio.
- The relative immaturity of this field of study.
- The limited number of truly competitive portfolios of intellectual property.

Regenerative medicine is a new and emerging field of study involving development of medical therapies based on advances in stem cell and nuclear transfer technology. We have developed and maintain a broad portfolio with ownership or exclusive licensing of over 45 issued patents and over 170 patent applications in the field of regenerative medicine and related technologies. This significant volume of patents and patent licenses has been developed in the short span of approximately the past seven to ten years.

Although we have strong competitors in this field, there are a limited number of companies operating in this field. We believe our intellectual property portfolio compares favorably with those of our competition based upon its size, focus and filing dates.

With respect to the focus of our human embryonic stem cell portfolio, we believe that somatic cell nuclear transfer and chromatin transfer are, and will prove to be, one of the technological keys to successful development of stem cell therapies. See "Cellular Reprogramming" below. We own or have a license to numerous other technologies for dealing with transplant rejection, including means of activating oocytes during nuclear transfer, parthenogenesis, transdifferentiation, and dedifferentiation. Our intellectual property also includes patent rights and applications for specific applications of stem cell technology in producing retinal pigment epithelium, hemangioblasts, myoblast stem cells and numerous methods and compositions for the use of these technologies and derived cells in heart disease, immunodeficiency estates and cancer.

With respect to the company's myoblast program, we believe that the technology has demonstrated that a myoblast transplantation treatment is feasible and safe in clinical trials conducted to date and that the technology could address the large market potential presented by heart failure.

Our research efforts to date in human embryonic technologies are at the level of clinical trials, pre-clinical development and basic research. Our myoblast program has received FDA clearance to proceed to Phase II human clinical trials. We are focused on leveraging our key assets, including our intellectual property, our scientific team, our facilities and our capital, to accelerate the advancement of our stem cell technologies. In addition, we are pursuing strategic collaborations with members of academia, industry and foundations to further accelerate the pace of our research efforts.

The Field of Regenerative Medicine

The emerging field of treatment called "regenerative medicine" or "cell therapy" refers to treatments that are founded on the concept of producing new cells to replace malfunctioning or damaged cells as a vehicle to treat disease and injury. Our focus is the development of effective methods to generate replacement cells from both human embryonic and adult stem cells. Many significant and currently untreatable human diseases arise from the loss or malfunction of specific cell types in the body. This is especially true of diseases associated with aging such as Alzheimer's disease, Parkinson's disease, type II diabetes, heart failure, osteoarthritis, and aging of the immune system, known as immunosenescence. This is also true for medical conditions resulting from damage to cells due to acute disease, such as trauma, infarction and burns. We believe that replacing damaged or malfunctioning cells with fully functional ones may be a useful therapeutic strategy in treating many of these diseases and conditions.

A stem cell is a cell that has the ability to branch out and change, or differentiate, into two or more different cell types. Stem cells are self-renewing primitive cells that have the ability to develop into functional, differentiated cells. In general, there are two broad categories of stem cells: adult stem cells and embryonic stem cells. Adult stem cells are derived from various tissues in the human body. Because they can branch out into many different cell types, they are referred to as "multipotent." Multipotent means these cells develop into multiple, but not all, types of cells in the body. Embryonic stem cells, referred to as ES cells, which are derived from pre-implantation embryos, are unique because they are "pluripotent," which means that they can develop into all cells and tissues in the body, and they self-renew indefinitely in their undifferentiated state. The ability of ES cells to divide indefinitely in the undifferentiated state without losing pluripotency is a unique characteristic that distinguishes them from all other stem cells discovered to date in humans.

Our business is focused on both the development and commercialization of adult stem cell transplantation therapies and ES cell based technologies. Our adult stem cell-based products are specifically targeted at therapies for heart and other cardiovascular disease and are at a more advanced stage of development than our human ES cell based

technologies. By contrast, our human ES cell-based technologies are not yet in clinical trials, but we believe these technologies have potentially broader and more powerful applications with respect to a wide range of diseases.

Human ES Cell Programs

Since the discovery of the human ES cell, medical researchers worldwide have generally recognized the significance of this new technology and have begun to focus research on the translation of this discovery into important new therapies. Specifically, researchers have focused on several key challenges including:

- isolating and purifying cell lines,
- growing stable cell lines in culture for long periods without mutations,
- manufacturing cell lines in numbers sufficient for therapy,

- differentiating ES cells into all of the cell types desired for therapies, and
- solving the potential rejection of ES cells used in therapies due to immuno-incompatibility with the patient.

We believe that solving the potential rejection of ES cells in patients is the greatest scientific obstacle to developing successful therapeutics. Our research and technologies are focused on solving this obstacle by creating stem cell therapeutics with compatible tissues. Compatible tissues are referred to as being histocompatible.

We believe the potential markets for regenerative medicine and stem cell therapy are large. The table below summarizes the potential United States patient populations which we believe may be amenable to cell or organ transplantation and represent target markets for products generated through our regenerative medicine technology.

POTENTIAL U.S. PATIENT POPULATIONS FOR CELL-BASED THERAPIES

Medical Condition	Number of Patients*
Cardiovascular disease	70 million
Autoimmune disease	50 million
Diabetes	18 million
Osteoporosis	10 million
Cancer	10 million
Alzheimer's disease	4.5 million
Parkinson's disease	1 million
Burns (severe)	1.1 million
Spinal-cord injuries	0.25 million
Birth defects	0.15 million/year

* These estimates are based on the most current patient estimates published by the following organizations as of April 2005: the American Heart Association, the American Autoimmune Related Diseases Association, SEER (Surveillance, Epidemiology and End Result), American Burn Association, March of Dimes, the Alzheimer's Association, the Alzheimer's Disease Education & Referral Center (National Institute on Aging), the National Institutes of Health's National Institute on Neurological Disorders and Stroke, the Foundation for Spinal Cord Injury Prevention, Care & Cure, the Centers for Disease Control and Prevention, the American Association of Diabetes Educators, the Northwest Parkinson's Foundation and the Parkinson's Action Network.

Our Human Embryonic Stem Cell Technologies

The ability to produce embryonic stem cells that are immunologically compatible with the patient is the hallmark and the strength of our technology platform. We believe our technology platform will enable the transformation of a patient's cells into an embryonic state where those cells can be differentiated into specific therapeutically relevant cell types that are genetically identical to the patient. We believe our technology may also enable the production of stem cell lines, from sources external to the patient, that have a sufficiently high level of histocompatibility to be useful in making cell therapies readily accessible to a large segment of the patient population, without the need for exact genetic matching of tissues. As a result, our technology avoids reliance on more limited approaches that involve use of cell lines that are not histocompatible with the recipient, or therapies based upon use of adult stem cells.

In August 2001, the President of the United States set guidelines for federal funding of research on embryonic stem cells from human embryos created by in-vitro fertilization, referred to as IVF. IVF-ES cells have the drawback that

they are not genetically matched to the recipient patient. These ES cells are allogeneic. The word allogeneic literally means "other DNA type." Therapies using allogeneic cell lines can result in immune system incompatibilities where the host immune system attacks and rejects the transplanted cells or the transplanted cells attack the host. These incompatibilities may be partially suppressed with powerful immunosuppressive drugs, but the side effects can be severe and result in life-threatening complications. As a result, these incompatibilities will generate significant inefficiencies in the application of cell therapies.

The strategic focus of our human ES cell technology is to produce cell lines that are both histocompatible with the patient and pluripotent. We have numerous proprietary technologies that we believe will generate histocompatible, pluripotent stem cells for patient-specific application. These cells maximize the potential for effective use as transplants to replace diseased or destroyed cells in human patients. If successfully developed, our cellular reprogramming technologies will make it possible to produce cells that have the proliferative capacity of young cells, have specific therapeutic application, and are immunologically compatible with the patient.

All of our ES cell technologies are at the level of basic research or in the pre-clinical stage of development.

Our ES Cell Research Programs

Our ES cell research programs are divided into three core categories: cellular reprogramming, our reduced complexity program, and stem cell differentiation. Each of these core areas of focus are discussed below.

I. Cellular Reprogramming

This research program involves development of therapies based on the use of genetically identical pluripotent stem cells generated by our cellular reprogramming technologies. These technologies can be used to generate patient-specific pluripotent cells and tissues for transplantation. We believe our technology platform will enable the transformation of a patient's cell into pluripotent ES cells that are histocompatible with the patient and have the potential to be differentiated into any of the over 200 different human cell types that may be therapeutically relevant in treating diseased or destroyed tissues in human patients. We expect that our cellular reprogramming technologies will offer a new avenue for the introduction of targeted genetic modifications in cells and for the regeneration of cell lifespan, thereby making youthful cells available for aging patients. The combination of these advances, the ability to produce young cells of certain kinds that are histocompatible with the patient, is a core potential application of our technology. We believe these cellular reprogramming technologies will be effective therapies where there is time to prepare customized therapy through reprogramming of the patient's own cells.

Some of the technologies that support our cellular reprogramming program are somatic cell nuclear transfer, chromatin transfer, and fusion technologies.

Somatic cell nuclear transfer, referred to as SCNT, refers to the process wherein a body cell is transferred to an egg cell from which the nuclear DNA has been removed. This results in the body cell being "reprogrammed" by the egg cell. This reprogramming transforms the cell from the type of cell it was, for instance a skin cell, into an embryonic cell with the power to become any cell type in the body. A related technology is called chromatin transfer. Through this technology, the DNA and attached proteins, or chromatin, of the somatic cell is reprogrammed prior to transfer into an egg cell. Chromatin transfer has the potential to improve the efficiencies and therefore reduce the cost of nuclear transfer. We believe that one critical advantage of our proprietary SCNT and chromatin transfer technologies is that the cells are "rejuvenated" by returning the cell to a youthful state. This is important because these youthful cells will have the proliferative capacity of young cells. These healthy replacement cells, which would be genetically identical to the patient's own cells, would then be used for cell transplantation.

Our fusion technologies involve the fusion of the cytoplasm of one cell into another. In the same manner that the cytoplasm of an egg cell is capable of transforming any cell back to an embryonic state, the fusion of the cytoplasm of other cell types, including differentiated cell types (such as blood cells) is capable of reprogramming another cell type, such as a skin cell. These technologies have the potential of transforming a cell from a patient into another medically-useful cell type also identical to the patient. They also have the potential to fuse the cytoplasm of undifferentiated cells, such as embryonic stem cells, with somatic cells to transport the somatic cell DNA back to pluripotency. We believe that the fusion technology we are developing can be developed into as broad and powerful a technique as SCNT, producing histocompatible, youthful stem cells that are multi and potentially even pluripotent. If successfully developed, this technology may also provide a pathway that does not utilize human egg cells which would reduce the cost of the procedure and increase the number of patients that could benefit from its implementation.

II. Stem Cell Differentiation

Regenerative medicine requires that stem cells, from whatever source derived, be differentiated, or re-differentiated, into specific body cell types and then physically transplanted into a patient. Differentiation into tissues such as cardiac muscle, blood, and other tissues occurs spontaneously in ES cells being cultured in a dish. Successful application of

stem cell technology will require control over the specific kinds of cells into which stem cells differentiate. Control of differentiation and the culture and growth of stem and differentiated cells are important current areas of research for us. Also, some chemicals, such as retinoic acid, can be used to trigger differentiation into specific cell types such as nerve cells. We intend to pursue differentiation approaches both in-house and through collaborations with other researchers who have particular interests in, and skills related to, cellular differentiation. These efforts include using both animal and human stem cell lines. Our research in this area includes projects focusing on developing many different cell types that may be used in the future to treat a wide range of diseases.

Currently our researchers are working on projects to generate stable cell lines with particular focus on retinal pigment epithelium, or RPE, cells, and hemangioblast cells.

Retinal Pigment Epithelium Program. In November, 2006 we published data demonstrating human ES cell-derived RPE cells were capable of rescuing visual function in Royal College of Surgeon rats. Following the publication of that data, we entered into a pre-clinical development collaboration with Casey Eye Institute at Oregon Health & Science University. The purpose of the collaboration is to conduct dosage and safety studies in preparation for IND and Phase I human clinical trials.

In June 2009 the Company, along with its collaborators published results of the Long-term Safety and Function of RPE from Human Embryonic Stem Cells in Preclinical Models of Macular Degeneration. In parallel the Company entered into a Master Service Agreement with Sinclair Research of Auxvasse, MO to perform a Biodistribution and Safety/Tumorgenicity Study to further support these results.

Hemangioblast Program. Hemangioblasts are a newly-characterized stem cell capable of differentiating into both hematopoietic, meaning blood cell forming, and angiogenic, meaning blood vessel endothelium forming, cells. We believe it will be possible to utilize hemangioblast cells in engraftment to repair age-related endothelial dysfunction associated with numerous significant age-related diseases, including cardiovascular disease, stroke, and even perhaps cancer. In 2006 we successfully derived hemangioblast cells generated from the company's blastomere-derived human embryonic stem cell lines. In 2007, we published data reporting that through utilization of hemangioblast based therapy we generated function in vivo with respect to the repair of eschemic retinal vasculatures and restoration of blood flow in eschemic limbs. In addition, we also reported increased survival rates of animals suffering from myocardial infarction.

III. Adult Stem Cell Program

Our adult stem cell-based program is developing an autologous myoblast transplantation therapy delivered using a minimally invasive catheter injection system to restore cardiac function in patients with advanced heart disease. The key target for the therapy will be heart failure patients with New York Heart Association ("NYHA") scores Class II to IV. The company's therapy could also benefit patients supported on ventricular assistance devices and potential additional indications, such as acute myocardial infarction, peripheral artery disease, and non-cardiac tissue repair. Currently available treatment options for heart failure patients are inadequate and can only slow the progression of heart failure; none can halt or reverse the process. We believe our autologous myoblast transplantation therapy uses patented myoblast compositions for catheter delivery to the heart offering repair of the disease in heart failure patients and for those end-stage disease patients on ventricular assistance device support. These indications represent a significant unmet medical need and hold significant potential for clinical approval.

Our transplantation therapy involves extraction through simple biopsy from a patient's thigh of myoblasts, which are non-embryonic, skeletal muscle stem cells, that can be expanded in culture and injected back into damaged and scarred regions of the heart. This therapy promotes repair of damaged cardiac tissue by autologous cells, thereby avoiding immune rejection as each patient receives their own cells. Skeletal muscle, unlike heart muscle, can repair itself after injury. Skeletal muscle contains immature myoblasts that can fuse with surrounding myoblasts or with damaged muscle fibers to regenerate contractile skeletal muscle. In experimental models, our researchers have demonstrated that skeletal myoblasts can be transplanted into an infarcted myocardium with the subsequent development of elongated, striated cells characteristic of both skeletal and cardiac muscle. Our Phase I clinical studies have demonstrated the efficacy of this therapy on a preliminary basis. Our Phase II and III studies planned for commencement in 2010 will evaluate the applications for myoblast transplantation in slowing and/or reversing the impact of heart failure.

We perform our myoblast expansion, packaging, shipment, and quality testing using proprietary procedures that adhere to GMP regulations for manufacturing clinical trial material. After expansion, the myoblasts are packaged and delivered to the clinical site for implantation into the injured heart tissue by a surgeon or interventional cardiologist. To maximize cell therapy effectiveness, adequate numbers of cells must be delivered to the site of damage in a repeatable and safe manner. Our therapy utilizes a minimally invasive catheter-based delivery methodology, which provides a safe, targeted and high efficiency approach to cell delivery to the infarct area.

We have completed preclinical testing, two multi-center Phase I clinical trials and a multi-center Phase Ib clinical trial and we anticipate initiating at least one multi-regional, Phase II study in 2010, subject to raising sufficient capital to fund this program.

We believe that, unlike currently available treatment options, myoblast therapy has the ability to repair and improve the function of a damaged heart. Our preclinical and clinical studies support the conclusion that our therapy presents significant advantages over currently available treatments, including:

- Ability to restore cardiac function through new muscle formation
- Ability to prevent further decline of heart function
- No risk immunological rejection of myoblasts due to autologous nature of the therapy
- Complementary to and capable of improving outcomes of current therapeutic options for heart disease

Potential Commercial Applications of our ES Cell and Adult Stem Cell Technologies

We believe that, if successfully developed, stem cell-based therapy has the potential to provide treatment for a broad range of acute and chronic degenerative diseases. We believe the potential applications of cell-based therapeutics include:

- hematopoietic cells for blood diseases and cancer,

- myocardial and endothelial vascular tissue for cardiovascular disease,
- congestive heart failure, myocardial infarction and other cardiovascular disease
- skin cells for dermatological conditions,
- retinal pigment epithelium cells as treatment for macular degeneration and retinal pigmentosis,
- neural cells for spinal cord injury, Parkinson's disease and other neuro-degenerative diseases,
- pancreatic islet ß cells for diabetes,
- liver cells for hepatitis and cirrhosis,
- cartilage cells for arthritis, and
- lung cells for a variety of pulmonary diseases.

While we expect that any future products will take the form of medical procedures, tangible therapeutics, or combinations thereof, we currently have no products, and the identity of our future products, if any, is dependent upon the results of our ongoing research efforts, and, therefore cannot be determined at this time.

Our Intellectual Property

Our research and development is supported by a broad intellectual property portfolio. We currently own or have exclusive licenses to over 45 patents and have over 170 patent applications pending worldwide in the field of regenerative medicine and stem cell therapy. We also have non-exclusive rights to a portfolio of patents and patent applications that support our core intellectual property.

Our success will likely depend upon our ability to preserve our proprietary technologies and operate without infringing the proprietary rights of other parties. However, we may rely on certain proprietary technologies and know-how that are not patentable. We protect such proprietary information, in part, by the use of confidentiality agreements with our employees, consultants and certain of our contractors.

We maintain a disciplined patent policy and, when appropriate, seek patent protection for inventions in our core technologies and in ancillary technologies that support our core technologies or which we otherwise believe will provide us with a competitive advantage. We pursue this strategy by filing patent applications for discoveries we make, either alone or in collaboration with scientific collaborators and strategic partners. Typically, although not always, we file patent applications both in the United States and in select international markets. In addition, we plan to obtain licenses or options to acquire licenses to patent filings from other individuals and organizations that we anticipate could be useful in advancing our research, development and commercialization initiatives and our strategic business interests.

The following table identifies the issued patents we own or license that we believe currently support our technology platform.

Owned by Advanced Cell Technology, Inc.

Number Patent	Country	Filing Date	Issue Date	Expiration Date*	Title
6,808,704	United States (US)	09/06/2000	10/26/2004	09/6/2020	Method for Generating Immune-Compatible Cells and Tissues Using Nuclear Transfer Techniques
783162	Australia (AU)	09/06/2000	01/12/2006	09/6/2020	Method for Generating Immune-Compatible Cells and Tissues Using Nuclear Transfer Techniques
265679	Mexico	09/06/2000	04/03/2009	09/06/2020	Method for Generating Immune-Compatible Cells and Tissues Using Nuclear Transfer Techniques
536786	New Zealand (NZ)	09/06/2000	01/11/2007	09/6/2020	Method for Generating Immune-Compatible Cells and Tissues Using Nuclear Transfer Techniques
782385	AU	10/13/2000	11/3/2005	10/13/2020	Method of Differentiation of Morula or Inner Cell Mass Cells and Method of Making Lineage-Defective Embryonic Stem Cells
518191	NZ	10/13/2000	05/10/2004	10/13/2020	Method of Differentiation of Morula or Inner Cell Mass Cells and Method of Making Lineage-Defective Embryonic Stem Cells
516236	NZ	06/30/2000	08/07/2005	06/30/2020	Cytoplasmic Transfer to De-Differentiate Recipient Cells
782286	AU	06/30/2000	10/27/2005	06/30/2020	Cytoplasmic Transfer to De-Differentiate Recipient Cells
531844	NZ	09/06/2000	12/08/05	09/06/2020	Telomere Restoration and Extension of Cell Life-Span in Animals Cloned from Senescent Somatic Cells
519347	NZ	12/20/2000	11/11/2004	12/20/2020	Method to Produce Cloned Embryos and Adults from Cultured Cells
00818200.0	China (CN)	12/20/2000	10/18/2006	12/20/2020	Method to Produce Cloned Embryos and Adults from Cultured Cells
5,453,366	US	03/15/1993	09/26/1995	09/26/2012	Method of Cloning Bovine Embryos
6,011,197	US	01/28/1999	01/04/2000	03/06/2017	Method of Cloning Bovines Using Reprogrammed Non-Embryonic Bovine Cells
6,395,958	US	07/15/1999	05/28/2002	03/06/2017	Method of Producing a Polypeptide in an Ungulate
5,496,720	US	02/10/1993	03/05/1996	03/05/2013	Parthenogenic Oocyte Activation
5,843,754	US	06/06/1995	12/01/1998	12/01/2015	Parthenogenic Bovine Oocyte Activation
6,194,202	US	03/04/1996	02/27/2001	02/10/2013	Parthenogenic Oocyte Activation
6,077,710	US	10/21/1998	06/20/2000	02/10/2013	Parthenogenic Oocyte Activation
5,346,990	US	03/12/1991	09/13/1994	09/13/2011	Sex-Associated Membrane Proteins and Methods for Increasing the

Probability that Offspring will be of a Desired Sex

Owned by Advanced Cell Technology, Inc.'s wholly-owned subsidiary Mytogen, Inc.

Number Patent	Country	Filing Date	Issue Date	Expiration Date*	Title
6,673,604	US	07/24/2000	01/06/2004	07/24/2020	Muscle Cells and Their Use in Cardiac Repair**
6,432,711	US	11/01/1994	08/13/2002	08/13/2019	Embryonic Stem Cells Capable of Differentiating into Desired Cell Lines
2,174,746	Canada (CA)	11/02/1994	04/24/2007	11/02/2014	Embryonic Stem Cells Capable of Differentiating into Desired Cell Lines

[Missing Graphic Reference]
** Currently undergoing Inter Partes Reexamination

University of Massachusetts Exclusive License to Advanced Cell Technology, Inc.

Number Patent	Country	Filing Date	Issue Date	Expiration Date*	Title
518365	NZ	10/27/2000	08/12/2004	10/27/2020	Gynogenetic or Androgenetic Production of Pluripotent Cells and Cell Lines, and Use Thereof to Produce Differentiated Cells and Tissues
782846	AU	10/27/2000	12/15/2005	10/27/2020	Gynogenetic or Androgenetic Production of Pluripotent Cells and Cell Lines, and Use Thereof to Produce Differentiated Cells and Tissues
5994619	US	12/16/1996	11/30/1999	04/01/2016	Production of Chimeric Bovine or Porcine Animals Using Cultured Inner Cell Mass Cells
5905042	US	04/01/1996	05/08/1999	04/01/2016	Production of Chimeric Bovine or Porcine Animals Using Cultured Inner Cell Mass Cells

* Actual patent expiration dates may differ from the dates listed herein including due to patent term adjustments pursuant to 35 U.S.C. § 154(b) and 37 C.F.R. §§ 1.702-1.705.

The fundamental consequence of patent expiration is that the invention covered by that patent will enter the public domain. However, the expiration of patent protection, or anticipated patent protection, for the bulk of our portfolio is not scheduled to begin for approximately ten to fifteen years. Due to the rapid pace of technology development in this field, and the volume of intellectual property we anticipate will be generated over the next decade, it is unlikely that the expiration of any existing patents or patent rights would have an adverse affect on our business. Due to our current stage of development, our existing patent portfolio is not currently supporting a marketed product, so we will not suffer from any reduction in product revenue from patent expiration. Any actual products that we develop are expected to be supported by intellectual property covered by current patent applications that, if granted, would not expire for 20 years from the date first filed. For example, our patent rights under the University of Massachusetts license listed in the patent table, above, do not begin to expire until 2016. Due to the early stage of our business, we differ from, for example, the pharmaceutical industry where the loss of a key significant patent can result in contemporaneous loss of products, programs or revenues. As our table demonstrates, our business is at the front end of the patent protection spectrum and is not expected to be significantly impacted by expiration of existing patents or patents issued in response to existing applications.

Research and License Agreements

Licenses of Intellectual Property to Us

The following summarizes technology licensed to us.

UMass License - On February 1, 2002 and April 16, 1996, we entered into exclusive license agreements (indefinite license period) with the University of Massachusetts. The 1996 Agreement has been amended by amendments dated September 1, 1997, May 31, 2000 and September 19, 2002. Pursuant to these agreements, the University of Massachusetts, referred to as UMass, exclusively licensed to us certain biological materials, patent rights and related technology for commercialization in specified fields. The license agreements require us to use diligent efforts to develop licensed products and licensed services and require us to pay certain royalties, minimum annual royalties, milestone payments and sublicense income to UMass. UMass received 73,263 shares of common stock of ACT as partial consideration of the license granted. We are currently behind on our payments of all UMass license fees, since 2008, and as such we are in breach of the license agreement.

2002 License - Under the 2002 license, UMass licenses to us certain patent rights relating to the cloning of non-human animals for use in connection with the development, manufacture and sale of products and services in the field of non-human animals for agriculture, companion animals, research and diagnostic products, non-human and human therapeutics, and neutraceuticals, except production of immunoglobulin in the blood of Bos taurus and Bos indicus. We are required to pay royalties to UMass ranging from 1.5% to 2.0% based on the covered product or service. We agreed to pay minimum royalty payments of $15,000 on the first and second anniversary of the agreement, $20,000 on the third anniversary, $25,000 on the fourth anniversary, and increasing to $45,000 on the fifth anniversary and for each year thereafter. We also agreed to make milestone payments to UMass of up to $1,630,000 upon the achievement of various development and commercialization milestones. Finally, we have agreed to pay UMass 18% of all sublicense income.

1996 License - The 1996 license covers certain patent rights, biological materials and know-how related to the cloning of non-human animals and cells for use in cell fields except the production of immunoglobulin in the blood of Bos taurus and Bos indicus. We are required to pay royalties ranging from 2.5% to 4.5% on net sales of products and services covered by the license, and minimum royalty payments in the amount of $15,000 per year (beginning on the later of the fourth year after the effective date of the agreement or the completion of certain clinical trials) for net sales on products and services for use in human therapeutics, and $30,000 per year (beginning in the third year after the effective date of the agreement) for net sales on products and services for all uses other than in human therapeutics.

UMass agreed to waive minimum royalty payments during any calendar year in which we fund research at UMass in the aggregate amount of $300,000. There are no milestone payments. We agreed to pay UMass 18% of all sublicense income except for equity. With respect to equity, we are required to pay UMass an amount equal to 10% of the total equity we receive for any transfer of rights under the 1996 license.

Both the 2002 agreement and the 1996 agreement remain in effect until all issued patents within the patent rights licensed under the agreement have expired, or for a period ten years after the effective date of the agreement if no patents have issued within that ten-year period. Each party has the right to terminate the agreement upon the occurrence of a material uncured breach. We also have the right to terminate at any time for any reason with ninety days' written notice.

Wake Forest License - On January 26, 2001, we entered into a materials and research data license agreement with Wake Forest University (indefinite license period), pursuant to which WFU granted to us a worldwide, exclusive, royalty-free, perpetual and irrevocable right and license to use certain data and stem cells and stem cell cultures created by us from biological materials provided by WFU to us for specified purposes only. The agreement allows us to utilize certain primate skin cells and ovary materials produced by WFU and transferred to us pursuant to an agreement relating to the transfer of biological materials. There are no milestone payments. There are no royalty requirements unless we desire to negotiate a commercial license for use of the biological materials provided to us by WFU. WFU received 60,000 shares of common stock of ACT Group, Inc., a now dissolved Delaware corporation referred to hereinafter as ACT Group. We have agreed to provide WFU samples of stem cells for WFU's research, education and teaching purposes and we have a first option to obtain an exclusive license to any intellectual property rights claimed by WFU in connection with the use of such stem cells. The term of the license granted is perpetual and irrevocable absent a breach by us.

WiCell 2002 License - In March 2002, we entered into an industry research license and material transfer agreement (indefinite license period) with WiCell Research Institute, Inc., referred to as WiCell, pursuant to which WiCell granted to us a non-exclusive license, with no right to sublicense, to make, use and sell or otherwise transfer certain primate embryonic stem cells and derivatives thereof for internal research purposes and to receive such primate embryonic stem cells or derivatives from third parties for internal research purposes. In consideration of the license granted to us by WiCell, we agreed to pay a license fee of $100,000 and an annual maintenance fee of $25,000. The license includes a grant from us to WiCell of a non-exclusive, royalty-free, irrevocable, paid-up research license under any inventions made by or for us to the extent that such inventions are a modification of an invention described in the licensed patent rights. We are currently behind on our payments of the license fees, since 2008, and as such we are in breach of the license agreement.

WARF and WiCell 2007 License - On May 2, 2007, we entered into a commercial products addendum (indefinite period) with the Wisconsin Alumni Research Foundation ("WARF") and its subsidiary, WiCell Research Institute, Inc., ("WiCell"). The addendum amends in certain respects the industry research license and material transfer agreement discussed above. The addendum (i) grants to us a non-exclusive, world-wide commercial license to 23 issued patents and 123 patents pending to pursue therapeutic and research products utilizing human embryonic stem cell technology and (ii) provides for certain sublicensing rights to enable us to further the development and commercialization of products. The addendum requires us to make certain royalty payments and pay license fees to WARF as set forth in the addendum. The maintenance fees required under the 2002 WiCell License are waived during the term of the 2007 License.

Kirin License - Effective May 9, 2006, we entered into an exclusive license agreement (indefinite license period) with Kirin Beer Kabushiki Kaisha, and its subsidiaries Aurox, LLC, Hematech, LLC and Kirin SD, Inc. (which we collectively refer to as Kirin), pursuant to which Kirin exclusively licensed to us certain patent rights, with the right to sublicense, for use in connection with the research, development, manufacture and sale of therapeutic and diagnostic human cell products. The agreement also requires Kirin to disclose to us on a periodic basis a written report of improvements to the patent rights.

In consideration of the rights and licenses granted to us, we paid Kirin an initial license fee and we have agreed to pay royalties representing a percentage of the net sales of all royalty-bearing products and services covered by the license. We are also required to pay a minimum annual royalty payment under the license. We also agreed to pay Kirin a percentage of any and all fees obtained in connection with the sublicensing of the patent rights. There are no milestone payments under the agreement. The license granted in the agreement continues in force until the expiration of all patent rights included in the license or for a period of 10 years from the effective date of the agreement if no patents have issued within that 10-year period. The agreement may be terminated by either party in the event of an uncured breach, and the agreement may also be terminated by us at any time by giving written notice to Kirin. The license has been exclusively sublicensed to Embryome Sciences since August 2008.

Start Licensing License - On August 30, 2006, we entered into a Settlement and License Agreement with UMass and Start Licensing, Inc. (indefinite license period). Pursuant to this agreement Start Licensing licenses to us, on a nonexclusive, royalty-free and paid-up basis, certain patent rights for use with non-human animal research or studies, including preclinical trials, in connection with the research, development and sale of therapeutic and diagnostic human cell products.

Cardion License - Cardion Pharmaceuticals, Inc. and Diacrin, Inc. entered into a patent license agreement on September 30, 2002 (indefinite license period); the agreement was transferred to our wholly owned subsidiary Mytogen, Inc. on December 28, 2005. Under the agreement, Mytogen has a worldwide, non-exclusive right and license under certain specified patent rights, with the right to sublicense, to make, have made, use, have used, offer for sale, sell, lease, import and/or otherwise dispose of products in the field described as cell-transplantation treatments

and related therapies that use genetically unmodified skeletal myoblasts for the treatment of cardiovascular disease. Under the agreement Mytogen is required to make certain milestone payments (ranging from $500,000 to $1,500,000 upon the occurrence of specified events), an annual maintenance fee of $25,000, and earned royalties equal to (i) 5% of the net sales price of all covered products sold to its end-user customers and (ii) 5% of net sales of covered products sold by Mytogen's sublicensees.

GenVec Agreement - On December 28, 2005, Mytogen and GenVec, Inc. entered into a patent assignment and security agreement (indefinite period). Under the agreement, as amended on July 31, 2007, GenVec assigned certain agreements and intellectual property to Mytogen, and retained a royalty-free non-exclusive license, with the right to grant sublicenses, to practice the intellectual property in connection with products, processes or services developed or provided by GenVec other than autologous and allogenic skeletal myoblasts for cardiac therapy. Under the original agreement, Mytogen granted a security interest in the assigned intellectual property, but the security interest was released in the amendment to the agreement. Under the agreement, as amended, Mytogen must use commercially reasonable efforts to commercialize the assigned intellectual property, including by spending specified amounts in support of research and development in support of such commercialization; Mytogen must pay GenVec one-half of the first milestone payment (anticipated to be two million U.S. dollars) received by Mytogen under the Terumo Agreement; and Mytogen must also pay GenVec four percent (4%) of the net sales revenue from sales or other provision of products, processes or services covered by the agreement.

TransXenoGen – On March 24, 2006, the Company entered into a license agreement (indefinite license period) for the development of certain cell processing of ESCs. This license agreement was terminated in the first quarter of 2008.

Exclusive Licenses of Intellectual Property by Us

The following summarizes licenses from us to third parties.

Exeter Life Sciences License - On October 22, 2003, we entered into an exclusive license with Exeter Life Sciences, Inc. (indefinite license period), pursuant to which we exclusively licensed to Exeter certain technology and patent rights for use in the fields of agriculture, endangered species, companion animals and equine animals. The license also grants Exeter a right of first negotiation to any improvement patents that are obtained by us that relate to the licensed intellectual property or which are useful, necessary or required to develop or manufacture certain animals, cells or tissues within the defined fields of use.

Under the agreement, we license rights to certain patent rights and technology useful for the fields of use of non-human animals for agriculture, endangered animals and companion animals; excluding production of such animals for the primary purpose of producing human and non-human animal therapeutics and human healthcare products, including without limitation the production of biopharmaceutical agents in milk, such as proteins, peptides and polypeptides for pharmaceutical, neutraceutical or other use, and excluding the production of immunoglobulin in the blood of Bos taurus and Bos indicus. The field includes:

- the cloning, development, manufacture and sale of cloned non-human animals, including without limitation, bovine, hircine, ovine, porcine, equine animals and ungulates (as well as any transgenic variance or enhancements thereto) or products that are composed of, made in or derived, extracted or isolated from cells or tissues of such animals for the production of food or fiber, and the rendering of services or uses that relate to the production of such products;

- the cloning, development, manufacture and sale of endangered species for purposes of researching, aiding, reproducing or assisting in the reproduction of such endangered species;

- the cloning, development, and sale of hircine, ovine, feline, canine and equine animals (as well as any transgenic variance or enhancements thereto) for personal, business or commercial purposes, specifically excluding the sale of these animals as scientific research laboratory subjects; and

- the cloning, development, manufacture and sale of cloned equine animals (as well as any transgenic variance or enhancements thereto) or products that are composed of, made in or derived, extracted or isolated from cells or tissues of such animals for non-therapeutic purposes, including but not limited to, for use in agriculture, for use as food, for use as companion, service, work or recreational animals, or for use as racing or other equine event animals, and the rendering of services or uses that relate to the production of such products.

In consideration of the rights and licenses granted to Exeter, Exeter paid to us an initial license fee of $1,000,000, and has agreed to pay royalties equal to 5% of the net sales of all products and services covered by the license; provided that, sublicense income for license products that are the progeny of cloned animals covered by the license or products obtained from such progeny, the royalty is 3%. Exeter is required to pay an annual maintenance fee for the license, equal to $100,000 in 2005, increasing annually by $50,000 up to $500,000. Exeter's obligation to pay the annual maintenance fee was suspended until certain intellectual property that is the subject of litigation, namely the matter styled University of Massachusetts v. James M. Robl and Phillipe Collas, Massachusetts Superior Court, Suffolk County, Docket No. 04-0445-BLS, was settled in dispute. Negotiations are continuing to amend the license subject to the outcome of the settlement. The license also provides that we will refund certain amounts to Exeter if certain conditions concerning the referenced litigation are not met and that we will extend to Exeter rights associated with "improvement patents" that are obtained by us or the University in connection with the referenced litigation or any

patent interference or opposition proceedings involving us that relate to the licensed intellectual property or which are useful, necessary or required to develop or manufacture cloned and/or transgenic non-human animals and cloned and/or transgenic cells and tissues from non-human animals within the field of use. The license grants Exeter a right of first negotiation to any improvement patents. There are no milestone payments. Exeter agrees to pay us a total of 25% of all sublicense income under the license. Either party may terminate the agreement in the event of an uncured breach. Exeter may terminate without cause on 60 days' prior written notice to us, or may terminate immediately in the event of a change in law that materially affects Exeter's ability to commercialize the licensed intellectual property under the license.

We expect that the Exeter Life Science License will be amended as a result of the Start Settlement and the settlement of the University of Massachusetts and Advanced Cell Technology, Inc. v. Roslin Institute (Edinburgh), Geron Corporation and Exeter Life Sciences, Inc., U.S. District Court for the District of Columbia (Case No. 1:05-cv-00706 RMU), and University of Massachusetts and Advanced Cell Technology, Inc. v. Roslin Institute (Edinburgh), Geron Corporation and Exeter Life Sciences, Inc., U.S. District Court for the District of Columbia (Case No. 1:05-cv-00353 RMU).

Lifeline License - On May 14, 2004, we entered into three license agreements (indefinite license periods) with Lifeline Cell Technology, formerly known as PacGen Cellco, LLC; the licenses were subsequently amended in August 2005. Pursuant to the license agreements, as amended, we licensed to Lifeline, on an exclusive or non-exclusive basis, as applicable, certain know-how and patent rights for, among other things, the research, development, manufacture and sale of human cells for cell therapy in the treatment of human diabetes and liver diseases, and retinal diseases and retinal degenerative diseases. The license agreements require milestone payments up to $1.75 million in the aggregate. The agreement requires Lifeline to meet minimum research and development requirements. The licenses continue until expiration of the last valid claim within the licensed patent rights. Either party may terminate the agreements for an uncured breach, and Lifeline may terminate the agreement at any time with 30 days' notice.

Exclusive License Agreement Number 1, as amended, covers patent rights and technology developed by us that are relevant to:

- the research, development, manufacture and sale of human and non-human animal cells for commercial research and

- the manufacture and selling of human cells for therapeutic and diagnostic use in the treatment of human diabetes and liver diseases, and retinal diseases and retinal degenerative diseases.

Lifeline has agreed to pay us royalties ranging from 3% to 10% on net sales of products and services covered by the license, and a minimum royalty fee of $175,000 in the first year, plus, commencing 12 months after the effective date of the agreement, additional minimum royalty fees in the amount of $15,000 at 12 months, $37,500 at 24 months, $60,625 at 36 months, and $75,000 annually thereafter. Lifeline also agreed to pay a license fee in the amount of $225,000 in the form of a Convertible Promissory Note, which was repaid in cash in 2007.

We expect that Lifeline Exclusive License Agreement Number 1, as amended, will be further amended as a result of the Start Settlement and the settlement of University of Massachusetts and Advanced Cell Technology, Inc. v. Roslin Institute (Edinburgh), Geron Corporation and Exeter Life Sciences, Inc., U.S. District Court for the District of Columbia (Case No. 1:05-cv-00706 RMU), and University of Massachusetts and Advanced Cell Technology, Inc. v. Roslin Institute (Edinburgh), Geron Corporation and Exeter Life Sciences, Inc., U.S. District Court for the District of Columbia (Case No. 1:05-cv-00353 RMU).

Exclusive License Agreement Number 2, as amended, covers patent rights and technology developed by UMass relevant to:

- the research, development, manufacture and sale of human and non-human animal cells and defined animal cell lines for commercial research,

- the manufacture and selling of human cells for therapeutic and diagnostic use in the treatment of human diabetes and liver diseases and retinal diseases and retinal degenerative diseases, and

- the use of defined animal cell lines in the process of manufacturing and selling human cells for therapeutic and diagnostic use in the treatment of human diabetes and liver diseases.

Lifeline is required to pay us royalties ranging from 3% to 12% on net sales of products and services covered by the license, and a minimum royalty fee of $100,000 in the first year, plus, commencing 12 months after the effective date of the agreement, additional minimum royalty fees in the amount of $15,000 at 12 months, $30,000 at 24 months, $45,000 at 36 months, and $60,000 annually thereafter. Lifeline also paid a license fee in the amount of $150,000 on

June 1, 2007.

We expect that Lifeline Exclusive License Agreement Number 2, as amended, will be further amended as a result of the Start Settlement and the settlement of University of Massachusetts and Advanced Cell Technology, Inc. v. Roslin Institute (Edinburgh), Geron Corporation and Exeter Life Sciences, Inc., U.S. District Court for the District of Columbia (Case No. 1:05-cv-00706 RMU), and University of Massachusetts and Advanced Cell Technology, Inc. v. Roslin Institute (Edinburgh), Geron Corporation and Exeter Life Sciences, Inc., U.S. District Court for the District of Columbia (Case No. 1:05-cv-00353 RMU).

Exclusive License Agreement Number 3, as amended, covers patent rights and technology developed by Infigen relevant to the research, development, manufacture and sale of human cells for cell therapy in the treatment of therapeutic and diagnostic use in the treatment of human diabetes and liver diseases, and retinal diseases and retinal degenerative diseases. Lifeline is required to pay us royalties equal to 6% of net sales of products and services covered by the license, and a minimum royalty fee of $25,000 in the first year, plus, commencing 12 months after the effective date of the agreement, additional minimum royalty fees in the amount of $7,500 at 12 months, $7,500 at 24 months, $6,875 at 36 months, and $15,000 annually thereafter. Lifeline also paid a license fee in the amount of $225,000 in cash on June 1, 2007.

We expect that Lifeline Exclusive License Agreement Number 3, as amended, will be further amended or terminated, as a result of the dissolution of Infigen and the acquisition by us of certain of the Infigen patent rights.

Start Licensing License - On August 30, 2006, we entered into a Settlement and License Agreement with UMass and Start Licensing, Inc. (indefinite license period). See description of this agreement above. Pursuant to this agreement, we granted Start Licensing a worldwide, exclusive, fully paid-up and royalty-free license, with the right to grant sublicenses, to certain patent rights for use in connection with all uses and applications in non-human animals. The agreement was reached in connection with the settlement of the patent interference actions. The terms of the agreement also includes an initial payment to us, which has been made, and certain milestone payments. In addition, under the agreement, Start, Geron Corporation and Roslin Institute ("Roslin") each agree not to sue us under certain patent applications owned by Roslin.

Terumo Agreement - Diacrin, Inc. and Terumo Corporation entered into a development and license agreement on September 4, 2002 (indefinite license period); the agreement was transferred to Mytogen on December 28, 2005. Under the agreement, the parties agreed to collaborate to develop and commercialize products in the field described as autologous skeletal myoblasts for cardiac therapy (and conditionally allogenic skeletal myoblasts for cardiac therapy) in Japan and such other Asian countries as the parties may agree. Pursuant to the agreement, Terumo has an exclusive, royalty-bearing license, with a limited right to grant sublicenses, under certain technology and patent rights controlled by Mytogen; and a non-exclusive, non-royalty bearing right and license to use certain data resulting from clinical trials for products based on the licensed technology and patent rights for purposes of seeking regulatory approvals. The agreement specifies the rights and obligations of the parties with respect to collaboration and development of products covered by the agreement. The agreement also requires Terumo to make certain milestone payments, including the following: two million dollars upon initiation of any clinical trials of any covered product in Japan; two million dollars upon the first filing for regulatory approval of a covered product in Japan; one million dollars upon the first filing for regulatory approval of a covered product in any country other than Japan if the territory is expanded to include countries other than Japan; two million dollars upon the first commercial sale of a covered product in Japan; and one million dollars upon the first commercial sale of a covered product in any country other than Japan if the territory is expanded to include countries other than Japan. Terumo is also required under the agreement to pay royalties in an amount equal to ten percent (10%) of the net sales on covered products. In May 2008, Terumo exercised an option to extend a milestone for one year for $300,000. The milestone consisted of a Phase I clinical trial for the Myoblast Program in Japan and was extended for two years.

Pharming Technologies B.V. License - On February 26, 2008, we entered into a License Agreement with Pharming Technologies B.V., referred to as Pharming, pursuant to which we exclusively licensed to Pharming certain patents including oocyte activation patents for all uses and applications in or related to non-human animals (indefinite license period). We retained all use and applications of such patents in or related to humans.

Transition Holdings, Inc. - On December 18, 2008, we entered into a license agreement with an Ireland-based investor, Transition Holdings Inc. (“Transition”), for certain of our non-core technology (indefinite license period). Under the agreement, Transition agreed to acquire a license to the technology for $3.5 million in cash.

Stem Cell & Regenerative Medicine International, Inc. - On December 1, 2008, the Company and CHA Bio & Diostech Co., Ltd. (“CHA”), a leading Korean-based biotechnology company focused on the development of stem cell technologies, formed an international joint venture. The new company, Stem Cell & Regenerative Medicine International, Inc. (“SCRMI”), will develop human blood cells and other clinical therapies based on our Hemangioblast Program, one of our core technologies. SCRMI has agreed to pay the Company fee of $500,000 for an exclusive, worldwide, license to the Hemangioblast Program (indefinite license period).

CHA – On March 31, 2009, we entered into a licensing agreement (indefinite license period) under which we have licensed our retinal pigment epithelium ("RPE") technology, for the treatment of diseases of the eye, to CHA for development and commercialization exclusively in Korea. We are eligible to receive up to $1.9 million in fees based upon achieving certain milestones, including us making an IND submission to the US FDA to commence clinical trials in humans using the technology, which we currently plan to do during the second half of 2009. We received an up-front fee of $250,000 and additional consideration under the agreement in the amount of $850,000. Under the terms of the agreement, CHA will incur all of the cost associated with RPE clinical trials in Korea.

CHA – On May 21, 2009, we have entered into a licensing agreement (indefinite license period) under which we will license our proprietary single blastomere technology, which has the potential to generate stable cell lines, including retinal pigment epithelium (RPE) cells for the treatment of diseases of the eye, to CHA for development and commercialization exclusively in Korea. We received a $300,000 up-front license fee. We believe there are some 200 different retinal diseases that may be impacted by this stem cell derived therapy including macular degeneration. Age-related macular degeneration (AMD) affects more than 30 million people worldwide and is the leading cause of blindness in people over 60 years of age in the United States (Source: Foundation For Fighting Blindness).

Embroyme Sciences, Inc. – In 2008, we entered into a license agreement (indefinite license period) whereby we licensed to Embryome Sciences certain cell processing technologies, including the technology licensed from Kirin Beer. We received an up-front payment of $470,000 and will receive royalties from future sales of product that utilizes the technologies from the licenses.

Nonexclusive Licenses of Intellectual Property by Us

We have entered into numerous nonexclusive license agreements pursuant to which we have granted non-exclusive rights to various parties to use certain patent rights in defined fields. These licenses generally provide for commercialization of our intellectual property and typically contain minimum royalties, milestones and continuing royalties based upon percentages of revenue.

Regulations

In addition to safety regulations enforced by the FDA, we are also subject to regulations under the Occupational Safety and Health Act, the Environmental Protection Act, the Toxic Substances Control Act and other present and potential future and federal, state, local, and foreign regulations.

Outside the United States, we will be subject to regulations that govern the import of drug products from the United States or other manufacturing sites and foreign regulatory requirements governing human clinical trials and marketing approval for our products. The requirements governing the conduct of clinical trials, product licensing, pricing and reimbursements vary widely from country to country.

The United States Congress, several states and foreign countries have considered legislation banning or restricting human application of ES cell-based and nuclear transfer based technologies. No assurance can be given regarding future restrictions or prohibitions that might affect our technology and business. In addition, we cannot assure you that future judicial rulings with respect to nuclear transfer technology or human ES cells will not have the effect of delaying, limiting or preventing the use of nuclear transfer technology or ES cell-based technology or delaying, limiting or preventing the sale, manufacture or use of products or services derived from nuclear transfer technology or ES cell-derived material. Any such legislative or judicial development would harm our ability to generate revenues and operate profitably.

For additional information about governmental regulations that will affect our planned and intended business operations, see "Risk Factors".

Employees

As of September 30, 2009, we had 13 full-time employees, of whom 6 hold Ph.D. or M.D. degrees. 10 employees are directly involved in research and development activities and 3 are engaged in business development and administration. We also use the services of numerous outside consultants in business and scientific matters. We believe that we have good relations with our employees and consultants.

Competition

The biotechnology industries are characterized by rapidly evolving technology and intense competition. Our competitors include major multinational pharmaceutical companies, specialty biotechnology companies and chemical and medical products companies operating in the fields of regenerative medicine, cell therapy, tissue engineering and tissue regeneration. Many of these companies are well-established and possess technical, research and development, financial and sales and marketing resources significantly greater than ours. In addition, certain smaller biotech companies have formed strategic collaborations, partnerships and other types of joint ventures with larger, well established industry competitors that afford these companies' potential research and development and commercialization advantages. Academic institutions, governmental agencies and other public and private research organizations are also conducting and financing research activities which may produce products directly competitive to those we are developing. Moreover, many of these competitors may be able to obtain patent protection, obtain FDA

and other regulatory approvals and begin commercial sales of their products before we do.

Several such enterprises have initiated cell therapy research programs and/or efforts to treat the same diseases targeted by us. Companies such as Geron Corporation, Genzyme Corporation, StemCells, Inc., Aastrom Biosciences, Inc. and Viacell, Inc., as well as others, many of which have substantially greater resources and experience in our fields than we do, are well situated to effectively compete with us. Any of the world's largest pharmaceutical companies represents a significant actual or potential competitor with vastly greater resources than ours. These companies hold licenses to genetic selection technologies and other technologies that are competitive with our technologies. These and other competitive enterprises have devoted, and will continue to devote, substantial resources to the development of technologies and products in competition with us.

In the general area of cell-based therapies (including both ES cell and autologous cell therapies), we compete with a variety of companies, most of whom are specialty biotechnology companies, such as Geron Corporation, Genzyme Corporation, StemCells, Inc., Aastrom Biosciences, Inc., Viacell, Inc., MG Biotherapeutics, Celgene, BioHeart, Inc., Baxter Healthcare, Osiris Therapeutics and Cytori. Each of these companies are well-established and have substantial technical and financial resources compared to us. However, as cell-based products are only just emerging as medical therapies, many of our direct competitors are smaller biotechnology and specialty medical products companies. These smaller companies may become significant competitors through rapid evolution of new technologies. Any of these companies could substantially strengthen their competitive position through strategic alliances or collaborative arrangements with large pharmaceutical or biotechnology companies.

The diseases and medical conditions we are targeting have no effective long-term therapies. Nevertheless, we expect that our technologies and products will compete with a variety of therapeutic products and procedures offered by major pharmaceutical companies (in the Retinal Disease indication one of our primary competitors is Celgene). Many pharmaceutical and biotechnology companies are investigating new drugs and therapeutic approaches for the same purposes, which may achieve new efficacy profiles, extend the therapeutic window for such products, alter the prognosis of these diseases, or prevent their onset. We believe that our products, when and if successfully developed, will compete with these products principally on the basis of improved and extended efficacy and safety and their overall economic benefit to the health care system.

Competition for any stem cell products that we may develop may be in the form of existing and new drugs, other forms of cell transplantation, ablative and simulative procedures, and gene therapy. We believe that some of our competitors are also trying to develop stem and progenitor cell-based technologies. We expect that all of these products will compete with our potential stem cell products based on efficacy, safety, cost and intellectual property positions. We may also face competition from companies that have filed patent applications relating to the use of genetically modified cells to treat disease, disorder or injury. In the event our therapies should require the use of such genetically modified cells, we may be required to seek licenses from these competitors in order to commercialize certain of our proposed products, and such licenses may not be granted.

If we develop products that receive regulatory approval, they would then have to compete for market acceptance and market share. For certain of our potential products, an important success factor will be the timing of market introduction of competitive products. This timing will be a function of 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. These competitive products may also impact the timing of clinical testing and approval processes by limiting the number of clinical investigators and patients available to test our potential products.

Research and Development

For the years ended December 31, 2008 and 2007 we incurred $8,635,577 and $12,744,913, respectively, on research and development.

DESCRIPTION OF PROPERTY

Our headquarters are located in Worcester, Massachusetts, where we lease approximately 14,000 square foot of office and laboratory facilities. The monthly rent for this property is $20,271. We have the Worcester facility under an eight year sub-lease which expires on April 30, 2010. We also lease approximately 700 square feet of corporate office space in Santa Monica, CA. The lease for our Santa Monica office terminates on February 28, 2010. The monthly rent for this space is $2,170.

LEGAL PROCEEDINGS

Gary D. Aronson v. Advanced Cell Technology, Inc., Superior Court of California, County of Alameda, Case No. RG07348990. John S. Gorton v. Advanced Cell Technology, Inc, Superior Court of California, County of Alameda Case No. RG07350437. On October 1, 2007 Gary D. Aronson brought suit against us with respect to a dispute over the interpretation of the anti-dilution provisions of our warrants issued to Mr. Aronson on or about September 14, 2005. John S. Gorton initiated a similar suit on October 10, 2007. The two cases have been consolidated. The plaintiffs allege that we breached warrants to purchase securities issued by us to these individuals by not timely issuing stock after the warrants were exercised, failing to issue additional shares of stock in accordance with the terms of the warrants and failing to provide proper notice of certain events allegedly triggering Plaintiffs' purported rights to additional shares. Plaintiffs assert monetary damages in excess of $14 million. Plaintiffs may alternatively seek additional shares in the Company with a value potentially in excess of $14 million, or may seek a combination of monetary damages and shares in the Company. Plaintiffs also seek prejudgment interest and attorney fees. Discovery is not complete and no conclusions have been reached as to the potential exposure to us or whether we have liability.

Alexandria Real Estate-79/96 Charlestown Navy Yard v. Advanced Cell Technology, Inc. and Mytogen, Inc. (Suffolk County, Massachusetts) : The Company and its subsidiary Mytogen, Inc. are currently defending themselves against a civil action brought in Suffolk Superior Court, No. 09-442-B, by their former landlord at 79/96 Thirteenth Street,

Charlestown, Massachusetts, a property vacated by us and Mytogen effective May 31, 2008. In that action, Alexandria Real Estate-79/96 Charlestown Navy Yard ("ARE") is alleging that it has been unable to relet the premises and therefore seeking rent for the vacated premises since September 2008. Alexandria is also seeking certain clean-up and storage expenses. We are defending against the suit, claiming that ARE had breached the covenant of quiet enjoyment as of when Mytogen vacated, and that had ARE used reasonable diligence in its efforts to secure a new tenant, it would have been more successful. No trial date has been set.

Alpha Capital Ansalt v. Advanced Cell Technology, Inc., Case No.09 Civ 670 (LAK), United States District Court, Southern District of New York: On March 5, 2009, we settled a lawsuit originally brought by Alpha Capital on February 11, 2009, who is an investor in our 2006, 2007, and 2008 debentures, and associated with the default on August 6, 2008 on all debentures. In settlement of the lawsuit, we agreed to reduce the conversion price on convertible debentures held by Alpha Capital to $0.02 per share, effective immediately, so long as we have a sufficient number of authorized shares to honor the request for conversion.

Bristol Investment Fund, Ltd. as Collateral Agent for the Holders of Certain Original Issue Discount Senior Convertible Debentures v. Alexandria Real Estate—79/96 Charlestown Navy Yard, LLC (Suffolk Superior Court). The Company has been named as a third party complaint in this action in which the plaintiff alleges that Alexandria Real Estate ("Alexandria") improperly charged a trustee holding approximately $146,000 of funds in a Company account that Bristol claimed as collateral. Alexandria brought a third party complaint against the Company for indemnification.

Bristol Investment Fund, Ltd. and Bristol Capital, LLC v. Advanced Cell Technology, Inc. and Mytogen, Inc. (Supreme Court of the State of New York, County of New York): On March 9, 2009, plaintiffs filed a complaint and summons in the Supreme Court of the State of New York, County of New York against the Company and its subsidiary Mytogen, Inc. Plaintiffs' complaint alleges, among other things, that the Company has breached the terms of certain contracts with plaintiffs; namely, convertible debentures and a consulting agreement. Plaintiffs seek preliminary and permanent injunctive relief directing the Company to deliver to plaintiff Bristol Investment Fund, Ltd. ("Bristol") 2.5 million shares of its common stock, declaring a conversion price of $0.02 for the convertible debentures held by plaintiffs, and directing the Company to honor plaintiff's future conversion requests. Plaintiffs also seek compensatory damages in an amount to be determined at trial, but alleged in the complaint to exceed $1.5 million. On May 1, 2009, the Company filed an answer to plaintiffs' complaint. On May 13, 2009, the Company filed a motion to stay the action and to compel arbitration of all claims by Bristol. The court has not yet ruled on the Company's motion to stay the action and to compel arbitration. On or about September 16, 2009, plaintiffs filed an order to show cause, seeking the issuance of a preliminary injunction directing the Company to deliver to Bristol 2.5 shares of its common stock pursuant to a convertible debenture and 47.4 million shares of its common stock pursuant to common stock purchase warrants, declaring a conversion price of $0.02 for the convertible debenture held by plaintiffs, and enjoining or restraining the Company from issuing shares of its common stock to any entity other than plaintiffs or the other holders of convertible debentures. On September 25, 2009, the Company submitted its response in opposition to plaintiffs' motion and moved by cross-motion for dismissal of the complaint, based on the terms of the consent, waiver, amendment and exchange agreement entered into between the Company and the holders of over 95% of the outstanding principal amount of the Amended and Restated Debentures. The court has not yet ruled on the respective motions. The Company intends to continue to contest the case vigorously.

MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

Forward Looking Statements

This prospectus contains forward-looking statements that involve risks and uncertainties. We use words such as "may," "assumes," "forecasts," "positions," "predicts," "strategy," "will," "expects," "estimates," "anticipates," "believes," "projects," "budgets," "potential," "continue" and variations thereof, and other statements contained in this prospectus, regarding matters that are not historical facts and are forward-looking statements. Because these statements involve risks and uncertainties, as well as certain assumptions, actual results may differ materially from those expressed or implied by such forward-looking statements. Factors that could cause actual results to differ materially include, but are not limited to risks inherent in: our early stage of development, including a lack of operating history, lack of profitable operations and the need for additional capital; the development and commercialization of largely novel and unproven technologies and products; our ability to protect, maintain and defend our intellectual property rights; uncertainties regarding our ability to obtain the capital resources needed to continue research and development operations and to conduct research, preclinical development and clinical trials necessary for regulatory approvals; uncertainty regarding the outcome of clinical trials and our overall ability to compete effectively in a highly complex, rapidly developing, capital intensive and competitive industry. See "Risk Factors" set forth herein for a more complete discussion of these factors. Readers are cautioned not to place undue reliance on these forward-looking statements, which speak only as of the date that they are made. We undertake no obligation to publicly update or revise any forward-looking statements, whether as a result of new information, future events or otherwise.

Forward-looking statements include our plans and objectives for future operations, including plans and objectives relating to our products and our future economic performance. Assumptions relating to the foregoing involve judgments with respect to, among other things, future economic, competitive and market conditions, future business

decisions, and the time and money required to successfully complete development and commercialization of our technologies, all of which are difficult or impossible to predict accurately and many of which are beyond our control. Although we believe that the assumptions underlying the forward-looking statements contained herein are reasonable, any of those assumptions could prove inaccurate and, therefore, we cannot assure you that the results contemplated in any of the forward-looking statements contained herein will be realized. Based on the significant uncertainties inherent in the forward-looking statements included herein, the inclusion of any such statement should not be regarded as a representation by us or any other person that our objectives or plans will be achieved.

OVERVIEW

The following discussion should be read in conjunction with the financial statements and notes thereto included in this prospectus.

We are a biotechnology company focused on developing and commercializing human stem cell technology in the emerging fields of regenerative medicine and stem cell therapy. Principal activities to date have included obtaining financing, securing operating facilities, and conducting research and development. We have no therapeutic products currently available for sale and do not expect to have any therapeutic products commercially available for sale for a period of years, if at all. These factors indicate that our ability to continue research and development activities is dependent upon the ability of management to obtain additional financing as required.

CRITICAL ACCOUNTING POLICIES

Deferred Issuance Cost— Payments, either in cash or share-based payments, made in connection with the sale of debentures are recorded as deferred debt issuance costs and amortized using the effective interest method over the lives of the related debentures. The weighted average amortization period for deferred debt issuance costs is 48 months.

Fair Value Measurements — For certain financial instruments, including accounts receivable, accounts payable, accrued expenses, interest payable, advances payable and notes payable, the carrying amounts approximate fair value due to their relatively short maturities.

Emerging Issues Task Force ("EITF") No. 00-19 "Accounting for Derivative Financial Instruments Indexed to and Potentially Settled in, a Company's Own Stock" ("EITF 00-19"), provides a criteria for determining whether freestanding contracts that are settled in a company's own stock, including common stock options and warrants, should be designated as either an equity instrument, an asset or as a liability under SFAS No. 133 "Accounting for Derivative Instruments and Hedging Activities." Under the provisions of EITF 00-19, a contract designated as an asset or a liability must be carried at fair value on a company's balance sheet, with any changes in fair value recorded in a company's results of operations. Using the criteria in EITF 00-19, we have determined that our outstanding options, warrants, and embedded derivative liabilities require liability accounting and record the fair values as warrant and option derivatives.

On January 1, 2008, we adopted FAS No. 157, "Fair Value Measurements" ("FAS 157"). FAS 157 defines fair value, and establishes a three-level valuation hierarchy for disclosures of fair value measurement that enhances disclosure requirements for fair value measures. The carrying amounts reported in the consolidated balance sheets for receivables and current liabilities each qualify as financial instruments and are a reasonable estimate of their fair values because of the short period of time between the origination of such instruments and their expected realization and their current market rate of interest. The three levels of valuation hierarchy are defined as follows:

- Level 1 inputs to the valuation methodology are quoted prices for identical assets or liabilities in active markets.

- Level 2 inputs to the valuation methodology include quoted prices for similar assets and liabilities in active markets, and inputs that are observable for the asset or liability, either directly or indirectly, for substantially the full term of the financial instrument.

- Level 3 inputs to the valuation methodology are unobservable and significant to the fair value measurement.

FAS 133, "Accounting for Derivative Instruments and Hedging Activities" requires bifurcation of embedded derivative instruments and measurement of fair value for accounting purposes. In addition, FAS 155, "Accounting for Certain Hybrid Financial Instruments" requires measurement of fair values of hybrid financial instruments for accounting purposes. We applied the accounting prescribed in FAS 133 to account for its 2005 Convertible Debenture. For practicality in the valuation of the debentures and for ease of presentation, we applied the accounting prescribed in FAS 155 to account for the 2006, 2007, February 2008, and April 2008 Convertible Debentures.

In determining the appropriate fair value of the debentures, we used Level 2 inputs for our valuation methodology. For the periods from January 1, 2008 through June 30, 2008, we applied the Black-Scholes models, Binomial Option Pricing models, Standard Put Option Binomial models and the net present value of certain penalty amounts to value the debentures and their embedded derivatives. At December 31, 2008, to achieve greater cost efficiencies, we changed our application of the Income Approach as defined under paragraph 18 of FAS 157, by applying the

Black-Scholes option pricing model in valuing all debentures and their embedded derivatives. This change did not materially impact the results of our valuations of debentures and embedded derivatives. The impact of the change in the application of the Income Approach was approximately 1.4% of the fair value of our debentures and their embedded derivatives. FAS 157, paragraph 20 states that the disclosure provisions of Statement of Financial Accounting Standards No. 154 Accounting Changes and Error Corrections ("FAS 154") for a change in accounting estimate are not required for revisions resulting from a change in a valuation technique or its application.

Derivative liabilities are adjusted to reflect fair value at each period end, with any increase or decrease in the fair value being recorded in results of operations as adjustments to fair value of derivatives. The effects of interactions between embedded derivatives are calculated and accounted for in arriving at the overall fair value of the financial instruments. In addition, the fair values of freestanding derivative instruments such as warrant and option derivatives are valued using the Black-Scholes model.

Revenue Recognition— Our revenues are generated from license and research agreements with collaborators. Licensing revenue is recognized on a straight-line basis over the shorter of the life of the license or the estimated economic life of the patents related to the license. Deferred revenue represents the portion of the license and other payments received that has not been earned. Costs associated with the license revenue are deferred and recognized over the same term as the revenue. Reimbursements of research expense pursuant to grants are recorded in the period during which collection of the reimbursement becomes assured, because the reimbursements are subject to approval.

Stock Based Compensation— Effective January 1, 2006, we adopted the fair value recognition provisions of FAS 123(R), using the modified-prospective transition method. Under this method, stock-based compensation expense is recognized in the consolidated financial statements for stock options granted, modified or settled after the adoption date. In accordance with FAS 123(R), the unamortized portion of options granted prior to the adoption date is recognized into earnings after adoption. Results for prior periods have not been restated, as provided for under the modified-prospective method.

Under FAS 123(R), stock-based compensation expense recognized is based on the value of the portion of share-based payment awards that are ultimately expected to vest during the period. Based on this, our stock-based compensation is reduced for estimated forfeitures at the time of grant and revised, if necessary, in subsequent periods if actual forfeitures differ from those estimates.

Recent Accounting Pronouncements

In May 2009, the FASB issued Statement of Financial Accounting Standards No. 165, Subsequent Events (“FAS 165”), which provides guidance to establish general standards of accounting for and disclosures of events that occur after the balance sheet date but before financial statements are issued or are available to be issued. FAS 165 also requires entities to disclose the date through which subsequent events were evaluated as well as the rationale for why that date was selected. FAS 165 is effective for interim and annual periods ending after June 15, 2009, and accordingly, we adopted this Standard during the second quarter of 2009. FAS 165 requires that public entities evaluate subsequent events through the date that the financial statements are issued. Subsequent events have been evaluated as of the date of this filing and no further disclosures were required and its adoption did not impact its consolidated results of operations and financial condition.

In June 2009, the FASB issued SFAS No. 166 “Accounting for Transfers of Financial Assets” (“SFAS 166”). Statement 166 is a revision to FASB Statement No. 140, Accounting for Transfers and Servicing of Financial Assets and Extinguishments of Liabilities, and will require more information about transfers of financial assets, including securitization transactions, and where entities have continuing exposure to the risks related to transferred financial assets. It eliminates the concept of a “qualifying special-purpose entity,” changes the requirements for derecognizing financial assets, and requires additional disclosures. SFAS 166 enhances information reported to users of financial statements by providing greater transparency about transfers of financial assets and an entity’s continuing involvement in transferred financial assets. SFAS 166 will be effective at the start of a reporting entity’s first fiscal year beginning after November 15, 2009. Early application is not permitted. We are currently evaluating the impact of adoption of SFAS 166 on the accounting for our convertible debt instruments and related warrant liabilities.

In June 2009, the FASB issued SFAS No. 167 “Amendments to FASB Interpretation No. 46(R)” (“SFAS 167”). Statement 167 is a revision to FASB Interpretation No. 46 (Revised December 2003), Consolidation of Variable Interest Entities, and changes how a reporting entity determines when an entity that is insufficiently capitalized or is not controlled through voting (or similar rights) should be consolidated. The determination of whether a reporting entity is required to consolidate another entity is based on, among other things, the other entity’s purpose and design and the reporting entity’s ability to direct the activities of the other entity that most significantly impact the other entity’s economic

performance. SFAS 167 will require a reporting entity to provide additional disclosures about its involvement with variable interest entities and any significant changes in risk exposure due to that involvement. A reporting entity will be required to disclose how its involvement with a variable interest entity affects the reporting entity's financial statements. SFAS 167 will be effective at the start of a reporting entity's first fiscal year beginning after November 15, 2009. Early application is not permitted. We are currently evaluating the impact, if any, of adoption of SFAS 167 on our financial statements.

In June 2009, the FASB issued Statement of Financial Accounting Standards No. 168, The FASB Accounting Standards Codification™ and the Hierarchy of Generally Accepted Accounting Principles a Replacement of FASB Statement No. 162 ("FAS 168"). This Standard establishes the FASB Accounting Standards Codification™ (the "Codification") as the source of authoritative accounting principles recognized by the FASB to be applied by nongovernmental entities in the preparation of financial statements in conformity with U.S. GAAP. The Codification does not change current U.S. GAAP, but is intended to simplify user access to all authoritative U.S. GAAP by providing all the authoritative literature related to a particular topic in one place. The Codification is effective for interim and annual periods ending after September 15, 2009, and as of the effective date, all existing accounting standard documents will be superseded. The Codification is effective in the third quarter of 2009, and accordingly, the Quarterly Report on Form 10-Q for the quarter ending September 30, 2009 and all subsequent public filings will reference the Codification as the sole source of authoritative literature.

Results of Operations

Comparison of Three Months Ended June 30, 2009 and 2008

	Three months ended June 30, 2009		Three months ended June 30, 2008	
	Amount	% of Revenue	Amount	% of Revenue
REVENUE	$ 242,995	100.0%	$ 174,388	100.0%
COST OF REVENUE	77,347	31.8%	120,186	68.9%
GROSS PROFIT	165,648	68.2%	54,202	31.1%
RESEARCH AND DEVELOPMENT EXPENSES AND GRANT REIMBURSEMENTS	1,138,258	468.4%	2,786,870	1598.1%
GENERAL AND ADMINSTRATIVE EXPENSES	760,556	313.0%	1,840,116	1055.2%
OTHER INCOME (EXPENSE)	(27,703,638)	-11400.9%	(1,016,633)	-583.0%
NET LOSS	$ (29,436,804)	-12114.2%	$ (5,589,417)	-3205.2%

Revenue

Revenue for the three months ended June 30, 2009 and 2008 was $242,995 and $174,388, respectively. These amounts relate primarily to license fees and royalties collected that are being amortized over the period of the license granted, and are therefore typically consistent between periods. The increase in revenue during the three months ended June 30, 2009, was due to more new licenses being granted as compared to the three months ended June 30, 2008.

Of the revenue recognized during the three months ended June 30, 2009, we recognized $51,470 in license fee revenue from Transition Holdings, Inc. On December 18, 2008, we entered into a license agreement with Transition for certain of our non-core technology. Under the agreement, Transition agreed to acquire a license to the technology for a total of $3.5 million in cash. We are recognizing revenue from this agreement over its 17-year patent useful life.

Research and Development Expenses and Grant Reimbursements

Research and development expenses (“R&D”) for the three months ended June 30, 2009 and 2008 were $1,138,258 and $2,786,870, respectively, a decrease of $1,648,612. R&D consists mainly of facility costs, payroll and payroll related expenses, research supplies and costs incurred in connection with specific research grants, and for scientific research. The decline in R&D expenditures during the three months ended June 30, 2009 as compared to the same period in 2008 is primarily due to the fact that we closed our Charlestown, Massachusetts and Alameda, California facilities at the end of May 2008.

Our research and development expenses consist primarily of costs associated with basic and pre-clinical research exclusively in the field of human stem cell therapies and regenerative medicine, with focus on development of our technologies in cellular reprogramming, reduced complexity applications, and stem cell differentiation. These

expenses represent both pre-clinical development costs and costs associated with non-clinical support activities such as quality control and regulatory processes. The cost of our research and development personnel is the most significant category of expense; however, we also incur expenses with third parties, including license agreements, sponsored research programs and consulting expenses.

We do not segregate research and development costs by project because our research is focused exclusively on human stem cell therapies as a unitary field of study. Although we have three principal areas of focus for our research, these areas are completely intertwined and have not yet matured to the point where they are separate and distinct projects. The intellectual property, scientists and other resources dedicated to these efforts are not separately allocated to individual projects, but rather are conducting our research on an integrated basis.

We expect that research and development expenses will continue to increase in the foreseeable future as we add personnel, expand our pre-clinical research, begin clinical trial activities, and increase our regulatory compliance capabilities. The amount of these increases is difficult to predict due to the uncertainty inherent in the timing and extent of progress in our research programs, and initiation of clinical trials. In addition, the results from our basic research and pre-clinical trials, as well as the results of trials of similar therapeutics under development by others, will influence the number, size and duration of planned and unplanned trials. As our research efforts mature, we will continue to review the direction of our research based on an assessment of the value of possible commercial applications emerging from these efforts. Based on this continuing review, we expect to establish discrete research programs and evaluate the cost and potential for cash inflows from commercializing products, partnering with others in the biotechnology or pharmaceutical industry, or licensing the technologies associated with these programs to third parties.

We believe that it is not possible at this stage to provide a meaningful estimate of the total cost to complete our ongoing projects and bring any proposed products to market. The use of human embryonic stem cells as a therapy is an emerging area of medicine, and it is not known what clinical trials will be required by the FDA in order to gain marketing approval. Costs to complete could vary substantially depending upon the projects selected for development, the number of clinical trials required and the number of patients needed for each study. It is possible that the completion of these studies could be delayed for a variety of reasons, including difficulties in enrolling patients, delays in manufacturing, incomplete or inconsistent data from the pre-clinical or clinical trials, and difficulties evaluating the trial results. Any delay in completion of a trial would increase the cost of that trial, which would harm our results of operations. Due to these uncertainties, we cannot reasonably estimate the size, nature nor timing of the costs to complete, or the amount or timing of the net cash inflows from our current activities. Until we obtain further relevant pre-clinical and clinical data, we will not be able to estimate our future expenses related to these programs or when, if ever, and to what extent we will receive cash inflows from resulting products.

Grant reimbursements for the three months ended June 30, 2009 and 2008 were $0 and $0, respectively. The Company did not receive any grant reimbursements during the three months ended June 30, 2009 or 2008.

General and Administrative Expenses

General and administrative expenses for the three months ended June 30, 2009 and 2008 were $760,556 and $1,840,116, respectively, a decrease of $1,079,560. This expense decrease was primarily a result of management's efforts to reduce costs and streamline operations during the three months ended June 30, 2009 so that we could move closer to achieving profitability. General and administrative expenses should continue to slightly decrease over the short term as we continue to streamline our operations and reduce our costs until we are able to expand.

Other Income (Loss)

Other income (loss) for the three months ended June 30, 2009 and 2008 were ($27,703,638) and ($1,016,633), respectively. The change in other income (loss) in the three months ended June 30, 2009, compared to that of the earlier period, relates primarily to adjustments to fair value of derivatives related to the Convertible Debenture financings and default interest charges on all debentures. Interest income was $137 and $1,317 during the three months ended June 30, 2009 and 2008, respectively. Interest income was lower in the three months ended June 30, 2009 than in the three months ended June 30, 2008 due to the lower cash balances held in interest-bearing deposits during the periods. Interest expense was $953,089 and $8,540,674 for the three months ended June 30, 2009 and 2008, respectively, which represents a decrease of $7,587,585. The decrease in interest expense in the three months ended June 30, 2009, compared to the earlier period primarily to amortization of debt discounts and deferred financing costs being recorded during 2008 for all debentures until their default on August 6, 2008. Therefore, no additional interest expense arose in 2009 from this amortization. Interest expense during the three months ended June 30, 2009 relates primarily to debenture default interest.

The gain (loss) on the fair value of derivatives was ($26,701,374) and $7,206,905, for the three months ended June 30, 2009 and 2008, respectively. The increase in our share price contributed most significantly to the loss on the fair value of derivatives during the three months ended June 30, 2009. In periods when the share price increases, the derivative securities become more attractive to exercise or in-the-money, and therefore the value of the derivative liabilities increases.

Net Loss

Net loss for the three months ended June 30, 2009 and 2008 was $29,436,804 and $5,589,417, respectively. The change in loss in the current period is the result of changes to the fair value of derivatives and interest charges related

to convertible debentures.

Comparison of Six Months Ended June 30, 2009 and 2008

	Six months ended June 30, 2009		Six months ended June 30, 2008	
	Amount	% of Revenue	Amount	% of Revenue
REVENUE	$ 536,971	100.0%	$ 298,731	100.0%
COST OF REVENUE	216,099	40.2%	310,914	104.1%
GROSS PROFIT	320,872	59.8%	(12,183)	-4.1%
RESEARCH AND DEVELOPMENT EXPENSES AND GRANT REIMBURSEMENTS	1,438,025	267.8%	6,649,253	2225.8%
GENERAL AND ADMINSTRATIVE EXPENSES	1,507,634	280.8%	3,565,938	1193.7%
LOSS ON SETTLEMENT OF LITIGATION	4,793,949	892.8%	-	0.0%
OTHER INCOME (EXPENSE)	(41,017,944)	-7638.8%	(4,881,702)	-1634.1%
NET INCOME (LOSS)	$ (48,436,680)	-9020.4%	$ (15,109,076)	-5057.8%

Revenue

Revenue for the six months ended June 30, 2009 and 2008 was $536,971 and $298,731, respectively. These amounts relate primarily to license fees and royalties collected that are being amortized over the period of the license granted, and are therefore typically consistent between periods. The increase in revenue during the six months ended June 30, 2009, was due to more new licenses being granted as compared to the six months ended June 30, 2008.

Of the revenue recognized during the six months ended June 30, 2009, we recognized $95,587 in license fee revenue from Transition Holdings, Inc. On December 18, 2008, we entered into a license agreement with Transition for certain of our non-core technology. Under the agreement, Transition agreed to acquire a license to the technology for a total of $3.5 million in cash. We are recognizing revenue from this agreement over its 17-year patent useful life.

Research and Development Expenses and Grant Reimbursements

Research and development expenses ("R&D") for the six months ended June 30, 2009 and 2008 were $1,574,865 and $6,754,422, respectively, a decrease of $5,179,557. R&D consists mainly of facility costs, payroll and payroll related expenses, research supplies and costs incurred in connection with specific research grants, and for scientific research. The decline in R&D expenditures during the six months ended June 30, 2009 as compared to the same period in 2008 is primarily due to the fact that we closed our Charlestown, Massachusetts and Alameda, California facilities at the end of May 2008.

Our research and development expenses consist primarily of costs associated with basic and pre-clinical research exclusively in the field of human stem cell therapies and regenerative medicine, with focus on development of our technologies in cellular reprogramming, reduced complexity applications, and stem cell differentiation. These expenses represent both pre-clinical development costs and costs associated with non-clinical support activities such as quality control and regulatory processes. The cost of our research and development personnel is the most significant category of expense; however, we also incur expenses with third parties, including license agreements, sponsored research programs and consulting expenses.

We do not segregate research and development costs by project because our research is focused exclusively on human stem cell therapies as a unitary field of study. Although we have three principal areas of focus for our research, these areas are completely intertwined and have not yet matured to the point where they are separate and distinct projects. The intellectual property, scientists and other resources dedicated to these efforts are not separately allocated to individual projects, but rather are conducting our research on an integrated basis.

We expect that research and development expenses will continue to increase in the foreseeable future as we add personnel, expand our pre-clinical research, begin clinical trial activities, and increase our regulatory compliance capabilities. The amount of these increases is difficult to predict due to the uncertainty inherent in the timing and extent of progress in our research programs, and initiation of clinical trials. In addition, the results from our basic research and pre-clinical trials, as well as the results of trials of similar therapeutics under development by others, will influence the number, size and duration of planned and unplanned trials. As our research efforts mature, we will continue to review the direction of our research based on an assessment of the value of possible commercial applications emerging from these efforts. Based on this continuing review, we expect to establish discrete research programs and evaluate the cost and potential for cash inflows from commercializing products, partnering with others in the biotechnology or pharmaceutical industry, or licensing the technologies associated with these programs to third parties.

We believe that it is not possible at this stage to provide a meaningful estimate of the total cost to complete our ongoing projects and bring any proposed products to market. The use of human embryonic stem cells as a therapy is an emerging area of medicine, and it is not known what clinical trials will be required by the FDA in order to gain

marketing approval. Costs to complete could vary substantially depending upon the projects selected for development, the number of clinical trials required and the number of patients needed for each study. It is possible that the completion of these studies could be delayed for a variety of reasons, including difficulties in enrolling patients, delays in manufacturing, incomplete or inconsistent data from the pre-clinical or clinical trials, and difficulties evaluating the trial results. Any delay in completion of a trial would increase the cost of that trial, which would harm our results of operations. Due to these uncertainties, we cannot reasonably estimate the size, nature nor timing of the costs to complete, or the amount or timing of the net cash inflows from our current activities. Until we obtain further relevant pre-clinical and clinical data, we will not be able to estimate our future expenses related to these programs or when, if ever, and to what extent we will receive cash inflows from resulting products.

Grant reimbursements for the six months ended June 30, 2009 and 2008 were $136,840 and $105,169, respectively. The Company received one grant during the six months ended June 30, 2009 and one grant during the six months ended June 30, 2008, both from the National Institute of Health.

General and Administrative Expenses

General and administrative expenses for the six months ended June 30, 2009 and 2008 were $1,507,634 and $3,565,938, respectively, a decrease of $2,058,304. This expense decrease was primarily a result of management's efforts to reduce costs and streamline operations during the six months ended June 30, 2009 so that we could move closer to achieving profitability. General and administrative expenses should continue to slightly decrease over the short term as we continue to streamline our operations and reduce our costs until we are able to expand.

Loss on Settlement

Loss on settlement for the six months ended June 30, 2009 and 2008 were $4,793,949 and $0, respectively. During the six months ended June 30, 2009, we were ordered by the Circuit Court of the Twelfth Judicial District Court for Sarasosa County, Florida to settle certain past due accounts payable, for previous professional services and other operating expenses incurred, by the issuance of shares of our common stock. During the six months ended June 30, 2009, we settled $505,199 in accounts payable through the issuance of 39,380,847 shares of our common stock with a value of $5,299,148. Accordingly, we recorded a loss on settlement of $4,793,949 for the six months ended June 30, 2009.

Other Income (Loss)

Other income (loss) for the six months ended June 30, 2009 and 2008 were ($41,017,944) and ($4,881,702), respectively. The change in other income (loss) in the six months ended June 30, 2009, compared to that of the earlier period, relates primarily to adjustments to fair value of derivatives related to the convertible debenture financings, loss on modification of debentures, and default interest charges on all debentures. Interest income was $1,758 and $8,166 during the six months ended June 30, 2009 and 2008, respectively. Interest income was lower in the six months ended June 30, 2009 than in the six months ended June 30, 2008 due to the lower cash balances held in interest-bearing deposits during the periods. Interest expense was $1,535,910 and $12,747,290 for the six months ended June 30, 2009 and 2008, respectively, which represents a decrease of $11,211,380. The decrease in interest expense in the six months ended June 30, 2009, compared to the earlier period relates primarily to amortization of debt discounts and deferred financing costs being recorded during 2008 for all debentures until their default on August 6, 2008. Therefore, no additional interest expense arose in 2009 from this amortization. Interest expense during the six months ended June 30, 2009 relates primarily to debenture default interest.

The gain (loss) on the fair value of derivatives was ($37,542,986) and $8,227,176, for the six months ended June 30, 2009 and 2008, respectively. The increase in our share price contributed most significantly to the loss on the fair value of derivatives during the six months ended June 30, 2009. In periods when the share price increases, the derivative securities become more attractive to exercise or in-the-money, and therefore the value of the derivative liabilities increases.

During the six months ended June 30, 2009, we recognized a loss on modification of debentures in the amount of $1,796,368. This loss arose from a court order that we allow an investor to convert its 2007 and 2008 debenture balances at $0.02 per share. The change in fair value immediately after the conversion price reduction from immediately before the conversion price reduction gave rise to the loss on modification.

Net Loss

Net loss for the six months ended June 30, 2009 and 2008 was $48,436,680 and $15,109,076, respectively. The change in loss in the current period is the result of changes to the fair value of derivatives, interest charges related to convertible debentures, a loss on the court order settlement of accounts payable, and loss on modification of debt.

Liquidity and Capital Resources

Cash Flows

The following table sets forth a summary of our cash flows for the periods indicated below:

	Six months ended June 30,	
	2009	2008
Net cash used in operating activities	$ (1,931,196)	$ (3,754,418)
Net cash used in investing activities	(5,558)	(168,549)
Net cash provided by financing activities	1,809,761	2,790,122
Net decrease in cash and cash equivalents	(126,993)	(1,132,845)
Cash and cash equivalents at the end of the period	$ 689,911	$ 33,271

Operating Activities

Our net cash used in operating activities during the six months ended June 30, 2009 and 2008 was $1,931,196 and $3,754,418, respectively. Cash used in operating activities decreased during the current period primarily due to a decrease in cash and cash equivalents available for use during the period. Cash used in operating activities decreased also as a result of the closures in May 2008 of the Alameda, California and Charlestown, Massachusetts facilities.

Cash Flows from Investing and Financing Activities

Cash used in investing activities during the six months ended June 30, 2009 and 2008 was $5,558 and $168,549, respectively. Our cash used in investing activities during the six months ended June 30, 2009 was attributed to payment of a deposit on our leased space in Los Angeles, California as well as a payment for the purchase of a fixed asset of approximately $3,000. Cash provided by investing activities during the six months ended June 30, 2008 was primarily due to purchases of property and equipment. Cash flows provided by financing activities during the six months ended June 30, 2009 was $1,809,761. During the six months ended June 30, 2009, we received $1,809,761 from the issuance of Series A-1 redeemable convertible preferred stock. During the six months ended June 30, 2008, we made payments of $18,650 on notes and leases and another $3,660 for issuance costs on a note payable. We also received proceeds of $600,000 from the issuance of a convertible note payable as well as $2,212,432 from the issuance of notes payable during the six months ended June 30, 2008.

We are financing our operations primarily from the following activities:

- On December 1, 2008, we formed an international joint venture with CHA Bio & Diostech Co., Ltd . (“CHA”), a leading Korean-based biotechnology company focused on the development of stem cell technologies. CHA has agreed to contribute $500,000 in working capital for the venture as well as paying the Company an up-front license fee of $500,000. As of June 30, 2009, CHA has paid the Company the entire $500,000 towards payment of the up-front license fee.

- On December 18, 2008, we entered into a license agreement with an Ireland-based investor, Transition Holdings Inc. (“Transition”), for certain of our non-core technology. Under the agreement, Transition agreed to acquire a license to the technology for $3.5 million in cash. As of June 30, 2009, we have received the entire $3.5 million in cash under this agreement.

    - On March 30, 2009, we entered into a license agreement with CHA under which we will license our RPE technology, for the treatment of diseases of the eye, to CHA for development and commercialization exclusively in Korea. We are eligible to receive up to a total of $1.9 million in fees based upon the parties achieving certain milestones, including us making an IND submission to the US FDA to commence clinical trials in humans using the technology. We received an up-front fee under the license in the amount of $1,100,000. Under the agreement, CHA will incur all of the cost associated with the RPA clinical trials in Korea. The agreement is part of the joint venture between the two companies.

- On March 3, 2009, we entered into a $5 million credit facility (“Facility”) with a life sciences fund. Under the agreement, the proceeds from the Facility must be used exclusively for us to file an investigational new drug (“IND”) for our retinal pigment epithelium (“RPE”) program, and will allow us to complete both Phase I and Phase II studies in humans. An IND is required to commence clinical trials. Under the terms of the agreement, we may draw down funds, as needed for clinical development of the RPE program, from the investor through the issuance of Series A-1 convertible preferred stock. The preferred stock pays dividends, in kind of preferred stock, at an annual rate of 10%, matures in four years from the initial issuance date, and is convertible into common stock at $0.75 per share. As of September 30, 2009, we have drawn down approximately $2,288,000 on this facility.

- On May 13, 2009, the Company entered into another license agreement with CHA under which the Company will license its proprietary “single blastomere technology,” which has the potential to generate stable cell lines, including RPE for the treatment of diseases of the eye, for development and commercialization exclusively in Korea. We received an upfront license fee of $300,000.

- On July 29, 2009, we entered into a consent, amendment and exchange agreement with holders of our outstanding convertible debentures and warrants, which were issued in private placements to the 2005, 2006, 2007 and 2008 debentures. We agreed to issue to each debenture holder in exchange for the holder’s debenture an amended and restated debenture in a principle amount equal to the principal amount of the holder’s debenture times 1.35 minus any interest paid thereon. The conversion price under the amended and restated debentures was reduced to $0.10, subject to certain customary anti-dilution adjustments. The maturity date under the amended and restated debentures was extended until December 30, 2010. The amended and restated debentures bear interest at 12% per annum. Further, we agreed to issue to each holder in exchange for the holder’s warrant an amended and restated warrant, which exercise price was reduced to $0.10, subject to certain customary anti-dilution adjustments. The termination date under the amended and restated warrants was extended until June 30, 2014. Simultaneously with the signing of this agreement, we and the debenture holders entered into a standstill and forbearance agreement, whereby the debenture holders agreed to forbear from exercising their rights and remedies under the original debentures and transaction documents.

To a substantially lesser degree, financing of our operations is provided through grant funding, payments received under license agreements, and interest earned on cash and cash equivalents.

With the exception of 2002, when we sold certain assets of a subsidiary resulting in a gain for the year, we have incurred substantial net losses each year since inception as a result of research and development and general and administrative expenses in support of our operations. We anticipate incurring substantial net losses in the future.

Our cash and cash equivalents are limited. In the short term, we will require substantial additional funding prior to June 30, 2010 in order to maintain our current level of operations. If we are unable to raise additional funding, we will be forced to either substantially scale back our business operations or curtail our business operations entirely.

On a longer term basis, we have no expectation of generating any meaningful revenues from our product candidates for a substantial period of time and will rely on raising funds in capital transactions to finance our research and development programs. Our future cash requirements will depend on many factors, including the pace and scope of our research and development programs, the costs involved in filing, prosecuting and enforcing patents, and other costs associated with commercializing our potential products. We intend to seek additional funding primarily through public or private financing transactions, and, to a lesser degree, new licensing or scientific collaborations, grants from governmental or other institutions, and other related transactions. If we are unable to raise additional funds, we will be forced to either scale back or business efforts or curtail our business activities entirely. We anticipate that our available cash and expected income will be sufficient to finance most of our current activities for at least four months from the date of this prospectus, although certain of these activities and related personnel may need to be reduced. We cannot assure you that public or private financing or grants will be available on acceptable terms, if at all. Several factors will affect our ability to raise additional funding, including, but not limited to, the volatility of our Common Stock.

Results of Operations

Comparison of the Years Ended December 31, 2008 and 2007

	2008		2007	
	Amount	% of Revenue	Amount	% of Revenue
Revenue	$ 787,106	100.0%	$ 647,349	100.0%
Cost of Revenue	765,769	97.3%	428,913	66.3%
Gross profit	21,337	2.7%	218,436	33.7%
Research and development expenses and Grant reimbursements	8,530,408	1083.8%	16,772,470	2590.9%
General and administrative expenses	5,009,418	636.4%	6,781,705	1047.6%
Non-operating income (expense):	(20,385,024)	-2589.9%	7,437,014	1148.8%
Net loss	$ (33,903,513)	-4307.4%	$ (15,898,725)	-2456.0%

Revenues

Revenues relate to license fees and royalties collected that are being amortized over the period of the license granted, and are therefore typically consistent between periods. The increase in revenue during the year ended December 31, 2008, was due to more new licenses being granted as compared to the year ended December 31, 2007. We received approximately $3,500,000 in license fees in 2008, and of that we recognized just $300,000 in license fee revenues during the year ended December 31, 2008. We also received an additional $1,500,000 from Transition Holdings, Inc. as license fee revenue in the first quarter 2009. We expect that our collaboration efforts with CHA Biotech in the SCRMI joint venture will provide us valuable opportunities to develop and license our technologies.

Research and Development Expenses and Grant Reimbursements

Research and development expenses (“R&D”) consists mainly of facility costs, payroll and payroll related expenses, research supplies and costs incurred in connection with specific research grants, and for scientific research. R&D expenditures declined from $16,772,470 in 2007 to $8,530,408 for 2008. The decline in R&D expenditures during the 2008 as compared to 2007 is primarily due to the fact that we closed our Charlestown, Massachusetts and Alameda, California facilities at the end of May 2008.

Our research and development expenses consist primarily of costs associated with basic and pre-clinical research exclusively in the field of human stem cell therapies and regenerative medicine, with focus on development of our technologies in cellular reprogramming, reduced complexity applications, and stem cell differentiation. These expenses represent both pre-clinical development costs and costs associated with non-clinical support activities such as quality control and regulatory processes. The cost of our research and development personnel is the most significant category of expense; however, we also incur expenses with third parties, including license agreements, sponsored research programs and consulting expenses.

We do not segregate research and development costs by project because our research is focused exclusively on human stem cell therapies as a unitary field of study. Although we have three principal areas of focus for our research, these areas are completely intertwined and have not yet matured to the point where they are separate and distinct projects. The intellectual property, scientists and other resources dedicated to these efforts are not separately allocated to individual projects, but rather are conducting our research on an integrated basis.

We expect that research and development expenses will increase in the foreseeable future as we add personnel, expand our pre-clinical research, begin clinical trial activities, and increase our regulatory compliance capabilities. The amount of these increases is difficult to predict due to the uncertainty inherent in the timing and extent of progress in our research programs, and initiation of clinical trials. In addition, the results from our basic research and pre-clinical trials, as well as the results of trials of similar therapeutics under development by others, will influence the number, size and duration of planned and unplanned trials. As our research efforts mature, we will continue to review the direction of our research based on an assessment of the value of possible commercial applications emerging from these efforts. Based on this continuing review, we expect to establish discrete research programs and evaluate the cost and potential for cash inflows from commercializing products, partnering with others in the biotechnology or pharmaceutical industry, or licensing the technologies associated with these programs to third parties.

We believe that it is not possible at this stage to provide a meaningful estimate of the total cost to complete our ongoing projects and bring any proposed products to market. The use of human embryonic stem cells as a therapy is an emerging area of medicine, and it is not known what clinical trials will be required by the FDA in order to gain marketing approval. Costs to complete could vary substantially depending upon the projects selected for development, the number of clinical trials required and the number of patients needed for each study. It is possible that the completion of these studies could be delayed for a variety of reasons, including difficulties in enrolling patients, delays in manufacturing, incomplete or inconsistent data from the pre-clinical or clinical trials, and difficulties evaluating the trial results. Any delay in completion of a trial would increase the cost of that trial, which would harm our results of operations. Due to these uncertainties, we cannot reasonably estimate the size, nature nor timing of the costs to complete, or the amount or timing of the net cash inflows from our current activities. Until we obtain further relevant pre-clinical and clinical data, we will not be able to estimate our future expenses related to these programs or when, if ever, and to what extent we will receive cash inflows from resulting products.

General and Administrative Expenses

General and administrative expenses for 2008 compared to 2007 decreased by $1,772,287 to $5,009,418 in 2008. This expense decrease was primarily a result of management’s efforts to reduce costs and streamline operations so that we could move closer to achieving profitability. General and administrative expenses should continue to slightly decrease over the short term as we continue to streamline our operations and reduce our costs until we are able to expand. We expect that with the successful IND submission of our core technologies and a rebound of the U.S. and world economy will come additional opportunities for growth and capital.

Other Income (Expense)

Other income (expense), net, for 2008 and 2007 was ($20,385,024) and $7,437,014, respectively. The change of ($27,822,038) is primarily due to the increase in interest expense, the decrease in the adjustments to fair value of derivatives and the loss on settlement of debt.

The interest expense including late fees was $26,614,761 and $21,023,663, for the years ended 2008 and 2007, respectively. The increase in interest expense is due to the additional debt that was issued and the late fees incurred as we have not issued shares to convert the debt to equity and we do not have the cash to pay down the notes. Further, the interest expense in 2008 was greater than in 2007 because we amortized remaining debt discounts on all outstanding debentures as a result of our default on August 6, 2008.

The gain on the fair value of derivatives was $13,082,247 and $32,835,057, for the years ended 2008 and 2007, respectively. The decline in our share price in 2007 and 2008 contributed most significantly to the gain on the fair value of derivatives. In periods when the share price declines, the derivative securities become less attractive to exercise or out-of-the-money, and therefore the value of the derivative liabilities declines.

During the year ended 2008, we had a loss of $5,436,137 related to debt settlement compared to a gain of $193,862 during the year ended 2007. Between September 29, 2008 and January 20, 2009, the Company settled certain past due accounts payable by the issuance of shares of its common stock. In aggregate, the Company settled $1,108,673 in accounts payable through the issuance of 260,116,283 shares of its common stock. A loss of $4,695,289 was recorded related to the settlement of this debt during the year ended December 31, 2008 related to the settlement of these payable balances.

Liquidity and Capital Resources

Cash Flows

The following table sets forth a summary of our cash flows for the periods indicated below:

	2008	2007
Net cash used in operating activities	$ (2,964,820)	$ (16,031,464)
Net cash used in investing activities	(174,514)	(139,873)
Net cash provided by financing activities	2,790,122	8,648,117
Net decrease in cash and cash equivalents	(349,212)	(7,523,220)
Cash and cash equivalents at the end of the period	$ 816,904	$ 1,166,116

As reflected in the accompanying financial statements, we have losses from operations, negative cash flows from operations, a substantial stockholders' deficit and current liabilities exceed current assets. We may thus not be able to continue as a going concern. Notwithstanding success in raising capital, there continues to be substantial doubt about the Company's ability to continue as a going concern.

In view of the matters described in the preceding paragraph, recoverability of a major portion of the recorded asset amounts shown in the accompanying consolidated balance sheet is dependent upon our continued operations, which, in turn, is dependent upon our ability to continue to raise capital and ultimately generate positive cash flows from operations. The financial statements do not include any adjustments relating to the recoverability and classification of recorded asset amounts or amounts and classifications of liabilities that might be necessary should we be unable to continue its existence.

Off-Balance Sheet Arrangements

We do not maintain any off-balance sheet arrangements, transactions, obligations or other relationships with unconsolidated entities that would be expected to have a material current or future effect upon our financial condition or results of operations.

MARKET PRICE OF AND DIVIDENDS ON REGISTRANT'S COMMON EQUITY AND RELATED STOCKHOLDER MATTERS

The Company's Common Stock is listed on the Over-the-Counter Bulletin Board under the symbol "ACTC." The following table sets forth the range of high and low bid prices of our common stock for the periods indicated. These prices are based on inter-dealer bid and asked prices, without markup, markdown, commissions, or adjustments and may not represent actual transactions.

Calendar Quarter	High Bid	Low Bid
2007 First Quarter	$ 1.19	$ 0.54

2007 Second Quarter	$	1.10	$	0.32
2007 Third Quarter	$	0.52	$	0.26
2007 Fourth Quarter	$	0.31	$	0.15
2008 First Quarter	$	0.25	$	0.14
2008 Second Quarter	$	0.13	$	0.06
2008 Third Quarter	$	0.07	$	0.01
2008 Fourth Quarter	$	0.05	$	0.02
2009 First Quarter	$	0.29	$	0.04
2009 Second Quarter	$	0.26	$	0.10
2009 Third Quarter (as of October 7, 2009)	$	0.24	$	0.11

As of October 7, 2009, the last sale price reported on the Over-the-Counter Bulletin Board for the Company's Common Stock was $0.13 per share.

As of October 7, 2009, there were approximately 278 shareholders of record of our common stock.

Penny Stock Rules

Our shares of Common Stock are subject to the "penny stock" rules of the Securities Exchange Act of 1934 and various rules under this Act. In general terms, "penny stock" is defined as any equity security that has a market price less than $5.00 per share, subject to certain exceptions. The rules provide that any equity security is considered to be a penny stock unless that security is registered and traded on a national securities exchange meeting specified criteria set by the SEC, authorized for quotation from the NASDAQ stock market, issued by a registered investment company, and excluded from the definition on the basis of price (at least $5.00 per share), or based on the issuer's net tangible assets or revenues. In the last case, the issuer's net tangible assets must exceed $3,000,000 if in continuous operation for at least three years or $5,000,000 if in operation for less than three years, or the issuer's average revenues for each of the past three years must exceed $6,000,000.

Trading in shares of penny stock is subject to additional sales practice requirements for broker-dealers who sell penny stocks to persons other than established customers and accredited investors. Accredited investors, in general, include individuals with assets in excess of $1,000,000 or annual income exceeding $200,000 (or $300,000 together with their spouse), and certain institutional investors. For transactions covered by these rules, broker-dealers must make a special suitability determination for the purchase of the security and must have received the purchaser's written consent to the transaction prior to the purchase. Additionally, for any transaction involving a penny stock, the rules require the delivery, prior to the first transaction, of a risk disclosure document relating to the penny stock. A broker-dealer also must disclose the commissions payable to both the broker-dealer and the registered representative, and current quotations for the security. Finally, monthly statements must be sent disclosing recent price information for the penny stocks. These rules may restrict the ability of broker-dealers to trade or maintain a market in our common stock, to the extent it is penny stock, and may affect the ability of shareholders to sell their shares.

Dividends

We have not declared any dividends on our Common Stock to date and we do not anticipate declaring or paying any cash dividends on our Common Stock in the foreseeable future.

Securities Authorized for Issuance Under Equity Compensation Plan

The following table shows information with respect to each equity compensation plan under which the Company's common stock is authorized for issuance as of the fiscal year ended December 31, 2008.

EQUITY COMPENSATION PLAN INFORMATION

Plan Category	Number of securities to be issued upon exercise of outstanding options, warrants and rights	Weighted average exercise price of outstanding options, warrants and rights	Number of securities remaining available for issuance under equity compensation plans (excluding securities reflected

	(a)	(b)	in column (a)) (c)
Equity compensation plans approved by security holders	23,496,705(1)	$ 0.52	16,030,589(2)
Equity compensation plans not approved by security holders	6,156,391	0.52	-
Total	29,653,096	0.52	16,030,589

(1) Awards for 2,492,000 options have been issued under the Advanced Cell Technology, Inc. 2004 Stock Option Plan I ("2004 Plan 1"), 1,301,161 options have been issued under the Advanced Cell Technology, Inc. 2004 Stock Option Plan II ("2004 Plan 2" and together with the 2004 Plan I, the "2004 ACT Plans"), and 19,703,544 options have been issued under the 2005 Stock Plan.

(2) This number included 308,000 shares available under the 2004 Plan I and 15,722,589 shares available under the 2005 Stock Plan.

CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE

None.

DIRECTORS, EXECUTIVE OFFICERS, PROMOTERS AND CONTROL PERSONS

Our directors are elected at the annual meeting of shareholders to hold office until the annual meeting of shareholders for the ensuing year or until their successors have been duly elected and qualified. Officers are elected annually by the Board of Directors and serve at the discretion of the Board. The directors and executive officers of the Company are as follows:

Name	Age	Position
William M. Caldwell, IV	61	Chief Executive Officer and Chairman of the Board of Directors
Robert P. Lanza M.D.	52	Chief Scientific Officer
Alan C. Shapiro, Ph.D.	63	Member of the Board of Directors
Erkki Ruoslahti, M.D., Ph.D.	68	Member of the Board of Directors
Gary Rabin	43	Member of the Board of Directors

Background of Executive Officers and Directors

William M. Caldwell, IV has been our Chief Executive Officer and Chairman of the Board of Directors since the acquisition of ACT in January 2005. He has a 30-year management career working with emerging technologies and restructuring distressed corporate environments. During his career he has served in senior executive positions both in marketing and finance. He has worked with Booz Allen and Hamilton; the Flying Tiger Line Inc.; Van Vorst Industries; and Kidder Peabody. He started a firm specializing in strategy and financial planning which was instrumental in restructuring over $1.0 billion of debt for over twenty companies and partnerships. He was a pioneer in the satellite radio auctions as President of Digital Satellite Broadcasting Corporation; assisted in the financing and became President and ultimately CEO in the restructuring of CAIS Internet, and has advised corporations, both public and private, in technology, telecommunications, retailing, real estate, hospitality, publishing, and transportation. He received his B.A. degree from the University of Southern California and was a Multinational Enterprise Fellow at the Wharton School of Business of the University of Pennsylvania . He serves as a director of Lee Pharmaceuticals and King Koil Franchising Corp. Mr. Caldwell is not an officer or director of any other reporting company.

Robert P. Lanza, M.D. has been our Chief Scientific Officer since October 2007 and has been with the Company since the acquisition of the ACT in January 2005. Dr. Lanza has over 20 years of research and industrial experience in the areas of tissue engineering and transplantation medicine. Before joining ACT in 1998, from 1990 to 1998, Dr. Lanza was Director of Transplantation Biology at BioHybrid Technologies, Inc., where he oversaw that company's xenotransplantation and bioartificial pancreas programs. He has edited or authored sixteen books, including Principles of Tissue Engineering (2d ed. co-edited with R. Langer and J. Vacante), Yearbook of Cell and Tissue Transplantation, One World The Health & Survival of the Human Species in the Twenty-First Century, and Xeno: The Promise of Transplanting Animal Organs into Humans (co-authored with D.K.C. Cooper). Dr. Lanza received his B.A. and M.D. Degrees from the University of Pennsylvania, where he was both a University Scholar and Benjamin Franklin

Scholar. Dr. Lanza is not an officer or director of any other reporting company.

Alan C. Shapiro, Ph.D. has served as director since 2005. He adds more than 30 years' experience in corporate and international financial management to the Company. Dr. Shapiro is currently the Ivadelle and Theodore Johnson Professor of Banking and Finance at the Marshall School of Business, University of Southern California, where he previously served as the Chairman of the Department of Finance and Business Economics, Marshall School of Business. Prior to joining the University of Southern California, Dr. Shapiro taught as an Assistant Professor at the University of Pennsylvania, Wharton School of Business, and has been a visiting professor at Yale University, UCLA, the Stockholm School of Economics, University of British Columbia, and the U.S. Naval Academy. Dr. Shapiro has published over 50 articles in such academic and professional journals as the Journal of Finance, Harvard Business Review, and the Journal of Business, among many others. He frequently serves as an expert witness in cases involving valuation, economic damages, international finance, takeovers, and transfer financing through Trident Consulting Group LLC. He received his B.A. in Mathematics from Rice University, and a Ph.D. in Economics from Carnegie Mellon University. Dr. Shapiro is a trustee of Pacific Corporate Group's Private Equity Fund.

Erkki Ruoslahti, M.D., Ph.D. has served as a director since November 2005. Dr. Ruoslahti joined The Burnham Institute in 1979 and served as its President from 1989 to 2002. Dr. Ruoslahti is the recipient of the 2005 Japan Prize for his work in cell biology. Dr. Ruoslahti's other honors include the Gairdner Prize, and membership in the U.S. National Academy of Sciences, Institute of Medicine, and American Academy of Arts and Sciences. He is a Knight of the Order of the White Rose of Finland. Dr. Ruoslahti earned his M.D. and Ph.D. from the University of Helsinki in Finland. After postdoctoral training at the California Institute of Technology, he held various academic appointments in Finland and at City of Hope National Medical Center in Duarte, California. Dr. Ruoslahti's research has been the basis of several drugs currently on the market or in clinical trials. He has been a founder and director of several biotechnology companies. Dr. Ruoslahti is not an officer or director of any other reporting company.

Gary Rabin has served as a director since December 2007. Mr. Rabin has a twenty year career in finance that primarily encompasses investment management and capital raising targeting small-cap and emerging growth companies. Currently, Mr. Rabin is the Managing Partner of Vine Holdings, a long/short hedge fund focused on the media and communications industry. Until July 2007, Mr. Rabin was a Portfolio Manager at MAC Investment Management, LLC ("MAC"), which he joined in November 2005. MAC is a long/short fundamental equity hedge fund concentrating on growth-oriented stocks including technology, communications and healthcare. Previously, Mr. Rabin was a Managing Director and Portfolio Manager at Marketus Associates, a long/short hedge fund where he focused on communications, healthcare services, energy and special situations. Prior to that, Mr. Rabin was Managing Director and Co-Head of the Media and Telecom Investment Banking Group at CIBC World Markets ("CIBC"), where he was responsible for all corporate finance and M&A, financial restructurings, and principal investing activities (both debt and equity) within the sector. Before joining CIBC, Mr. Rabin served in an operating capacity at a broadband services company when he was Chief Strategy Officer of CAIS Internet, Inc. ("CAIS"). At CAIS, he was responsible for raising over $500 million of financing commitments in both the public equity markets and from his relationships at Kohlberg, Kravis Roberts & Co., Qwest Communications, Cisco, Nortel, 3Com and Microsoft. Mr. Rabin has also started and served as Managing Director and Head of the Global Telecom Investment Banking Group at ING Barings Furman Selz, and was a founder of the telecom group at UBS Securities. Mr. Rabin began his career in finance in 1987, and concentrated on energy, utilities, and metals until 1993. Throughout his career, Mr. Rabin has been responsible for building and developing businesses. Mr. Rabin earned an AB in Economics from the University of Michigan.

EXECUTIVE COMPENSATION

Summary Compensation Table

The following table summarizes the annual compensation paid to our named executive officers for the two years ended December 31, 2008 and 2007:

Name and Principal Position	Year	Salary ($)	Bonus ($)	Stock Awards ($)	Option Awards ($)	All Other Compensation ($)	Total ($)
William M. Caldwell, IV	2008	350,000	-	-	-	995(1)	350,995
Chief Executive Officer and	2007	348,374	150,000	-	-	2,376(1)	500,750
Chairman of the Board of Directors							
Robert P. Lanza, M.D.,	2008	290,000	35,000	-	168,237	636(1)	493,873
Chief Scientific Officer	2007	342,805	50,000	-	28,910	483(1)	422,198
Jonathan F. Atzen	2008	78,077	-	93,669	1,598	3,001(2)	176,345
Sr. Vice President, General	2007	338,537	60,000	-	6,391	12,360(3)	417,288
Counsel and Secretary (3)							

Please see the assumptions relating to the valuation of our stock option awards which are contained in Notes to our unaudited and audited Financial Statements included in this prospectus.

(1) This amount represents a life insurance premium paid by the Company for the named executive officer.

(2) Effective as of March 7, 2008, Mr. Atzen resigned from his positions at the Company and terminated his employment arrangement with the Company. This amount represents $2,670 in payments made to Mr. Atzen as part of his $1,000 monthly car allowance through his termination date and $331 in life insurance premiums paid by the Company for Mr. Atzen.

3) This amount represents $12,000 in payments made to Mr. Atzen as part of his $1,000 monthly car allowance and $360 in life insurance premiums paid by the Company for Mr. Atzen.

Employment Agreements

Employment Agreement with William M. Caldwell, IV. On December 31, 2004, we entered into an employment agreement with William M. Caldwell, IV, our Chief Executive Officer. The agreement expired in June 2008. Certain terms of the agreement are on a month-to-month basis. The agreement provides for annual compensation in the amount of $200,000, increasing to $250,000 upon the completion of an equity financing that results in increased financing to us of at least $10 million, and an annual bonus of $50,000 until Mr. Caldwell's salary reaches $250,000, after which any bonus shall paid be at the discretion of the Board of Directors. We have also agreed to reimburse Mr. Caldwell for certain commuting expenses through June 2005 and relocation expenses after June 2005. Pursuant to his agreement, Mr. Caldwell received 1,903,112 options under the 2005 Stock Plan, 25% of which vested upon grant with the remainder vesting in equal monthly installments over 30 months. In the event of a change of control of us, 50% of any unvested options held by Mr. Caldwell will become vested. The agreement provides for severance in the amount of six months' salary in the event Mr. Caldwell's employment is terminated without cause and accelerated vesting of 50% of any unvested options. In the event Mr. Caldwell's employment is terminated without cause following a change of control, he is entitled to a lump sum severance payment equal to six months' base salary and accelerated vesting of 100% of any unvested stock options.

Mr. Caldwell's agreement contains non-solicitation, confidentiality and non-competition covenants, and a requirement that Mr. Caldwell assign all invention and intellectual property rights to us. The agreement may be terminated by either party with or without cause with thirty days' written notice.

Employment Agreement with Robert P. Lanza, M.D. On February 1, 2005, we entered into an employment agreement with Robert P. Lanza, M.D., who was promoted to Chief Scientific Officer effective October 6, 2007. The agreement provides for annual compensation in the amount of $215,000, plus a performance-based bonus of $35,000 for fiscal year 2005 upon the achievement of certain milestones established by the Chief Scientific Officer. Dr. Lanza received 500,000 stock options under the 2005 Stock Plan, which vest in equal monthly installments over 48 months. In addition, on September 16, 2005, Dr. Lanza was awarded 250,000 options that were immediately vested. In the event Dr. Lanza's employment is terminated following a change of control, 100% of any unvested options will become vested. In the event Dr. Lanza continues in the employment of a successor company following a change of control, the vesting of Dr. Lanza's unvested options will be accelerated by one year. Dr. Lanza's agreement provides for severance in the amount of twelve months' salary following termination of employment (1) as a result of disability, (2) without cause, (3) by Dr. Lanza following a material change in duties or a material breach by us, or (4) as a result of a change of control.

Dr. Lanza's agreement contains non-solicitation, confidentiality and non-competition covenants, and a requirement that Dr. Lanza assign all invention and intellectual property rights to us. The agreement terminated in accordance with its terms in February 2009.

Employment Agreement with Jonathan F. Atzen. On April 1, 2005, we entered into an employment agreement with Jonathan F. Atzen, our Senior Vice President and General Counsel. The agreement provides for annual compensation of $195,000, increasing to $245,000 upon the completion of an equity financing that results in increased financing to us of at least $10 million. The agreement provides for an annual bonus as determined by our Chief Executive Officer and our Board of Directors. Mr. Atzen received a one-time advance of an annual bonus in the amount of $40,000. Mr. Atzen was awarded 400,000 stock options under the 2005 Stock Plan, 10% of which vested upon grant with the remainder vesting in equal monthly installments over 48 months. In the event of a change of control of us, 50% of any unvested options held by Mr. Atzen will become vested. In the event Mr. Atzen's employment is terminated without cause by us or for good reason by Mr. Atzen, he is entitled to a lump sum severance payment equal to six months' base salary, accelerated vesting of 50% of his unvested stock options, and reimbursed cost of medical coverage for a period of six months. In the event Mr. Atzen is terminated without cause following a change of control, he is entitled to a lump sum severance payment equal to six months' base salary and accelerated vesting of 50% of any unvested stock options. Effective March 7, 2008, Mr. Atzen resigned from his positions with the Company and terminated his employment arrangement with the Company. In connection with Mr. Atzen's resignation, the Company agreed to (i) pay Mr. Atzen $48,333.33 as a severance payment, (ii) issue a fully vested option to purchase an aggregate of 400,000 shares of common stock of the Company, (iii) issue an aggregate of 936,692 shares of the common stock of the Company, (iv) provide for the vesting of all outstanding stock options held by Mr. Atzen and (v) provide Mr. Atzen and his family with full healthcare and dental coverage for a period of 6 months as was provided to Mr. Atzen during his employment.

Director Compensation for Year Ending December 31, 2008

The following table sets forth compensation paid to our non-employee directors during the year ended December 31, 2008.

DIRECTOR COMPENSATION

Name and Principal Position	Year	Fees Earned or Paid in Cash ($)	Stock Awards ($)	Option Awards ($)	All Other Compensation ($)	Total ($)
Alan C. Shapiro, Ph.D.	2008	70,000	-	-	-	70,000
Alan G. Walton, Ph.D., D.Sc. (1)	2008	-	-	-	-	-
Erkki Ruoslahti, M.D., Ph.D.	2008	-	-	-	-	-
Gary Rabin	2008	-	-	-	-	-

(1) Dr. Walton resigned from the board of directors in May 2008.

Director Compensation Arrangements

Non-executive members of the Company's Board of Directors receive (1) an initial grant of 100,000 shares of common stock, (2) an annual grant of 100,000 shares of common stock (this number has been increased to 200,000 for 2008), (3) an annual retainer of $40,000 (payable quarterly) and (4) a cash payment for attendance at each board meeting in the amount of $1,500 for in-person meetings and $1,000 for telephonic meetings. Regarding members of the Company's Audit Committee, the Chair receives a payment of $1,500 per meeting and the regular members receive $1,000 per meeting. With respect to the Company's Compensation Committee and the Company's Nominating and Corporate Governance Committee, the Chair receives a payment of $1,125 per meeting and the regular members receive $750 per meeting. Each director is entitled to receive payment of the directors' fees in the form of shares of the Company's Common Stock valued at 150% of the actual directors' fees due and payable. The fee structure for the directors was established and approved by the Compensation Committee and ratified by the full Board of Directors.

Outstanding Equity Awards at December 31, 2008

Name	Number of Securities Underlying Unexercised Options (#) Exercisable	Number of Securities Underlying Unexercised Options (#) Unexercisable	Option Exercise Price ($)	Option Expiration Date ($)
William M. Caldwell, IV	651,161(1)	-	0.25	12/31/2014
Chief Executive Officer and	1,903,112(1)	-	0.85	1/31/2015
Chairman of the Board of Directors				
Robert P. Lanza, M.D.,	750,000(2)	-	0.05	8/12/2014
Chief Scientific Officer	489,583(3)	10,417	0.85	1/31/2015
	250,000(2)	-	2.20	9/15/2015
	896,552(3)	3,103,448	0.21	2/7/2018

(1) These options held by Mr. Caldwell vest as follows: 25% vested immediately upon grant with the remainder vesting in equal monthly installments over 30 months.

(2) These options held by Dr. Lanza vested in full as of December 31, 2006.

(3) These options held by Dr. Lanza vest in equal monthly installments over 48 months.

SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT

The following table sets forth certain information, as of September 23, 2009 with respect to the beneficial ownership of the Company's outstanding Common Stock by (i) any holder of more than five (5%) percent; (ii) each of the Company's executive officers and directors; and (iii) the Company's directors and executive officers as a group. Except as otherwise indicated, each of the stockholders listed below has sole voting and investment power over the shares beneficially owned.

Name and Address of Beneficial Owner (1)	Number of Shares Beneficially Owned	Percentage (2)
5% or Greater Stockholders		
None		
Directors and Named Executive Officers		
William M. Caldwell, IV	2,801,021(3)	*
Robert P. Lanza, M.D.	2,686,135(4)	*
Alan C. Shapiro	6,129,432(5)	1.20%
Erkki Ruoslahti	120,086(6)	*

Gary Rabin	1,862,960(7)	*
Directors and Executive Officers as a Group (5 Persons)	13,599,634	2.66%

* Less than 1%

(1) Except as otherwise indicated, the address of each beneficial owner is c/o Advanced Cell Technology, Inc., 381 Plantation Street, Worcester, MA 01605.
(2) Applicable percentage ownership is based on 501,905,641 shares of Common Stock outstanding as of September 23, 2009, together with securities exercisable or convertible into shares of Common Stock within 60 days of September 23, 2009 for each stockholder. Beneficial ownership is determined in accordance with the rules of the Securities and Exchange Commission and generally includes voting or investment power with respect to securities. Shares of Common Stock that are currently exercisable or exercisable within 60 days of September 23, 2009 are deemed to be beneficially owned by the person holding such securities for the purpose of computing the percentage of ownership of such person, but are not treated as outstanding for the purpose of computing the percentage ownership of any other person.
(3) Includes 2,554,273 shares issuable upon exercise of stock options that are currently exercisable or exercisable within 60 days of September 23, 2009 that are held directly by Mr. Caldwell.
(4) Includes 2,386,135 shares issuable upon exercise of stock options that are currently exercisable or exercisable within 60 days of September 23, 2009.
(5) Includes (i) indirect ownership of 1,682,346 shares and 2,565,778 shares issuable upon conversion of convertible debentures held by The Shapiro Family Trust and of which Dr. Shapiro may be deemed the beneficial owner, (ii) 1,694,245 shares issuable upon exercise of warrants held by The Shapiro Family Trust and of which Dr. Shapiro may be deemed the beneficial owner, and (iii) 100,000 shares issuable upon exercise of stock options that are currently exercisable or exercisable within 60 days of September 23, 2009.
(6) Includes 100,000 shares issuable upon exercise of stock options that are currently exercisable or exercisable within 60 days of September 23, 2009.
(7) Includes indirect ownership of 1,862,960 shares issuable upon exercise of certain warrants and upon conversion of the debentures held by PDP I, LLC, which such number of shares represents Mr. Rabin's proportional interest in the total number of shares held by PDP I, LLC, based on his 33.33% equity interest in the entity.

CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS, AND CORPORATE GOVERNANCE

Certain Relationships and Related Transactions

Except as described below, none of the following parties has, since January 1, 2008, had any material interest, direct or indirect, in any transaction with us or in any presently proposed transaction that has or will materially affect us, other than as noted in this section:

- Any of our directors or officers,
- Any person proposed as a nominee for election as a director,
- Any person who beneficially owns, directly or indirectly, shares carrying more than 5% of the voting rights attached to our outstanding shares of common stock,
- Any of our promoters, and
- Any relative or spouse of any of the foregoing persons who has the same house as such person.

All references to share numbers in this section are on a pre-reverse split basis.

Private Equity Financing

Dr. Shapiro, one of the Company’s directors, may be deemed the beneficial owner of the securities owned by The Shapiro Family Trust. Refinanced bridge debt consisted of $70,000 in unsecured convertible notes previously issued and sold to The Shapiro Family Trust on March 21, 2008. The net outstanding amount of principal plus interest of the Notes was converted into the debt within the April 2008 debenture on a dollar-for-dollar basis.

Gary Rabin, a member of the Board of Directors may be deemed the beneficial owner of the securities owned by PDPI, LLC, in which he holds a partnership interest. Refinanced debt consisted of $60,000 in an unsecured note previously issued and sold to PDPI, LLC, and another $61,000 assumed by PDPI, LLC, and consisted of amounts owed by a third party which were rolled over into the April 2008 Debenture.

Consulting Services

Courtney Burrows, a family member of Mr. Caldwell, performed consulting services in 2008 that consisted of cell biology and technical writing services. For her services performed, she received approximately 6,300.

Director Independence

The Company complies with the standards of "independence" under the Nasdaq Marketplace Rules. Accordingly, a director will only qualify as an "independent director" if, in the opinion of our Board of Directors, that person does not have a material relationship with our company which would interfere with the exercise of independent judgment in carrying out the responsibilities of a director. A director who is, or at any time during the past three years, was employed by the Company or by any parent or subsidiary of the Company, shall not be considered independent. Accordingly, Dr. Alan Shapiro, Dr. Erkki Ruoslahti and Mr. Gary Rabin meet the definition of "independent director" under Nasdaq Marketplace Rule 4200(A)(15).

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ADDITIONAL INFORMATION

Federal securities laws require us to file information with the Commission concerning our business and operations. Accordingly, we file annual, quarterly, and special reports, and other information with the Commission. You can inspect and copy this information at the public reference facility maintained by the Commission at 100 F Street, NE, Washington, D.C. 20549.

You can get additional information about the operation of the Commission's public reference facilities by calling the Commission at 1-800-SEC-0330. The Commission also maintains a web site (http://www.sec.gov) at which you can read or download our reports and other information.

We have filed with the Commission a registration statement on Form S-1 under the Securities Act of 1933 with respect to the common stock being offered hereby. As permitted by the rules and regulations of the Commission, this prospectus does not contain all the information set forth in the registration statement and the exhibits and schedules thereto. For further information with respect to Advanced Cell Technology, Inc. and the common stock offered hereby, reference is made to the registration statement, and such exhibits and schedules. A copy of the registration statement, and the exhibits and schedules thereto, may be inspected without charge at the public reference facilities maintained by the Commission at the addresses set forth above, and copies of all or any part of the registration statement may be obtained from such offices upon payment of the fees prescribed by the Commission. In addition, the registration statement may be accessed at the Commission’s web site.

DISCLOSURE OF COMMISSION POSITION ON INDEMNIFICATION FOR SECURITIES ACT LIABILITIES

Our directors and officers are indemnified by our bylaws against amounts actually and necessarily incurred by them in connection with the defense of any action, suit or proceeding in which they are a party by reason of being or having been directors or officers of the Company. Our certificate of incorporation provides that none of our directors or officers shall be personally liable for damages for breach of any fiduciary duty as a director or officer involving any act or omission of any such director or officer. Insofar as indemnification for liabilities arising under the Securities Act of 1933, as amended, may be permitted to such directors, officers and controlling persons pursuant to the foregoing provisions, or otherwise, we have been advised that in the opinion of the Securities and Exchange Commission such indemnification is against public policy as expressed in the Securities Act and is, therefore, unenforceable.

In the event that a claim for indemnification against such liabilities, other than the payment by us of expenses incurred or paid by such director, officer or controlling person in the successful defense of any action, suit or proceeding, is asserted by such director, officer or controlling person in connection with the securities being registered, we will, unless in the opinion of counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Securities Act and will be governed by the final adjudication of such issue.

LEGAL MATTERS

The validity of the shares offered hereby will be passed upon for us by Sichenzia Ross Friedman Ference LLP, 61 Broadway, New York, New York 10006.

EXPERTS

The consolidated financial statements of Advanced Cell Technology, Inc. as of December 31, 2008 and 2007 and for the fiscal years then ended, included in this registration statement on Form S-1, have been audited by SingerLewak LLP, independent auditors, as stated in their report appearing with the financial statements. These financial statements are included in reliance upon the report of SingerLewak LLP given upon their authority as experts in accounting and auditing.

ADVANCED CELL TECHNOLOGY, INC. AND SUBSIDIARY
CONSOLIDATED BALANCE SHEETS
AS OF JUNE 30, 2009 AND DECEMBER 31, 2008

	June 30, 2009 (unaudited)	December 31, 2008
ASSETS		
CURRENT ASSETS:		
Cash and cash equivalents	$ 689,911	$ 816,904
Accounts receivable	-	261,504
Prepaid expenses	46,466	32,476
Deferred royalty fees, current portion	182,198	182,198
Total current assets	918,575	1,293,082
Property and equipment, net	251,406	400,008
Investment in joint venture	-	225,200
Deferred royalty fees, less current portion	568,389	659,488
Deposits	2,170	-
Deferred issuance costs, net of amortization of $289,790 and $8,666,387	4,691,209	-
TOTAL ASSETS	$ 6,431,749	$ 2,577,778
LIABILITIES AND STOCKHOLDERS' DEFICIT		
CURRENT LIABILITIES:		
Accounts payable	$ 6,718,901	$ 8,287,786
Accrued expenses	1,647,137	2,741,591
Accrued default interest	4,826,991	3,717,384
Deferred revenue, current portion	992,664	834,578
Advances payable, other	130,000	130,000
2005 Convertible debenture and embedded derivatives, net of discounts of $0 and $0	135,819	85,997
2006 Convertible debenture and embedded derivatives (fair value $2,733,345 and $1,993,354)	2,733,345	1,993,354
2007 Convertible debenture and embedded derivatives (fair value $17,859,334 and $7,706,344)	17,859,334	7,706,344
February 2008 Convertible debenture and embedded derivatives (fair value $1,775,904 and $1,757,470)	1,775,904	1,757,470
April 2008 Convertible debenture and embedded derivatives (fair value $8,165,561 and $4,066,505)	8,165,561	4,066,505
Warrant and option derivative liabilities	26,334,356	2,655,849
Embedded derivative liability	540,098	-
Deferred joint venture obligations, current portion	130,644	167,335
Short term capital leases	12,955	12,955
Notes payable, other	468,425	468,425
Total current liabilities	72,472,134	34,625,573

Deferred joint venture obligations, less current portion	16,979	63,473
Deferred revenue, less current portion	6,172,659	3,817,716
Total liabilities	78,661,772	38,506,762
Series A-1 redeemable convertible preferred stock, $0.001 par value; 50,000,000 shares authorized,		
181 and 0 shares issued and outstanding; aggregate liquidation value: $1,841,109 and $0, respectively	1,579,994	-
Commitments and contingencies	-	-
STOCKHOLDERS' DEFICIT:		
Common stock, $0.001par value; 500,000,000 shares authorized,		
499,905,641 and 429,448,381 issued and outstanding	499,906	429,448
Additional paid-in capital	63,944,361	53,459,172
Accumulated deficit	(138,254,284)	(89,817,604)
Total stockholders' deficit	(73,810,017)	(35,928,984)
TOTAL LIABILITIES AND STOCKHOLDERS' DEFICIT	$ 6,431,749	$ 2,577,778

The accompanying notes are an integral part of these consolidated financial statements.

ADVANCED CELL TECHNOLOGY, INC. AND SUBSIDIARY
CONSOLIDATED STATEMENTS OF OPERATIONS
FOR THE THREE AND SIX MONTHS ENDED JUNE 30, 2009 AND 2008
(UNAUDITED)

	Three Months Ended June 30,		Six Months Ended June 30,	
	2009	2008	2009	2008
Revenue (License fees and royalties)	$ 242,995	$ 174,388	$ 536,971	$ 298,731
Cost of Revenue	77,347	120,186	216,099	310,914
Gross profit	165,648	54,202	320,872	(12,183)
Operating expenses:				
Research and development	1,138,258	2,786,870	1,574,865	6,754,422
Grant reimbursements	-	-	(136,840)	(105,169)
General and administrative expenses	760,556	1,840,116	1,507,634	3,565,938
Loss on settlement of litigation	-	-	4,793,949	-
Total operating expenses	1,898,814	4,626,986	7,739,608	10,215,191
Loss from operations	(1,733,166)	(4,572,784)	(7,418,736)	(10,227,374)
Non-operating income (expense):				
Interest income	137	1,317	1,758	8,166
Interest expense and late fees	(953,089)	(8,540,674)	(1,535,910)	(12,747,290)
Charges related to issuance of 2008 convertible debentures	-	(531,769)	-	(1,217,342)
Income related to repricing of 2006 and 2007 convertible debentures and warrants	-	847,588	-	847,588
Adjustments to fair value of derivatives	(26,701,374)	7,206,905	(37,542,986)	8,227,176
Losses attributable to equity method investment	(49,312)	-	(144,438)	-
Loss on modification of debentures	-	-	(1,796,368)	-
Total non-operating income (expense)	(27,703,638)	(1,016,633)	(41,017,944)	(4,881,702)
Loss before income tax	(29,436,804)	(5,589,417)	(48,436,680)	(15,109,076)
Income tax	-	-	-	-
Net loss	$ (29,436,804)	$ (5,589,417)	$ (48,436,680)	$ (15,109,076)
Weighted average shares outstanding :				
Basic	499,905,641	153,438,333	476,926,873	124,654,606
Diluted	499,905,641	153,438,333	476,926,873	124,654,606
Loss per share:				
Basic	$ (0.06)	$ (0.04)	$ (0.10)	$ (0.12)
Diluted	$ (0.06)	$ (0.04)	$ (0.10)	$ (0.12)

The accompanying notes are an integral part of these consolidated financial statements.

ADVANCED CELL TECHNOLOGY, INC. AND SUBSIDIARY
CONSOLIDATED STATEMENT OF STOCKHOLDERS' DEFICIT
FOR THE SIX MONTHS ENDED JUNE 30 2009
(UNAUDITED)

	Common Stock Shares	Common Stock Amount	Additional Paid-in Capital	Accumulated Deficit	Total Stockholders' Deficit
Balance December 31, 2008	429,448,381	$ 429,448	$ 53,459,172	$ (89,817,604)	$ (35,928,984)
Convertible debentures conversions	6,176,413	6,177	325,625	-	331,802
Option compensation charges			193,697		193,697
Issuance of stock in settlement of accounts payable	39,380,847	39,381	5,259,767		5,299,148
Issuance of stock in payment of debt issue costs for Series A-1 redeemable convertible preferred stock	24,900,000	24,900	4,706,100		4,731,000
Net loss for the six months ended June 30, 2009	-	-	-	(48,436,680)	(48,436,680)
Balance June 30, 2009	499,905,641	$ 499,906	$ 63,944,361	$ (138,254,284)	$ (73,810,017)

The accompanying notes are an integral part of these consolidated financial statements

ADVANCED CELL TECHNOLOGY, INC. AND SUBSIDIARY
CONSOLIDATED STATEMENTS OF CASH FLOWS
FOR THE SIX MONTHS ENDED JUNE 30, 2009 AND 2008
(UNAUDITED)

	Six Months Ended June 30, 2009	2008
CASH FLOWS FROM OPERATING ACTIVITIES:		
Net loss	$ (48,436,680)	$ (15,109,076)
Adjustments to reconcile net loss to net cash used in operating activities:		
Depreciation and amortization	232,752	211,893
Write-off of uncollectible accounts receivable	-	25,000
Amortization of deferred charges	91,099	433,413
Amortization of deferred revenue	(536,971)	(311,160)
Redeemable preferred stock dividend accrual	31,348	-
Stock based compensation	193,697	645,602
Amortization of deferred issuance costs	289,790	2,896,649
Amortization of discounts	10,230	9,525,843
Loss on modification of debentures	1,796,368	-
Adjustments to fair value of derivatives	37,542,986	(8,227,176)
Charges related to issuance of 2008 convertible debentures	-	1,217,342
Repricing of 2006 and 2007 convertible debentures and warrants	-	(847,588)
Shares of common stock issued for services	-	8,616
Warrants issued for consulting services	-	155,281
Charges related to settlement of anti-dilution provision	-	15,581
Issuance of note for services received	-	750,000
Shares of common stock issued for financing costs	-	316,059
Non-cash rent expense	-	254,231
Forfeiture of rent deposits	-	88,504
Loss on settlement of litigation	4,793,949	-
Loss attributable to investment in joint venture	144,438	-
Amortization of deferred joint venture obligations	(83,185)	-
(Increase) / decrease in assets:		
Accounts receivable	261,504	(4,767)
Prepaid expenses	(13,990)	(39,192)
Increase / (decrease) in current liabilities:		
Accounts payable and accrued expenses	(2,408,138)	3,785,714
Accrued default interest	1,109,607	4,813
Deferred revenue	3,050,000	450,000
Net cash used in operating activities	(1,931,196)	(3,754,418)
CASH FLOWS FROM INVESTING ACTIVITIES		
Purchases of property and equipment	(3,388)	(168,549)
Payment of deposits	(2,170)	-
Net cash used in investing activities	(5,558)	(168,549)

CASH FLOWS FROM FINANCING ACTIVITIES:		
Proceeds from issuance of convertible notes	-	2,812,432
Payments on notes and leases	-	(18,650)
Payment for issuance costs on note payable	-	(3,660)
Proceeds from issuance of Series A-1 redeemable convertible preferred stock	1,809,761	-
Net cash provided by financing activities	1,809,761	2,790,122
NET DECREASE IN CASH AND CASH EQUIVALENTS	(126,993)	(1,132,845)
CASH AND CASH EQUIVALENTS, BEGINNING BALANCE	816,904	1,166,116
CASH AND CASH EQUIVALENTS, ENDING BALANCE	$ 689,911	$ 33,271
CASH PAID FOR:		
Interest	$ -	$ 2,504
Income taxes	$ 514	$ -
SUPPLEMENTAL DISCLOSURE OF NON-CASH FINANCING ACTIVITIES:		
Issuance of 45,030,046 shares of common stock in redemption of convertible debentures	$ -	$ 4,634,221
Issuance of 6,176,413 and 38,100,654 shares of common stock in conversion of convertible debentures	$ 331,802	$ 5,915,442
Issuance of 24,900,000 shares of common stock in payment of convertible preferred stock issuance costs	$ 4,731,000	$ -
Issuance of 39,380,847 shares of common stock in settlement of litigation	$ 5,299,148	$ -
Issuance of 70,503 shares of common stock to settle an anti-dilution provision feature of convertible debenture	$ -	$ 15,581
Issuance of 1,200,000 shares of common stock upon cash-less exercise of employee stock options	$ -	$ 60,000

The accompanying notes are an integral part of these consolidated financial statements.

ADVANCED CELL TECHNOLOGY, INC. AND SUBSIDIARY
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
June 30, 2009

1. ORGANIZATIONAL MATTERS

Organization and Nature of Business

Advanced Cell Technology, Inc. (the "Company") is a biotechnology company, incorporated in the state of Delaware, focused on developing and commercializing human embryonic and adult stem cell technology in the emerging fields of regenerative medicine. Principal activities to date have included obtaining financing, securing operating facilities, and conducting research and development. The Company has no therapeutic products currently available for sale and does not expect to have any therapeutic products commercially available for sale for a period of years, if at all. These factors indicate that the Company's ability to continue its research and development activities is dependent upon the ability of management to obtain additional financing as required.

Going Concern

As reflected in the accompanying financial statements, the Company has losses from operations, negative cash flows from operations, a substantial stockholders' deficit and current liabilities exceed current assets. The Company may thus not be able to continue as a going concern and fund cash requirements for operations through the next 12 months with current cash reserves. As discussed below, the Company was able to raise additional cash during the first six months of 2009. Notwithstanding success in raising capital, there continues to be substantial doubt about the Company's ability to continue as a going concern.

In view of the matters described in the preceding paragraph, recoverability of a major portion of the recorded asset amounts shown in the accompanying consolidated balance sheets is dependent upon continued operations of the Company, which, in turn, is dependent upon the Company's ability to continue to raise capital and ultimately generate positive cash flows from operations. The financial statements do not include any adjustments relating to the recoverability and classification of recorded asset amounts or amounts and classifications of liabilities that might be necessary should the Company be unable to continue its existence.

Management has taken or plans to take the following steps that it believes will be sufficient to provide the Company with the ability to continue in existence:

- Between September 29, 2008 and January 20, 2009, the Company settled certain past due accounts payable by the issuance of shares of its common stock. In aggregate, the Company settled $1,108,673 in accounts payable through the issuance of 260,116,283 shares of its common stock.

- On December 18, 2008, the Company entered into a license agreement with an Ireland-based investor, Transition Holdings Inc. ("Transition"), for certain of its non-core technology. Under the agreement, Transition agreed to acquire a license to the technology for $3.5 million in cash. Through December 31, 2008, the Company had received $2 million in cash under this agreement. During the six months ended June 30, 2009, the Company received $1.5 million in cash under this agreement. The Company expects to apply the proceeds towards its retinal epithelium ("RPE") cells program. See Note 3.

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- On March 30, 2009, the Company entered into a license agreement with CHA Bio & Diostech Co., Ltd. (“CHA”) under which the Company will license its retinal pigment epithelium (“RPE”) technology, for the treatment of diseases of the eye, to CHA for development and commercialization exclusively in Korea. The Company is eligible to receive up to a total of $1.9 million in fees based upon the parties achieving certain milestones, including the Company making an IND submission to the US FDA to commence clinical trials in humans using the technology. The Company received an up-front fee under the license in the amount of $1,100,000 during the second quarter of 2009. Under the agreement, CHA will incur all of the costs associated with the RPA clinical trials in Korea. The agreement is part of continuing cooperation and collaboration between the two companies. See Note 3.

- On March 11, 2009, the Company entered into a $5 million credit facility (“Facility”) with a life sciences fund. Under the agreement, the proceeds from the Facility must be used exclusively for the Company to file an investigational new drug (“IND”) for its retinal pigment epithelium (“RPE”) program, and will allow the Company to complete both Phase I and Phase II studies in humans. An IND is required to commence clinical trials. Under the terms of the agreement, the Company may draw down funds, as needed for clinical development of the RPE program, from the investor through the issuance of Series A-1 redeemable convertible preferred stock. The preferred stock pays dividends, in kind of preferred stock, at an annual rate of 10%, matures in four years from the initial issuance date, and is convertible into common stock at $0.75 per share. As of August 10, 2009, the Company has drawn down approximately $2,169,000 on this facility. See Note 11.

- On May 13, 2009, the Company entered into another license agreement with CHA under which the Company will license its proprietary “single blastomere technology,” which has the potential to generate stable cell lines, including RPE for the treatment of diseases of the eye, for development and commercialization exclusively in Korea. The Company received an upfront license fee of $300,000. See Note 3.

- On July 29, 2009, the Company entered into a consent, amendment and exchange agreement with holders of the Company’s outstanding convertible debentures and warrants, which were issued in private placements to the 2005, 2006, 2007 and 2008 debentures. The Company agreed to issue to each debenture holder in exchange for the holder’s debenture an amended and restated debenture in a principle amount equal to the principal amount of the holder’s debenture times 1.35 minus any interest paid thereon. The conversion price under the amended and restated debentures was reduced to $0.10, subject to certain customary anti-dilution adjustments. The maturity date under the amended and restated debentures was extended until December 30, 2010. The amended and restated debentures bear interest at 12% per annum. Further, the Company agreed to issue to each holder in exchange for the holder’s warrant an amended and restated warrant, which exercise price was reduced to $0.10, subject to certain customary anti-dilution adjustments. The termination date under the amended and restated

warrants was extended until June 30, 2014. Simultaneously with the signing of this agreement, the Company and the debenture holders entered into a standstill and forbearance agreement, whereby the debenture holders agreed to forbear from exercising their rights and remedies under the original debentures and transaction documents.

- Management anticipates raising additional future capital from its current convertible debenture holders, or other financing sources, that will be used to fund any capital shortfalls. The terms of any financing will likely be negotiated based upon current market terms for similar financings. No commitments have been received for additional investment and no assurances can be given that this financing will ultimately be completed.

- Management has focused its scientific operations on product development in order to accelerate the time to market products which will ultimately generate revenues. While the amount or timing of such revenues cannot be determined, management believes that focused development will ultimately provide a quicker path to revenues, and an increased likelihood of raising additional financing.

- Management will continue to pursue licensing opportunities of the Company’s extensive intellectual property portfolio.

2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Basis of Presentation —The accompanying consolidated financial statements have been prepared in accordance with accounting principles generally accepted in the United States of America (“GAAP”).

Principles of Consolidation —The accounts of the Company and its wholly-owned subsidiary Mytogen, Inc. (“Mytogen”) are included in the accompanying consolidated financial statements. All intercompany balances and transactions were eliminated in consolidation.

Segment Reporting —SFAS No. 131, “Disclosure about Segments of an Enterprise and Related Information” requires use of the “management approach” model for segment reporting. The management approach model is based on the way a company’s management organizes segments within the company for making operating decisions and assessing performance. The Company determined it has one operating segment. Disaggregation of the Company’s operating results is impracticable, because the Company’s research and development activities and its assets overlap, and management reviews its business as a single operating segment. Thus, discrete financial information is not available by more than one operating segment.

Use of Estimates —These consolidated financial statements have been prepared in accordance with accounting principles generally accepted in the United States and, accordingly, require management to make estimates and assumptions that affect the reported amounts of assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Specifically, the Company’s management has estimated variables used to calculate the Black-Scholes option pricing model used to value derivative instruments as discussed below under “Fair Value Measurements”. In addition, management has estimated the expected economic life and value of the Company’s licensed technology, the Company’s net operating loss for tax purposes, share-based payments for compensation to employees, directors, consultants and investment banks, and the useful lives of the Company’s fixed assets and its accounts receivable allowance. Actual results could differ from those estimates.

Reclassifications —Certain prior year financial statement balances have been reclassified to conform to the current year presentation. These reclassifications had no effect on the recorded net loss.

Cash and Cash Equivalents —Cash equivalents are comprised of certain highly liquid investments with maturities of three months or less when purchased. The Company maintains its cash in bank deposit accounts, which at times, may exceed federally insured limits. The Company has not experienced any losses related to this concentration of risk. As of June 30, 2009 and December 31, 2008, the Company had deposits in excess of federally-insured limits totaling $284,269 and $655,074, respectively. The Company has not experienced any losses in such accounts.

Accounts Receivable —The Company periodically assesses its accounts receivable for collectability on a specific identification basis. Past due status on accounts receivable is based on contractual terms. If collectability of an account becomes unlikely, the Company records an allowance for that doubtful account. Once the Company has exhausted efforts to collect, management writes off the account receivable against the allowance it has already created. The Company does not require collateral for its trade accounts receivable.

Property and Equipment — The Company records its property and equipment at historical cost. The Company expenses maintenance and repairs as incurred. Upon disposition of property and equipment, the gross cost and accumulated depreciation are written off and the difference between the proceeds and the net book value is recorded as a gain or loss on sale of assets. In the case of certain assets acquired under capital leases, the assets are recorded net of imputed interest, based upon the net present value of future payments. Assets under capital lease are pledged as collateral for the related lease.

The Company provides for depreciation over the assets' estimated useful lives as follows:

Machinery & equipment	4 years
Computer equipment	3 years
Office furniture	4 years
Leasehold improvements	Lesser of lease life or economic life
Capital leases	Lesser of lease life or economic life

Equity Method Investment — The Company follows Accounting Principles Board Opinion No. 18 The Equity Method of Accounting for Investments in Common Stock ("APB No. 18") in accounting for its investment in the joint venture. In the event the Company's share of the joint venture's net losses reduces the Company's investment to zero, the Company will discontinue applying the equity method and will not provide for additional losses unless the Company has guaranteed obligations of the joint venture or is otherwise committed to provide further financial support for the joint venture. If the joint venture subsequently reports net income, the Company will resume applying the equity method only after its share of that net income equals the share of net losses not recognized during the period the equity method was suspended.

Deferred Issuance Costs —Payments, either in cash or share-based payments, made in connection with the sale of debentures are recorded as deferred debt issuance costs and amortized using the effective interest method over the lives of the related debentures. The weighted average amortization period for deferred debt issuance costs is 48 months.

Intangible and Long-Lived Assets — The Company follows Statement of Financial Accounting Standards ("FAS") No. 144, "Accounting for Impairment of Disposal of Long-Lived Assets," which established a "primary asset" approach to determine the cash flow estimation period for a group of assets and liabilities that represents the unit of accounting for a long-lived asset to be held and used. Long-lived assets to be held and used are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount of an asset may not be recoverable. The carrying amount of a long-lived asset is not recoverable if it exceeds the sum of the undiscounted cash flows expected to result from the use and eventual disposition of the asset. Long-lived assets to be disposed of are reported at the lower of carrying amount or fair value less cost to sell. During the six months ended June 30, 2009 and 2008, no impairment loss was recognized.

Fair Value Measurements — For certain financial instruments, including accounts receivable, accounts payable, accrued expenses, interest payable, advances payable and notes payable, the carrying amounts approximate fair value due to their relatively short maturities.

Emerging Issues Task Force ("EITF") No. 00-19 "Accounting for Derivative Financial Instruments Indexed to and Potentially Settled in, a Company's Own Stock" ("EITF 00-19"), provides a criteria for determining whether freestanding contracts that are settled in a company's own stock, including common stock options and warrants, should be designated as either an equity instrument, an asset or as a liability under SFAS No. 133 "Accounting for Derivative Instruments and Hedging Activities." Under the provisions of EITF 00-19, a contract designated as an asset or a liability must be carried at fair value on a company's balance sheet, with any changes in fair value recorded in a company's results of operations. Using the criteria in EITF 00-19, the Company has determined that its outstanding options, warrants, and embedded derivative liabilities require liability accounting and records the fair values as warrant and option derivatives.

On January 1, 2008, the Company adopted FAS No. 157, "Fair Value Measurements" ("FAS 157"). FAS 157 defines fair value, and establishes a three-level valuation hierarchy for disclosures of fair value measurement that enhances disclosure requirements for fair value measures. The carrying amounts reported in the consolidated balance sheets for receivables and current liabilities each qualify as financial instruments and are a reasonable estimate of their fair

values because of the short period of time between the origination of such instruments and their expected realization and their current market rate of interest. The three levels of valuation hierarchy are defined as follows:

- Level 1 inputs to the valuation methodology are quoted prices for identical assets or liabilities in active markets.

- Level 2 inputs to the valuation methodology include quoted prices for similar assets and liabilities in active markets, and inputs that are observable for the asset or liability, either directly or indirectly, for substantially the full term of the financial instrument.

- Level 3 inputs to the valuation methodology are unobservable and significant to the fair value measurement.

FAS 133, “Accounting for Derivative Instruments and Hedging Activities” requires bifurcation of embedded derivative instruments and measurement of fair value for accounting purposes. In addition, FAS 155, “Accounting for Certain Hybrid Financial Instruments” requires measurement of fair values of hybrid financial instruments for accounting purposes. The Company applied the accounting prescribed in FAS 133 to account for its 2005 Convertible Debenture as described in Note 9. For practicality in the valuation of the debentures and for ease of presentation, the Company applied the accounting prescribed in FAS 155 to account for the 2006, 2007, February 2008, and April 2008 Convertible Debentures as described below in Notes 5, 6, 7, and 8.

In determining the appropriate fair value of the debentures, the Company used Level 2 inputs for its valuation methodology. For the periods from January 1, 2008 through June 30, 2008, the Company applied the Black-Scholes models, Binomial Option Pricing models, Standard Put Option Binomial models and the net present value of certain penalty amounts to value the debentures and their embedded derivatives. At December 31, 2008, to achieve greater cost efficiencies, the Company changed its application of the Income Approach as defined under paragraph 18 of FAS 157, by applying the Black-Scholes option pricing model in valuing all debentures and their embedded derivatives. This change did not materially impact the results of the Company’s valuations of its debentures and embedded derivatives. The impact of the change in the application of the Income Approach was approximately 1.4% of the fair value of the Company’s debentures and their embedded derivatives. FAS 157, paragraph 20 states that the disclosure provisions of Statement of Financial Accounting Standards No. 154 Accounting Changes and Error Corrections (“FAS 154”) for a change in accounting estimate are not required for revisions resulting from a change in a valuation technique or its application.

Derivative liabilities are adjusted to reflect fair value at each period end, with any increase or decrease in the fair value being recorded in results of operations as adjustments to fair value of derivatives. The effects of interactions between embedded derivatives are calculated and accounted for in arriving at the overall fair value of the financial instruments. In addition, the fair values of freestanding derivative instruments such as warrant and option derivatives are valued using the Black-Scholes model.

At June 30, 2009, the Company identified the following assets and liabilities that are required to be presented on the balance sheet at fair value:

Derivative Liabilities	Fair Value As of June 30, 2009	Fair Value Measurements at June 30, 2009 Using Fair Value Hierarchy Level 1	Level 2	Level 3
Conversion option - 2005 debenture	53,897	-	53,897	-
2006 Convertible debenture and embedded derivatives	2,733,345	-	2,733,345	-
2007 Convertible debenture and embedded derivatives	17,859,334	-	17,859,334	-
February 2008 Convertible debentures and embedded derivatives	1,775,904	-	1,775,904	-
April 2008 Convertible debenture and embedded derivatives	8,165,561	-	8,165,561	-
Embedded derivative liability	540,098	-	540,098	-
Warrant and option derivatives	26,334,356	-	26,334,356	-
	57,462,495	-	57,462,495	-

For the three months ended June 30, 2009 and 2008, the Company recognized a gain (loss) of ($26,701,374) and $7,206,905, respectively, for the changes in the valuation of the aforementioned liabilities. For the six months ended June 30, 2009 and 2008, the Company recognized a gain (loss) of ($37,542,986) and $8,227,176, respectively, for the changes in the valuation of the aforementioned liabilities.

The Company did not identify any other non-recurring assets and liabilities that are required to be presented in the consolidated balance sheets at fair value in accordance with FAS 157.

In February 2007, the FASB issued FAS No. 159, “The Fair Value Option for Financial Assets and Financial Liabilities” (“FAS 159”). FAS 159 permits entities to choose to measure many financial assets and financial liabilities at fair value. Unrealized gains and losses on items for which the fair value option has been elected are reported in earnings. FAS 159 is effective as of the beginning of an entity’s first fiscal year that begins after November 15, 2007. The Company adopted FAS 159 on January 1, 2008. The Company chose not to elect the option to measure the fair value of eligible financial assets and liabilities.

Revenue Recognition — The Company’s revenues are generated from license and research agreements with collaborators. Licensing revenue is recognized on a straight-line basis over the shorter of the life of the license or the estimated economic life of the patents related to the license. License fee revenue begins to be recognized in the first full month following the effective date of the license agreement. Deferred revenue represents the portion of the license and other payments received that has not been earned. Costs associated with the license revenue are deferred and recognized over the same term as the revenue. Reimbursements of research expense pursuant to grants are recorded in the period during which collection of the reimbursement becomes assured, because the reimbursements are subject to approval.

Research and Development Costs —Research and development costs consist of expenditures for the research and development of patents and technology, which cannot be capitalized. The Company’s research and development costs consist mainly of payroll and payroll related expenses, research supplies and research grants. Reimbursements of research expense pursuant to grants are recorded in the period during which collection of the reimbursement becomes assured, because the reimbursements are subject to approval. Research and development costs are expensed as incurred.

Share-Based Compensation —Effective January 1, 2006, the Company adopted the fair value recognition provisions of FAS 123(R), using the modified-prospective transition method. Under this method, stock-based compensation expense is recognized in the consolidated financial statements for stock options granted, modified or settled after the adoption date. In accordance with FAS 123(R), the unamortized portion of options granted prior to the adoption date

is recognized into earnings after adoption. Results for prior periods have not been restated, as provided for under the modified-prospective method.

Under FAS 123(R), stock-based compensation expense recognized is based on the value of the portion of share-based payment awards that are ultimately expected to vest during the period. Based on this, our stock-based compensation is reduced for estimated forfeitures at the time of grant and revised, if necessary, in subsequent periods if actual forfeitures differ from those estimates.

The fair value of each stock option is estimated on the date of grant using the Black-Scholes option pricing model. No options were granted during the six months ended June 30, 2009. Assumptions relative to volatility and anticipated forfeitures are determined at the time of grant with the following weighted average assumptions used in the three and six months ended June 30, 2008:

Expected life in years	4.0
Volatility	148%
Risk free interest rate	2.50%
Expected dividends	None
Expected forfeitures	13%

The assumptions used in the Black-Scholes models referred to above are based upon the following data: (1) The expected life of the option is estimated by considering the contractual term of the option, the vesting period of the option, the employees' expected exercise behavior and the post-vesting employee turnover rate. (2) The expected stock price volatility of the underlying shares over the expected term of the option is based upon historical share price data. (3) The risk free interest rate is based on published U.S. Treasury Department interest rates for the expected terms of the underlying options. (4) Expected dividends are based on historical dividend data and expected future dividend activity. (5) The expected forfeiture rate is based on historical forfeiture activity and assumptions regarding future forfeitures based on the composition of current grantees.

In accordance with FAS 123(R), the benefits of tax deductions in excess of the compensation cost recognized for options exercised during the period are classified as financing cash inflows rather than operating cash inflows.

Income Taxes — Deferred income taxes are provided using the liability method whereby deferred tax assets are recognized for deductible temporary differences and operating loss and tax credit carryforwards, and deferred tax liabilities are recognized for taxable temporary differences. Temporary differences are the differences between the reported amounts of assets and liabilities and their tax bases. Deferred tax assets are reduced by a valuation allowance when, in the opinion of management, it is more likely than not that some portion or all of the deferred tax assets will not be realized. Deferred tax assets and liabilities are adjusted for the effects of the changes in tax laws and rates of the date of enactment.

When tax returns are filed, it is highly certain that some positions taken would be sustained upon examination by the taxing authorities, while others are subject to uncertainty about the merits of the position taken or the amount of the position that would be ultimately sustained. The benefit of a tax position is recognized in the financial statements in the period during which, based on all available evidence, management believes it is more likely than not that the position will be sustained upon examination, including the resolution of appeals or litigation processes, if any. Tax positions taken are not offset or aggregated with other positions. Tax positions that meet the more-likely-than-not recognition threshold are measured as the largest amount of tax benefit that is more than 50 percent likely of being realized upon settlement with the applicable taxing authority. The portion of the benefits associated with tax positions taken that exceeds the amount measured as described above is reflected as a liability for unrecognized tax benefits in the accompanying balance sheet along with any associated interest and penalties that would be payable to the taxing authorities upon examination.

Applicable interest and penalties associated with unrecognized tax benefits are classified as additional income taxes in the statement of income.

Net Loss Per Share — Earnings per share is calculated in accordance with the SFAS No. 128, "Earnings Per Share" ("SFAS 128"). Basic earnings per share is based upon the weighted average number of common shares outstanding. Diluted earnings per share is based on the assumption that all dilutive convertible shares and stock options were converted or exercised. Dilution is computed by applying the treasury stock method. Under this method, options and warrants are assumed to be exercised at the beginning of the period (or at the time of issuance, if later), and as if funds obtained thereby were used to purchase common stock at the average market price during the period.

At June 30, 2009 and 2008, approximately 247,800,000 and 214,976,000 potentially dilutive shares, respectively, were excluded from the shares used to calculate diluted earnings per share as their inclusion would be anti-dilutive.

Concentrations and Other Risks —Currently, the Company's revenues and accounts receivable are concentrated on a small number of customers. The following table shows the Company's concentrations of its revenue for those customers comprising greater than 10% of total license revenue for the three and six months ended June 30, 2009 and 2008.

	3 Months Ended June 30,		6 Months Ended June 30,	
	2009	2008	2009	2008
Genzyme Transgenics Corporation	13%	19%	12%	22%
Exeter Life Sciences, Inc.	13%	18%	11%	20%
Lifeline Cell Technology	*	*	*	11%
Start Licensing, Inc.	10%	14%	*	17%
Terumo Corporation	10%	**	19%	17%
International Stem Cell Corporation	10%	**	12%	*
Transition Holdings, Inc.	21%	**	18%	**
CHA Biotech Co., Ltd.	10%	**	*	**

*License revenue earned during the period was less than 10% of total license revenue.
**No license revenue earned from this customer during the period.

Other risks include the uncertainty of the regulatory environment and the effect of future regulations on the Company's business activities. As the Company is a biotechnology research and development company, there is also the attendant risk that someone could commence legal proceedings over the Company's discoveries. Acts of God could also adversely affect the Company's business.

Recent Accounting Pronouncements

In May 2009, the FASB issued Statement of Financial Accounting Standards No. 165, Subsequent Events ("FAS 165"), which provides guidance to establish general standards of accounting for and disclosures of events that occur after the balance sheet date but before financial statements are issued or are available to be issued. FAS 165 also requires entities to disclose the date through which subsequent events were evaluated as well as the rationale for why that date was selected. FAS 165 is effective for interim and annual periods ending after June 15, 2009, and accordingly, the Company adopted this Standard during the second quarter of 2009. FAS 165 requires that public entities evaluate subsequent events through the date that the financial statements are issued. Subsequent events have been evaluated as of the date of this filing and no further disclosures were required and its adoption did not impact its consolidated results of operations and financial condition.

In June 2009, the FASB issued SFAS No. 166 “Accounting for Transfers of Financial Assets” (“SFAS 166”). Statement 166 is a revision to FASB Statement No. 140, Accounting for Transfers and Servicing of Financial Assets and Extinguishments of Liabilities, and will require more information about transfers of financial assets, including securitization transactions, and where entities have continuing exposure to the risks related to transferred financial assets. It eliminates the concept of a “qualifying special-purpose entity,” changes the requirements for derecognizing financial assets, and requires additional disclosures. SFAS 166 enhances information reported to users of financial statements by providing greater transparency about transfers of financial assets and an entity’s continuing involvement in transferred financial assets. SFAS 166 will be effective at the start of a reporting entity’s first fiscal year beginning after November 15, 2009. Early application is not permitted. The Company is currently evaluating the impact of adoption of SFAS 166 on the accounting for its convertible debt instruments and related warrant liabilities.

In June 2009, the FASB issued SFAS No. 167 “Amendments to FASB Interpretation No. 46(R)” (“SFAS 167”). Statement 167 is a revision to FASB Interpretation No. 46 (Revised December 2003), Consolidation of Variable Interest Entities, and changes how a reporting entity determines when an entity that is insufficiently capitalized or is not controlled through voting (or similar rights) should be consolidated. The determination of whether a reporting entity is required to consolidate another entity is based on, among other things, the other entity’s purpose and design and the reporting entity’s ability to direct the activities of the other entity that most significantly impact the other entity’s economic performance. SFAS 167 will require a reporting entity to provide additional disclosures about its involvement with variable interest entities and any significant changes in risk exposure due to that involvement. A reporting entity will be required to disclose how its involvement with a variable interest entity affects the reporting entity’s financial statements. SFAS 167 will be effective at the start of a reporting entity’s first fiscal year beginning after November 15, 2009. Early application is not permitted. The Company is currently evaluating the impact, if any, of adoption of SFAS 167 on its financial statements.

In June 2009, the FASB issued Statement of Financial Accounting Standards No. 168, The FASB Accounting Standards Codification™ and the Hierarchy of Generally Accepted Accounting Principles a Replacement of FASB Statement No. 162 (“FAS 168”). This Standard establishes the FASB Accounting Standards Codification™ (the “Codification”) as the source of authoritative accounting principles recognized by the FASB to be applied by nongovernmental entities in the preparation of financial statements in conformity with U.S. GAAP. The Codification does not change current U.S. GAAP, but is intended to simplify user access to all authoritative U.S. GAAP by providing all the authoritative literature related to a particular topic in one place. The Codification is effective for interim and annual periods ending after September 15, 2009, and as of the effective date, all existing accounting standard documents will be superseded. The Codification is effective in the third quarter of 2009, and accordingly, the Quarterly Report on Form 10-Q for the quarter ending September 30, 2009 and all subsequent public filings will reference the Codification as the sole source of authoritative literature.

3. LICENSE REVENUE

In connection with the joint venture agreement discussed in Note 4, on December 1, 2008, the Company entered into a license agreement with CHA for the exclusive, worldwide license to the Hemangioblast Program. Under the agreement, CHA agreed to acquire the Company’s core technology for an up-front payment of $500,000 in cash. The Company received $250,000 in December 2008 and the remaining $250,000 in January 2009. The Company has recorded $7,353 and $14,706 in license fee revenue for the three and six months ended June 30, 2009, respectively, in its accompanying consolidated statements of operations, and the remainder of the license fee has been accrued in deferred revenue at June 30, 2009. The Company is recognizing revenue from this agreement over its 17-year patent useful life.

On December 18, 2008, the Company entered into a license agreement with Transition for certain of its non-core technology. Under the agreement, Transition agreed to acquire a license to the technology for $3.5 million in cash. The Company received $2,000,000 during December 2008 and the remaining $1,500,000 during the six months ended June 30, 2009. The Company expects to apply the proceeds towards its retinal epithelium (“RPE”) cells program. The Company has recorded $51,470 and $95,587 in license fee revenue for the three and six months ended June 30, 2009 in its accompanying consolidated statements of operations, and the remainder of the license fee has been accrued in deferred revenue at June 30, 2009. The Company is recognizing revenue from this agreement over its 17-year patent useful life.

On March 30, 2009, the Company entered into a second license agreement with CHA under which the Company will license its RPE technology, for the treatment of diseases of the eye, to CHA for development and commercialization exclusively in Korea. The Company is eligible to receive up to a total of $1.9 million in fees based upon the parties achieving certain milestones, including the Company making an IND submission to the US FDA to commence clinical trials in humans using the technology. The Company received an up-front fee under the license in the amount

of $1,100,000 during the second quarter of 2009. Under the agreement, CHA will incur all of the costs associated with the RPA clinical trials in Korea. The Company has recorded $16,176 and $16,176 in license fee revenue for the three and six months ended June 30, 2009, respectively, in its accompanying consolidated statements of operations, and the remainder of the license fee has been accrued in deferred revenue at June 30, 2009. The Company is recognizing revenue from this agreement over its 17-year patent useful life.

On May 13, 2009, the Company entered into a third license agreement with CHA under which the Company will license its proprietary “single blastomere technology,” which has the potential to generate stable cell lines, including RPE for the treatment of diseases of the eye, for development and commercialization exclusively in Korea. The Company received an upfront license fee of $300,000 on May 8, 2009. The Company has recorded $1,471 in license fee revenue for the three months ended June 30, 2009 in its accompanying consolidated statements of operations, and the remainder of the license fee has been accrued in deferred revenue at June 30, 2009. The Company is recognizing revenue from this agreement over its 17-year patent useful life.

4. INVESTMENT IN JOINT VENTURE

On December 1, 2008, the Company and CHA Bio & Diostech Co., Ltd . (“CHA”), a leading Korean-based biotechnology company focused on the development of stem cell technologies, formed an international joint venture. The new company, Stem Cell & Regenerative Medicine International, Inc. (“SCRMI”), will develop human blood cells and other clinical therapies based on the Company’s hemangioblast program, one of the Company’s core technologies. Under the terms of the agreement, the Company purchased upfront a 33% interest in the joint venture, and will receive another 7% interest upon fulfilling certain obligations under the agreement over a period of 3 years. The Company’s contribution includes (a) the uninterrupted use of a portion of its leased facility at the Company’s expense, (b) the uninterrupted use of certain equipment in the leased facility, and (c) the release of certain of the Company’s research and science personnel to be employed by the joint venture. In return, for a 67% interest, CHA has agreed to contribute $150,000 cash and to fund all operational costs in order to conduct the hemangioblast program.

The Company has agreed to collaborate with the joint venture in securing grants to further research and development of its technology. Additionally, SCRMI has agreed to pay the Company a fee of $500,000 for an exclusive, worldwide license to the Hemangioblast Program. The Company has recorded $7,353 and $14,706 in license fee revenue for the three and six months ended June 30, 2009, respectively, in its accompanying consolidated statements of operations, and the balance of unamortized license fee of $484,069 has been accrued in deferred revenue in the accompanying consolidated balance sheet at June 30, 2009.

Accounting Principles Board Opinion 18 The Equity Method of Accounting for Investments in Common Stock (“APB 18”), paragraph 19a requires that the difference between the cost of an investment and the amount of underlying equity in net assets of an investee should be accounted for as if the investee were a consolidated subsidiary. The Company has calculated the difference between the cost of the investment and the amount of underlying equity in net assets of the joint venture to be $196,130, based on the Company’s initial cost basis in the investment of $246,130, less its 33.3% of the initial equity in net assets of the joint venture of $50,000. The Company will amortize the $196,130 over the term of the shorter of the equipment usage or lease term (through April 2010, or 17 months from December 1, 2008). The amortization will be applied against the value of the Company’s investment. Amortization expense for the three and six months ending June 30, 2009 was $34,612 and $80,762, respectively.

The following table is a summary of key financial data for the joint venture as of and for the six months ended June 30, 2009:

Current assets	$	34,434
Noncurrent assets	$	516,877
Current liabilities	$	271,984
Noncurrent liabilities	$	501,683
Net revenue	$	13,389
Net loss	$	(615,318)

The following table is a summary of the activity from December 31, 2008 to June 30, 2009 in the Company's investment in the joint venture:

Balance, December 31, 2008	$ 225,200
Losses attributable to investment	(144,438)
Amortization of premium	(80,762)
Balance, June 30, 2009	$ -

5. CONVERTIBLE NOTE PAYABLE—APRIL 2008

On April 4, 2008, the Company entered into a Securities Purchase Agreement with accredited investors for the issuance of an aggregate of $4,038,880 principal amount of senior secured convertible debentures with an original issue discount of $820,648 representing approximately 20.32%. The amortizing senior secured convertible debentures issued at the closing of the 2008 financing will be due and payable one (1) year from the closing, and will not bear interest. The cash purchase price excluding refinancing of bridge debt and in-kind payments was $2,212,432. Refinanced bridge debt consisted of the aggregate $130,000 in unsecured convertible notes previously issued and sold to PDPI LLC and The Shapiro Family Trust on March 21, 2008. The net outstanding amount of principal plus interest of the Notes was converted into the debt within the April 2008 debenture on a dollar-for-dollar basis. Dr. Shapiro, one of the Company's directors, may be deemed the beneficial owner of the securities owned by The Shapiro Family Trust. The convertible debentures are convertible at the option of the holders beginning on the six-month anniversary of the effective date into 26,206,333 and 5,396,500 shares of common stock at a fixed conversion price of $0.15 per share and $0.02 per share, respectively, subject to anti-dilution and other customary adjustments. The Company has classified the note as short term in the accompanying consolidated balance sheet as of December 31, 2008. The debenture contains no restrictions as to the use of the proceeds, and is intended to fund the Company's working capital obligations. As of August 10, 2009, the entire debenture balance remains outstanding.

Under the terms of the agreements, principal amounts owed under the debentures become due and payable commencing six months following closing of the transaction. At that time, and each month thereafter, the Company is required to either repay 1/30 of the outstanding balance owed in common stock at the lesser of the then conversion price or 80% of the weighted average price for common shares for the 10 trading days prior to the amortization payment date. The debenture agreement does not limit the number of shares that the Company could be required to issue.

The note contains a provision that modifies the conversion rate to $0.15 per common share and the warrant exercise price to $0.165 per common share, issued to the April 2008 note payable subscribers who are also participants in the 2005, 2006, and 2007 debentures. The Company concluded that the change in conversion price and warrant exercise price did not constitute a significant change in the nature of the debt and that the transaction should not be treated as an extinguishment of that debt.

In connection with this financing, the Company accrued cash fees to a placement agent of $20,000 and issued warrants to purchase 26,925,867 shares of Common Stock at an exercise price of $0.165 per share. The term of the warrants is five years and is subject to anti-dilution and other customary adjustments. The initial fair value of the warrants was estimated at $2,587,521 using the Black-Scholes pricing model. The Company issued warrants to purchase an aggregate of 4,263,962 shares of common stock of the Company at an exercise price of $0.165 to T.R. Winston & Company, LLC as consideration for placement agent services provided in connection with the Debenture. The term of the warrants is five years and is subject to anti-dilution and other customary adjustments. The initial fair value of the warrants was estimated at $412,732 using the Black-Scholes pricing model. The total of 31,189,829 warrants were again valued at $7,398,737 at June 30, 2009 at fair value using the Black-Scholes model, representing an increase in the fair value of the liability of $4,205,629 and $6,576,694 during the three and six months ended June 30, 2009, respectively, which was recorded through the results of operations as an adjustment to fair value of

derivatives. The assumptions used in the Black-Scholes option pricing model at April 4, 2008 for all warrants issued in connection with this Debenture are as follows: (1) dividend yield of 0%; (2) expected volatility of 145%, (3) risk-free interest rate of 2.63%, and (4) expected life of 5.0 years. The assumptions used in the Black-Scholes option pricing model at June 30, 2009 for all warrants issued in connection with this Debenture are as follows: (1) dividend yield of 0%; (2) expected volatility of 190%, (3) risk-free interest rate of 1.64%, and (4) expected life of 3.76 years. Cash fees accrued in the amount of $20,000, the initial fair value of the original issue discount in the amount of $820,649, and the initial fair value of the warrant discount in the amount of $3,000,253 were capitalized as debt issuance costs (cash paid) and debt discounts (original issue discount and warrant discount), respectively, and were amortized in full during the year ended December 31, 2008 due to the August 6, 2008 default as discussed below.

Under the terms of the agreement, beginning October 1, 2008, the Company is to amortize the note resulting in complete repayment by the maturity date. The Company may make the amortization payment in either cash or equity. If the payment is made in common stock, the stock will be issued at a price per share equal to the lesser of (i) the then conversion price, and (ii) 80% of the weighted average price for common shares for the 10 trading days prior to the amortization payment date. As of June 30, 2009, no note amortization had occurred and the note was in default, effective August 6, 2008, as discussed below.

The agreement entered into provides that the Company will pay certain cash amounts as liquidated damages in the event that the Company does not maintain an effective registration statement, or if the Company fails to timely execute stock trading activity. Additionally, penalties will be incurred by the Company in the event of potential default conditions.

As long as any portion of this debenture remains outstanding, unless the holders of at least 67% in principal amount of the then outstanding debentures otherwise give prior written consent, the Company is not permitted to (a) guarantee or borrow any indebtedness, (b) enter into any liens, (c) amend its charter documents in any manner that materially and adversely affects any rights of the holders, (d) acquire more than a de minimis number of shares of its common stock equivalents other than as to conversion shares of warrant shares as permitted or required and repurchases of common stock or common stock equivalents of departing officers and directors of the Company, provided that such purchases do not exceed certain specified amounts, (e) repay any indebtedness, other than the debentures already issued on a pro-rata basis, other than regularly scheduled principle payments as such terms are in effect under this debenture, (f) pay cash dividends or distributions on any equity securities of the Company, (g) enter into any material transaction with any affiliate of the Company, unless such transaction is made on an arm's-length basis, or (h) enter into any agreement with respect to any of the above.

The Company has complied with the provisions of FAS 155 "Accounting for Certain Hybrid Financial Instruments", and recorded the fair value of the convertible debentures and related embedded conversion option. The initial fair value of the debentures and embedded conversion option was valued using a combination of Binomial and Black-Scholes models, resulting in a fair value of $4,570,649 at April 4, 2008. As of June 30, 2009, the convertible debenture is convertible at the option of the holders into a total of 31,602,833 shares, subject to anti-dilution and other customary adjustments. The excess of $531,769 of this value over the face value of the note was recorded through the results of operations as charges related to issuance of April 2008 convertible note payable. The fair value of the debentures and embedded conversion option was $8,165,561 at June 30, 2009, which includes the face value of the note of $4,038,880, plus the $4,126,681 fair value of the embedded conversion option. The embedded conversion option was valued using the Black-Scholes option pricing model. The assumptions used in the Black-Scholes option pricing model at June 30, 2009 are as follows: (1) dividend yield of 0%; (2) expected volatility of 190%, (3) risk-free interest rate of 0.17%, and (4) expected life of 0.08 years. The increase in fair value of the embedded conversion option of $3,623,936 and $3,622,043 during the three and six months ended June 30, 2009, respectively, which was recorded through the results of operations as an adjustment to fair value of derivatives. Additionally, $477,013 was recorded in loss on modification of convertible debenture during the six months ended June 30, 2009 as a result of a settlement with a debenture holder in February 2009. See Note 14.

At June 30, 2009, the note and related embedded derivatives outstanding were again valued at fair value using a binomial option pricing model, resulting in the changes shown in the following table in the fair values of the respective liabilities versus the values at December 31, 2008. The changes were recorded through the results of operations as an adjustment to fair value of derivatives.

	June 30, 2009	December 31, 2008	Increase (Decrease)
Principal Due	$ 4,038,880	$ 4,038,880	$ -
Fair Value	$ 8,165,561	$ 4,066,505	$ 4,099,056

Interest expense on the April 2008 debenture for the three months ended June 30, 2009 and 2008 was $181,252 and $817,125, respectively. Interest expense on the April 2008 debenture for the six months ended June 30, 2009 and 2008 was $360,512 and $817,125, respectively.

On August 6, 2008, the Company issued a moratorium on amortization of all outstanding debentures. Under the terms of the debenture agreements, the moratorium constitutes an event of default and thus the debentures all incur default interest penalties. As a result of the default, the Company has recognized additional penalty interest, and has recognized the remaining balance of its debt discounts associated with this note in interest expense, and classified the entire balance as short term. See Note 10 for the total default interest expense recognized during the three and six months ended June 30, 2009. Effective July 29, 2009, the default was cured through a forbearance and amendment to the 2005, 2006, 2007 and 2008 debentures. See Note 18 “Subsequent Events” for details of forbearance and amendment of this debenture.

6. CONVERTIBLE NOTES PAYABLE—FEBRUARY 2008

The Company issued and sold a $600,000 unsecured convertible note dated as of February 15, 2008 (“Note A”) to JMJ Financial, for a net purchase price of $500,000 (reflecting a 16.66% original issue discount) in a private placement. Note A bears interest at the rate of 12% per annum, and is due by February 15, 2010. At any time after the 180th day following the effective date of Note A, the holder may at its election convert all or part of Note A plus accrued interest into shares of the Company's common stock at the conversion rate of the lesser of: (a) $0.38 per share, or (b) 80% of the average of the three lowest trade prices in the 20 trading days prior to the conversion. Pursuant to the Use of Proceeds Agreement entered into in connection with the issuance of Note A, the Company is required to use the proceeds from Note A solely for research and development dedicated to adult stem cell research.

Effective February 15, 2008, in exchange for $1,000,000 in the form of a Secured & Collateralized Promissory Note (the “JMJ Note”) issued by JMJ Financial to the Company, the Company issued and sold an unsecured convertible note (“Note B”) to JMJ Financial in the aggregate principal amount of $1,200,000 or so much as may be paid towards the balance of the JMJ Note. Note B bears interest at the rate of 10% per annum, and is due by February 15, 2010. At any time following the effective date of Note B, the holder may at its election convert all or part of Note B plus accrued interest into shares of the Company’s common stock at the conversion rate of the lesser of: (a) $0.38 per share, or (b) 80% of the average of the three lowest trade prices in the 20 trading days prior to the conversion. In connection with the issuance of Note B, the Company entered into a Collateral and Security Agreement dated as of February 15, 2008 with JMJ Financial pursuant to which the Company granted JMJ Financial a security interest in certain of its assets securing the JMJ Note. As of June 30, 2009, the Company had drawn down and received the following amounts under Note B:

- On March 17, 2008 — $60,000 for a net purchase price of $50,000 (reflecting a 16.66% original issue discount).
- On June 17, 2008 — $60,000 for a net purchase price of $50,000 (reflecting a 16.66% original issue discount).

As long as any portion of this debenture remains outstanding, unless the holders of at least 67% in principal amount of the then outstanding debentures otherwise give prior written consent, the Company is not permitted to (a) guarantee or borrow any indebtedness, (b) enter into any liens, (c) amend its charter documents in any manner that materially and adversely affects any rights of the holders, (d) acquire more than a de minimis number of shares of its common stock equivalents other than as to conversion shares of warrant shares as permitted or required and repurchases of common stock or common stock equivalents of departing officers and directors of the Company, provided that such purchases do not exceed certain specified amounts, (e) repay any indebtedness, other than the debentures already issued on a pro-rata basis, other than regularly scheduled principle payments as such terms are in effect under this debenture, (f) pay cash dividends or distributions on any equity securities of the Company, (g) enter into any material transaction with any affiliate of the Company, unless such transaction is made on an arm's-length basis, or (h) enter into any agreement with respect to any of the above.

The debenture agreement does not limit the number of shares that the Company could be required to issue. The convertible debenture is convertible at the option of the holders into a total of 6,000,000 shares of common stock at a conversion price of $0.12 per share at June 30, 2009, subject to anti-dilution and other customary adjustments. The conversion options included in Note A and Note B represent embedded derivative instruments. Accordingly, the Company has complied with the provisions of FAS 155 "Accounting for Certain Hybrid Financial Instruments". The fair values of Note A and Note B and the related embedded derivatives, valued using a Monte Carlo simulation model, were recorded as of February 15, 2008. The excess of these values over the face values of Note A and Note B was recorded through the results of operations as charges related to the issuance of the February 2008 convertible notes payable. The fair value of the debentures and embedded conversion options was $1,775,904 at June 30, 2009, which includes the face value of the debentures of $720,000, plus the $1,055,904 fair value of the embedded conversion options. The embedded conversion options were valued using the Black-Scholes option pricing model. The assumptions used in the Black-Scholes option pricing model at June 30, 2009 are as follows: (1) dividend yield of 0%; (2) expected volatility of 190%, (3) risk-free interest rate of 0.56%, and (4) expected life of 0.63 years. The increase in fair value of the embedded conversion option of $245,421 and $18,434 during the three and six months ended June 30, 2009, respectively, which was recorded through the results of operations as an adjustment to fair value of derivatives.

The following table summarizes the changes in the fair values of the respective liabilities versus the values at June 30, 2009 and December 31, 2008.

	June 30, 2009	December 31, 2008	Increase (Decrease)
Note A:			
Principal Due	$ 600,000	$ 600,000	$ -
Fair Value	1,479,921	1,464,558	15,363
Note B:			
Principal Due	$ 120,000	$ 120,000	$ -
Fair Value	295,983	292,912	3,071
Total Increase (Decrease)			$ 18,434

Interest expense on the February 2008 debenture for the three months ended June 30, 2009 and 2008 was $32,311 and $5,006, respectively. Interest expense on the February 2008 debenture for the six months ended June 30, 2009 and 2008 was $64,267 and $21,881, respectively.

On August 6, 2008, the Company issued a moratorium on amortization of all outstanding debentures. Under the terms of the debenture agreements, the moratorium constitutes an event of default and thus the debentures all incur default interest penalties. As a result of the default, the Company has recognized additional penalty interest, and has recognized the remaining balance of its debt discounts associated with this note in interest expense, and classified the entire balance as short term. See Note 10 for the total default interest expense recognized during the three and six months ended June 30, 2009. Effective July 29, 2009, the default was cured through a forbearance and amendment to the 2005, 2006, 2007 and 2008 debentures. See Note 18 “Subsequent Events” for details of forbearance and amendment of this debenture.

7. CONVERTIBLE DEBENTURES—2007

On August 31, 2007, to fund its continuing operations, the Company entered into a Securities Purchase Agreement with accredited investors for the issuance of an aggregate of $12,550,000 principal amount of convertible debentures with an original issue discount of $2,550,000 representing approximately 20.3%. In connection with the closing of the sale of the debentures, the Company received gross proceeds of $10,000,000. The convertible debentures are convertible at the option of the holders into 36,911,765 shares of common stock at a fixed conversion price of $0.34 per share, subject to anti-dilution and other customary adjustments. In connection with the Securities Purchase Agreement, the Company also issued warrants to purchase an aggregate of 54,905,483 shares of its common stock. The term of the warrants is five years and the exercise price is $0.38 per share, subject to anti-dilution and other customary adjustments. The conversion price and warrant exercise price have each been modified for those subscribers who also participated in the April 2008 convertible note. See Note 5. The investors have contractually agreed to restrict their ability to convert the convertible debentures, exercise the warrants and exercise the additional investment right and receive shares of the Company's common stock such that the number of shares of the Company's common stock held by them and their affiliates after such conversion or exercise does not exceed 4.99% of the Company's then issued and outstanding shares of its common stock.

The April 2008 note (see Note 5) contains a provision that modifies the conversion rate to $0.15 per common share and the warrant exercise price to $0.165 per common share, issued to the April 2008 debenture subscribers who are also participants in the 2007 debentures. The Company concluded that the change in conversion price and warrant exercise price did not constitute a significant change in the nature of the debt and that the transaction should not be treated as an extinguishment of that debt. As a result of the change in the exercise price of the warrants, 2,399,264 warrants remained at $0.38 exercise price and the remaining 34,512,501 warrants were adjusted to the $0.165 exercise price as a result of participation in the April 2008 debenture. The convertible debentures are convertible at the option of the holders into 1,999,387; 38,471,546; and 14,434,550 shares of common stock at a fixed conversion price of $0.34 per share, $0.15 per share, and $0.02 per share, respectively, subject to anti-dilution and other customary adjustments.

The agreements entered into provide that the Company will pay certain cash amounts as liquidated damages in the event that the Company does not maintain an effective registration statement, or if the Company fails to timely execute stock trading activity.

Under the terms of the agreements, principal amounts owed under the debentures become due and payable commencing six months following closing of the transaction. At that time, and each month thereafter, the Company is required to either repay 1/30 of the outstanding balance owed in common stock at the lesser of $0.34 per share or 80% of the prior ten day's average closing stock price, immediately preceding the redemption. The agreements also provide that the Company may force conversion of outstanding amounts owed under the debentures into common stock, if the Company has met certain conditions and milestones, and additionally, has a stock price for 20 consecutive trading days that exceeds 200% of the conversion price. The debenture agreement does not limit the number of shares that the Company could be required to issue.

As long as any portion of this debenture remains outstanding, unless the holders of at least 67% in principal amount of the then outstanding debentures otherwise give prior written consent, the Company is not permitted to (a) guarantee or borrow any indebtedness, (b) enter into any liens, (c) amend its charter documents in any manner that materially and adversely affects any rights of the holders, (d) acquire more than a de minimis number of shares of its common stock equivalents other than as to conversion shares of warrant shares as permitted or required and repurchases of common stock or common stock equivalents of departing officers and directors of the Company, provided that such purchases do not exceed certain specified amounts, (e) pay cash dividends or distributions on any equity securities of the Company, (f) enter into any material transaction with any affiliate of the Company, unless such transaction is made on an arm's-length basis, or (g) enter into any agreement with respect to any of the above.

The agreement included an embedded conversion option, and the Company has complied with the provisions of FAS 155 “Accounting for Certain Hybrid Financial Instruments”, and recorded the fair value of the convertible debentures, and the related embedded derivatives, as of August 31, 2007. The fair value of the debentures and embedded conversion option was $17,859,334 at June 30, 2009, which includes the face value of the debentures of $6,739,215, plus the $11,120,119 fair value of the embedded conversion option. The embedded conversion option was valued using the Black-Scholes option pricing model. The assumptions used in the Black-Scholes option pricing model at June 30, 2009 are as follows: (1) dividend yield of 0%; (2) expected volatility of 190%, (3) risk-free interest rate of 0.56%, and (4) expected life of 1.17 years. The increase in fair value of derivative liabilities of $6,583,530 and $1,518,774 during the three months ended June 30, 2009 and 2008, respectively, which was recorded through the results of operations as an adjustment to fair value of derivatives. The increase in fair value of derivative liabilities of $9,078,716 and $1,301,276 during the six months ended June 30, 2009 and 2008, respectively, which was recorded through the results of operations as an adjustment to fair value of derivatives. Additionally, $1,319,355 was recorded in loss on modification of convertible debenture during the six months ended June 30, 2009 as a result of a settlement with a debenture holder in February 2009. See Note 14.

In connection with this financing, the Company paid cash fees to a placement agent of $1,001,800 and issued a warrant to purchase 6,328,890 shares of common stock at an exercise price of $0.38 per share (modified to $0.165 for holders who are also subscribers of the April 2008 note payable – see Note 5). The initial fair value of the warrant was estimated at $2,025,000 using the Black-Scholes pricing model. The broker-dealer warrants were again valued at June 30, 2009 at fair value using the Black-Scholes model, resulting in an increase (decrease) in the fair value of the liability for the three months ended June 30, 2009 and 2008 of $836,921 and ($519,860), respectively, which was recorded through the results of operations as an adjustment to fair value of derivatives. The increase (decrease) in the fair value of the liability for the six months ended June 30, 2009 and 2008 was $1,307,074 and ($536,500), respectively. The assumptions used in the Black-Scholes model at June 30, 2009 are as follows: (1) dividend yield of 0%; (2) expected volatility of 190%, (3) risk-free interest rate of 1.64%, and (4) expected life of 3.17 years. Cash fees paid, and the initial fair value of the warrant, were capitalized on the date of the note, and were amortized in full during the year ended December 31, 2008 due to the August 6, 2008 default as discussed below.

The following table summarizes the 2007 Convertible Debentures and discounts outstanding at June 30, 2009 and December 31, 2008:

	June 30, 2009	December 31, 2008	Increase (Decrease)
Principal Due	$ 6,739,215	$ 6,984,297	$ (245,082)
Fair Value	$ 17,859,334	$ 7,706,344	$ 10,152,990

Interest expense on the 2007 debenture for the three months ended June 30, 2009 and 2008 was $302,434 and $4,170,216, respectively. Interest expense on the 2007 debenture for the six months ended June 30, 2009 and 2008 was $535,365 and $5,817,827, respectively.

On August 6, 2008, the Company issued a moratorium on amortization of all outstanding debentures. Under the terms of the debenture agreements, the moratorium constitutes an event of default and thus the debentures all incur default interest penalties. As a result of the default, the Company has recognized additional penalty interest, and has recognized the remaining balance of its debt discounts associated with this note in interest expense, and classified the entire balance as short term. See Note 10 for the total default interest expense recognized during the three and six months ended June 30, 2009. Effective July 29, 2009, the default was cured through a forbearance and amendment to the 2005, 2006, 2007 and 2008 debentures. See Note 18 “Subsequent Events” for details of forbearance and amendment of this debenture.

8. CONVERTIBLE DEBENTURES—2006

On September 6, 2006, to fund its continuing operations, the Company entered into a Securities Purchase Agreement with accredited investors for the issuance of an aggregate of $10,981,250 principal amount of convertible debentures with an original issue discount of $2,231,250 representing approximately 20.3%. In connection with the closing of the sale of the debentures, the Company received gross proceeds of $8,750,000. The Company may make the amortization payment in either cash or equity. If the payment is made in common stock, the stock will be issued at a price per share equal to the lesser of (i) the then conversion price, and (ii) 70% of the weighted average price for common shares for the 10 trading days prior to the amortization payment date. The debenture agreement does not limit the number of shares that the Company could be required to issue. In connection with the issuance of the debenture, the Company also issued warrants to purchase 19,064,670 shares of common stock at an initial price of $0.3168 per share (modified to $0.165 for holders who are also subscribers of the April 2008 note payable – see Note 5) and exercisable for five years. The warrants were valued using the Black-Scholes option pricing model. The assumptions used in the Black-Scholes option pricing model at June 30, 2009 are as follows: (1) dividend yield of 0%; (2) expected volatility of 190%, (3) risk-free interest rate of 1.11%, and (4) expected life of 2.19 years. The increase (decrease) in fair value of the warrants of $2,369,038 and ($1,397,605) during the three months ended June 30, 2009 and 2008, respectively, which was recorded through the results of operations as an adjustment to fair value of derivatives. The increase (decrease) in fair value of the warrants of $3,673,292 and ($1,437,731) during the six months ended June 30, 2009 and 2008, respectively, which was recorded through the results of operations as an adjustment to fair value of derivatives.

The agreement included an embedded conversion option, and the Company has complied with the provisions of FAS 155 “Accounting for Certain Hybrid Financial Instruments”, and recorded the fair value of the convertible debentures, and related embedded derivatives, as of September 6, 2006. The fair value of the debentures and embedded conversion option was $2,733,345 at June 30, 2009, which includes the face value of the debentures of $1,854,875, plus the $878,470 fair value of the embedded conversion option. The embedded conversion option was valued using the Black-Scholes option pricing model. The assumptions used in the Black-Scholes option pricing model at June 30, 2009 are as follows: (1) dividend yield of 0%; (2) expected volatility of 190%, (3) risk-free interest rate of 0.19%, and (4) expected life of 0.19 years. The increase (decrease) in fair value of derivative liabilities of $569,326 and ($280,948) during the three months ended June 30, 2009 and 2008, respectively, which was recorded through the results of operations as an adjustment to fair value of derivatives. The increase (decrease) in fair value of derivative liabilities of $826,711 and ($695,790) during the six months ended June 30, 2009 and 2008, respectively, which was recorded through the results of operations as an adjustment to fair value of derivatives.

As long as any portion of this debenture remains outstanding, unless the holders of at least 67% in principal amount of the then outstanding debentures otherwise give prior written consent, the Company is not permitted to (a) guarantee or borrow any indebtedness, (b) enter into any liens, (c) amend its charter documents in any manner that materially and adversely affects any rights of the holders, (d) acquire more than a de minimis number of shares of its common stock equivalents other than as to conversion shares of warrant shares as permitted or required and repurchases of common stock or common stock equivalents of departing officers and directors of the Company, provided that such purchases do not exceed certain specified amounts, (e) pay cash dividends or distributions on any equity securities of the Company, or (f) enter into any agreement with respect to any of the above.

The April 2008 note (see Note 5) contains a provision that modifies the conversion rate to $0.15 per common share and the warrant exercise price to $0.165 per common share, issued to the April 2008 note payable subscribers who are also participants in the 2006 debentures. The Company concluded that the change in conversion price and warrant exercise price did not constitute a significant change in the nature of the debt and that the transaction should not be treated as an extinguishment of that debt. As a result of the change in the exercise price of the warrants, 6,572,626 warrants remained at the $0.3168 exercise price and the remaining 12,492,044 warrants were adjusted to the $0.165 exercise price upon participation in the April 2008 debenture. The convertible debentures are convertible at the option

of the holders into 3,866,563 and 4,942,035 shares of common stock at a fixed conversion price of $0.288 per share and $0.15 per share, respectively, subject to anti-dilution and other customary adjustments.

The following table summarizes the 2006 Convertible Debentures and discounts outstanding at June 30, 2009 and December 31, 2008:

	June 30, 2009	December 31, 2008	Increase (Decrease)
Principal Due	$ 1,854,875	$ 1,941,595	$ (86,720)
Fair Value	$ 2,733,345	$ 1,993,354	$ 739,991

In connection with this financing, the Company paid cash fees to a broker-dealer of $525,000 and issued a warrant to purchase 4,575,521 shares of common stock at an exercise price of $0.3168 per share (modified for holders who are also subscribers of the April 2008 note payable – see Note 5). The broker-dealer warrants were again valued at June 30, 2009 at fair value using the Black-Scholes model. The increase (decrease) in the fair value of the liability of approximately $553,071 and ($1,397,605) for the three months ended June 30, 2009 and 2008, respectively, was recorded through the results of operations as an adjustment to fair value of derivatives. The increase (decrease) in the fair value of the liability of approximately $846,542 and ($1,478,336) for the six months ended June 30, 2009 and 2008, respectively, was recorded through the results of operations as an adjustment to fair value of derivatives. The assumptions used in the Black-Scholes model at June 30, 2009 are as follows: (1) dividend yield of 0%; (2) expected volatility of 190%, (3) risk-free interest rate of 1.11%, and (4) expected life of approximately 2.25 years. Cash fees paid, and the initial fair value of the warrant, were capitalized on the date of the note, and were amortized in full during the year ended December 31, 2008 due to the August 6, 2008 default as discussed below.

Interest expense on the 2006 debenture for the three months ended June 30, 2009 and 2008 was $83,241 and $2,880,835, respectively. Interest expense on the 2006 debenture for the six months ended June 30, 2009 and 2008 was $142,150 and $4,893,878, respectively.

On August 6, 2008, the Company issued a moratorium on amortization of all outstanding debentures. Under the terms of the debenture agreements, the moratorium constitutes an event of default and thus the debentures all incur default interest penalties. As a result of the default, the Company has recognized additional penalty interest, and has recognized the remaining balance of its debt discounts associated with this note in interest expense, and classified the entire balance as short term. See Note 10 for the total default interest expense recognized during the three and six months ended June 30, 2009. Effective July 29, 2009, the default was cured through a forbearance and amendment to the 2005, 2006, 2007 and 2008 debentures. See Note 18 “Subsequent Events” for details of forbearance and amendment of this debenture.

9. CONVERTIBLE DEBENTURES—2005

On September 15, 2005, to fund its continuing operations, the Company entered into a Securities Purchase Agreement with accredited investors for the issuance of an aggregate of $22,276,250 principal amount of convertible debentures with an original issue discount of $4,526,250 representing approximately 20.3%. In connection with the closing of the sale of the debentures, the Company received gross proceeds of $17,750,000. The Company may make the amortization payment in either cash or equity, beginning six months from the closing date of this debenture. If the payment is made in common stock, the stock will be issued at a price per share equal to the lesser of (i) the then conversion price, and (ii) 85% of the weighted average price for common shares for the 10 trading days prior to the amortization payment date. The debenture agreement does not limit the number of shares that the Company could be required to issue.

The agreement included a an embedded conversion option that required separate valuation in accordance with the requirements of FAS 133, EITF –00-27 and related accounting literature. The fair value at June 30, 2009 of the derivative for the conversion feature was valued as an American call option using the Black-Scholes option pricing

model with the following inputs: (1) closing stock price from $0.25 (2) exercise price equal to the $0.15 and $0.34 conversion prices (3) volatility of 190% (4) risk-free interest rate of 0.56%, and (5) expected life of 0.50 years.

During the three months ended June 30, 2009 and 2008, respectively, an increase (decrease) in the fair value of the embedded derivative amounts of approximately $33,954 and ($79,309), respectively, was recorded through results of operations as adjustment to fair value of derivatives. During the six months ended June 30, 2009 and 2008, respectively, an increase (decrease) in the fair value of the embedded derivative amounts of approximately $49,822 and ($168,857), respectively, was recorded through results of operations as adjustment to fair value of derivatives.

In connection with this financing, we paid cash fees to a broker-dealer of $1,065,000 and issued a warrant to purchase 1,623,718 shares of Common Stock at an exercise price of $0.165 per share. The fair value of the warrant as of June 30, 2009 was estimated at $354,801 using the Black-Scholes pricing model. The assumptions used in the Black-Scholes model are as follows: (1) dividend yield of 0%; (2) expected volatility of 190%, (3) risk-free interest rate of 1.11%, and (4) expected life of 2.21 years. Cash fees paid, and the fair value of the warrant, have been capitalized as debt issuance costs and are being amortized over 36 months, and as redemptions occur the Company writes off the proportional amount of the original deferred issuance cost to interest expense.

In January 2007, the Company’s Board of Directors agreed to reduce the exercise price of the warrants issued in connection with the 2005 debentures to $0.95 per share and to reduce the conversion price of the debentures to $0.90 per share. The conversion price and warrant exercise price have each been further modified in April 2008 for those subscribers who also participated in the April 2008 convertible note. See Note 5.

Anti-dilution Impact

As a result of the 2007 and April 2008 Financings, described more fully in Notes 5 and 7, the exercise prices of certain of the warrants issued in connection with the 2005 Financing were automatically diluted down to $0.34 and $0.165. The result of this was to impact both the number and price of the original warrants and replacement warrants issued to both the investors and the brokers.

The number of original warrants issued to investors totaled 2,335,005. The warrants were again valued at June 30, 2009 at fair value using the Black-Scholes model. The increase (decrease) in the fair value of the liability of approximately $257,479 and ($141,407) for the three months ended June 30, 2009 and 2008, respectively, was recorded through the results of operations as an adjustment to fair value of derivatives. The increase (decrease) in the fair value of the liability of approximately $368,033 and ($156,014) for the six months ended June 30, 2009 and 2008, respectively, was recorded through the results of operations as an adjustment to fair value of derivatives. The assumptions used in the Black-Scholes model to value the warrants at June 30, 2009 were as follows: (1) dividend yield of 0%; (2) expected volatility of 190%, (3) risk-free interest rate of 0.56%, and (4) expected life of 1.0 years.

The new number of replacement warrants issued to investors and brokers totaled 12,689,966. The warrants were again valued at June 30, 2009 at fair value using the Black-Scholes model. The increase (decrease) in the fair value of the liability of approximately $1,583,911 and ($912,776) for the three months ended June 30, 2009 and 2008, respectively, was recorded through the results of operations as an adjustment to fair value of derivatives. The increase (decrease) in the fair value of the liability of approximately $2,427,804 and ($956,978) for the six months ended June 30, 2009 and 2008, respectively, was recorded through the results of operations as an adjustment to fair value of derivatives. The assumptions used in the Black-Scholes model at June 30, 2009 are as follows: (1) dividend yield of 0%; (2) expected volatility of 190%, (3) risk-free interest rate of 1.11%, and (4) expected life of 2.21 years.

The April 2008 note (see Note 5) contains a provision that modifies the conversion rate to $0.15 per common share and the warrant exercise price to $0.165 per common share, issued to the April 2008 note payable subscribers who are also participants in the 2006 debentures. The Company concluded that the change in conversion price and warrant exercise price did not constitute a significant change in the nature of the debt and that the transaction should not be treated as an extinguishment of that debt. As a result of the change in the exercise price of the warrants, 1,793,364 original warrants remained at the $0.34 exercise price and the remaining 541,641 original warrants were adjusted to the $0.165 exercise price upon participation in the April 2008 debenture. Further, 3,239,810 replacement warrants remained at the $0.34 exercise price and the remaining 9,450,156 replacement warrants were adjusted to the $0.165 exercise price upon participation in the April 2008 debenture. The convertible debentures are convertible at the option of the holders into 159,951 and 237,056 shares of common stock at a fixed conversion price of $0.34 per share and $0.15 per share, respectively, subject to anti-dilution and other customary adjustments..

The following table summarizes the 2005 Convertible Debentures and embedded derivatives outstanding at June 30, 2009 and December 31, 2008:

	June 30, 2009	December 31, 2008	Increase (Decrease)
Principal Due	$ 81,922	$ 81,922	$ -
Fair Value	$ 135,819	$ 85,997	$ 49,822

Interest expense on the 2005 debenture for the three months ended June 30, 2009 and 2008 was $3,676 and $337,770, respectively. Interest expense on the 2005 debenture for the six months ended June 30, 2009 and 2008 was $7,312 and $868,114, respectively.

On August 6, 2008, the Company issued a moratorium on amortization of all outstanding debentures. Under the terms of the debenture agreements, the moratorium constitutes an event of default and thus the debentures all incur default interest penalties. As a result of the default, the Company has recognized additional penalty interest, and has recognized the remaining balance of its debt discounts associated with this note in interest expense, and classified the entire balance as short term. See Note 10 for the total default interest expense recognized during the three and six months ended June 30, 2009. Effective July 29, 2009, the default was cured through a forbearance and amendment to the 2005, 2006, 2007 and 2008 debentures. See Note 18 “Subsequent Events” for details of forbearance and amendment of this debenture.

10. ACCRUED DEFAULT INTEREST

On August 6, 2008, the Company issued a moratorium on amortization of all outstanding debentures at June 30, 2008. Effective July 29, 2009, the default was cured through a forbearance and amendment to the 2005, 2006, 2007 and 2008 debentures. See Note 18 “Subsequent Events” for details of forbearance and amendment of this debenture. Under the terms of the debenture agreements, the moratorium constituted an event of default and thus the debentures all incurred default interest penalties. The debenture agreements required in the event of default that the full principle amount of the debentures, together with other amounts owing in respect thereof, to the date of acceleration shall become, at the Holder’s election, immediately due and payable in cash. The aggregate amount payable upon event of default shall be equal to the mandatory default amount. The mandatory default amount equals the sum of (i) the greater of: (A) 120% of the principle amount of the debentures to be repaid plus 100% of the accrued and unpaid interest, or (B) the principle amount of the debentures to be repaid, divided by the conversion price on (x) the date the mandatory default amount came due or (y) the date the mandatory default amount is paid in full, whichever is less, multiplied by the closing price on (x) the date the mandatory default amount is demanded or otherwise due or (y) the date the mandatory default amount is paid in full, whichever is greater, and (ii) all other amounts, costs, expenses and liquidated damages due in respect to the debentures. Commencing 5 days after the occurrence of any event of default

that results in the eventual acceleration of the debentures, the interest rate on the debentures shall accrue at the rate of 18% per annum. Further, as a result of the default, during 2008 the Company recognized the remaining balance of its debt discounts associated with this note in interest expense, and classified the entire balance in short term at June 30, 2009 and December 31, 2008, respectively. The following table summarizes the accrued default interest expense recognized in the accompanying consolidated balance sheets at June 30, 2009 and December 31, 2008, respectively:

	June 30, 2009	December 31, 2008
2005 debenture	$ 29,434	$ 22,121
2006 debenture	666,434	524,284
2007 debenture	2,421,317	1,885,951
February 2008 debenture	258,687	194,420
April 2008 debenture	1,451,120	1,090,608
	$ 4,826,991	$ 3,717,384

11. SERIES A-1 REDEEMABLE CONVERTIBLE PREFERRED STOCK

Effective March 3, 2009, the Company entered into a $5 million credit facility (“Facility”) with a life sciences fund. Under the terms of the agreement, the Company may draw down funds, as needed, from the investor through the issuance of Series A-1 redeemable convertible preferred stock, par value $.001, at a basis of 1 share of Series A-1 redeemable convertible preferred stock for every $10,000 invested.

Conversion Rights

Any shares of Series A-1 redeemable convertible preferred stock may, at the option of the holder, be converted at any time into shares of common stock. The conversion price for the preferred stock is equal to $0.75 per share of common stock. The Company must keep available out of its authorized but unissued shares of common stock, such number of shares sufficient to effect a conversion of all then outstanding shares of the Series A-1 redeemable convertible preferred stock. If at ay time the number of authorized but unissued shares of common stock is not sufficient to effect a conversion of all then outstanding shares of the Series A-1 redeemable convertible preferred stock, the Company must take necessary action to increase its authorized but unissued shares of common stock to such number of shares as is sufficient for conversion.

Dividends

The preferred stock pays dividends, in kind of preferred stock, at an annual rate of 10%, matures in four years from the initial drawdown date, and is convertible into common stock at $0.75 per share.

Redemption Rights

Upon the earlier of (i) the fourth anniversary of the issuance date, and (ii) the occurrence of a major transaction, each holder shall have the right, at such holder’s option, to require the Company to redeem all or a portion of such holder’s share of Series A-1 preferred stock, at a price per share equal to the Series A-1 liquidation value. The Company has the option to pay the redemption price in cash or in shares of its common stock. A major transaction includes (i) the consolidation, merger, or other business combination of the Company with or into another entity, (ii) the sale or transfer of more than 50% of the Company’s assets other than inventory in the ordinary course of business in one or more related series of transactions, or (iii) closing of a purchase, tender or exchange offer made to the holders of more than 50% of the outstanding shares of common stock in which more than 50% of the outstanding shares of common stock were tendered and accepted. The Company shall have the right, at its own option, to redeem all or a portion of the shares of Series A-1 redeemable preferred stock, at any time at a price per share of Series A-1 redeemable preferred stock equal to 100% of the Series A-1 liquidation value. In the event the closing price of the our common stock during the 5 trading days following the put notice falls below 75% of the average of the closing bid price in the 5 trading days prior to the put closing date, the investor may, at its option, and without penalty, decline to purchase the applicable put shares on the put closing date.

Termination and Liquidation Rights

The Company may terminate this agreement and its right to initiate future draw-downs by providing 30 days advanced written notice to the investor. Upon any liquidation, dissolution or winding up of the Company, whether voluntary or involuntary, after payment or provision for payment of debts and other liabilities of the Corporation, before any distribution or payment shall be made to the holders of any other equity securities of the Company by reason of their ownership thereof, the holders of the Series A-1 redeemable convertible preferred stock shall first be entitled to be paid out of the assets of the Company available for distribution to its stockholders an amount with respect to each share of Series A-1 redeemable convertible preferred stock equal to $10,000, plus any accrued by unpaid dividends. If, upon dissolution or winding up of the Company, the assets of the Company shall be insufficient to make payment in full to all holders, then such assets shall be distributed among the holders at the time outstanding, ratably in proportion to the full amounts to which they would otherwise be respectively entitled. During the six months ended June 30, 2009, the Company drew down $1,809,761 on this credit facility.

Because this instrument is redeemable, the Company determined that the Series A-1 redeemable preferred stock should be classified within the mezzanine section between liabilities and equity in its consolidated balance sheets. The embedded conversion option has been recorded as a derivative liability in the Company's consolidated balance sheets, and changes in the fair value each reporting period will be reported in adjustments to fair value of derivatives in the consolidated statements of operations.

The outstanding balance at June 30, 2009 of $1,809,761 is convertible into 2,413,015 shares of the Company's common stock. The Company values the conversion option initially when each draw takes place. The following table summarizes the assumptions used in the Black-Scholes model to value the conversion option associated with each draw, along with the fair value of the embedded conversion option.

			Black-Scholes Assumptions at Draw Date			
Draw Amount	Draw Date	Dividend Yield	Expected Volatility	Risk-Free Rate	Expected Life (Yrs)	Fair Value
$ 1,100,000	4/6/2009	0%	190%	1.90%	4.00	$ 139,985
87,000	4/28/2009	0%	190%	1.83%	3.94	9,951
105,000	5/1/2009	0%	190%	2.03%	3.93	12,007
81,036	5/19/2009	0%	190%	2.12%	3.88	12,204
162,624	6/9/2009	0%	190%	2.86%	3.83	28,428
131,644	6/15/2009	0%	190%	2.75%	3.81	26,237
67,457	6/26/2009	0%	190%	2.53%	3.78	20,145
75,000	6/29/2009	0%	190%	2.53%	3.77	22,386
$ 1,809,761						$ 271,343

The embedded conversion option was again valued at $540,098 at June 30, 2009 at fair value using the Black-Scholes model. The increase in the fair value of the embedded conversion option liability of $268,754 for the three and six months ended June 30, 2009 was recorded through the results of operations as an adjustment to fair value of derivatives. The assumptions used in the Black-Scholes model to value the embedded conversion option at June 30, 2009 were as follows: (1) dividend yield of 0%; (2) expected volatility of 190%, (3) risk-free interest rate of 2.54%, and (4) expected life of 3.77 years.

The following table summarizes the Series A-1 redeemable convertible preferred stock and embedded derivative outstanding at June 30, 2009 and at initial draw dates:

	June 30, 2009	Inception Dates*	Increase (Decrease)
Principal Due	$ 1,809,761	$ 1,809,761	$ -
Accrued Dividend	31,348	-	31,348
Debt Discount	(261,115)	(271,343)	10,228
	1,579,994	1,538,418	41,576
Less current portion	-	-	-
Non-current portion	$ 1,579,994	$ 1,538,418	$ 41,576
Aggregate liquidation value**	$ 1,841,109	$ 1,809,761	$ 31,348

*Represents the sum of values from various draw dates on the Series A-1 redeemable convertible preferred stock facility.
** Represents the sum of principal due and accrued dividends.

The dividends are accrued at a rate of 10% per annum, and the Company records the accrual as interest expense in its consolidated statements of operations in the period incurred. The Company recorded accrued dividends on the Series A-1 redeemable convertible preferred stock of $31,348 for the three and six months ended June 30, 2009.

For providing investor relations services in connection with the Series A-1 redeemable convertible preferred stock credit facility, the Company issued a consultant 24,900,000 shares of its common stock on February 9, 2009. The Company valued the issuance of these shares at $4,731,000 based on a closing price of $0.19 on February 9, 2009 and recorded the value of the shares as deferred financing costs associated with the financing on the date they were issued. Beginning on the date of the first draw-down on April 6, 2009 (the loan maturity date is 4 years after the initial draw-down), each quarter the Company will amortize the deferred issuance costs ratably over the term of the Series A-1 redeemable convertible preferred stock facility.

The Company also incurred a non-refundable commitment fee to the holder of this convertible preferred stock facility in the amount of $250,000. The fee is payable by the Company in either (a) cash, or (b) common stock. If paid in common stock, the Company will issue a number of shares valued at 97% of the volume-weighted average price of its common stock for the five trading days immediately preceding the effective date of the facility, or March 3, 2009. Based on this, as of June 30, 2009, the Company would be required to issue approximately 2,152,000 shares of the Company’s common stock. Beginning on the date of the first draw-down on April 6, 2009 (the loan maturity date is 4 years after the initial draw-down), each quarter the Company will amortize the deferred issuance costs ratably over the term of the Series A-1 redeemable convertible preferred stock facility.

Interest expense on the Series A-1 redeemable convertible preferred stock and deferred financing costs for the three and six months ended June 30, 2009 was $300,019.

12. WARRANT SUMMARY

Warrant Activity

A summary of warrant activity for the six months ended June 30, 2009 is presented below:

	Number of Warrants	Weighted Average Exercise Price	Weighted Average Remaining Contractual Life (in years)	Aggregate Intrinsic Value (000)
Outstanding, December 31, 2008	129,397,951	$ 0.26	3.23	$ -
Granted	-	-		
Exercised	-	-		
Forfeited	(211,000)	$ 1.44		
Outstanding, June 30, 2009	129,186,951	$ 0.27	2.74	-
Vested and expected to vest at June 30, 2009	129,186,951	$ 0.27	2.74	-
Exercisable, June 30, 2009	129,186,951	$ 0.27	2.74	-

The aggregate intrinsic value in the table above is before applicable income taxes and is calculated based on the difference between the exercise price of the warrants and the quoted price of the Company's common stock as of the reporting date.

The following table summarizes information about warrants outstanding and exercisable at June 30, 2009:

	Warrants Outstanding			Warrants Exercisable	
Exercise Price	Number of Shares	Weighted Average Remaining Life (Years)	Weighted Average Exercise Price	Number of Shares	Weighted Average Exercise Price
$ 0.17	95,630,311	3.00	$ 0.17	95,630,311	$ 0.17
0.32	11,148,147	2.19	0.32	11,148,147	0.32
0.34	8,753,762	1.23	0.34	8,753,762	0.34
0.38 - 0.40	5,902,908	3.84	0.39	5,902,908	0.39
0.85 - 0.96	5,734,831	1.46	0.95	5,734,831	0.95
2.20	72,917	2.13	2.20	72,917	2.20
2.48 - 2.54	1,944,075	0.46	2.54	1,944,075	2.54
	129,186,951			129,186,951	

13. ADJUSTMENT TO FAIR VALUE OF DERIVATIVES

The following tables summarize the components of the adjustment to fair value of derivatives which were recorded as charges to results of operations for the three and six months ended June 30, 2009 and 2008.

The following table summarizes by category of derivative liability the increase (decrease) in fair value from market changes during the three months ended June 30, 2009 and 2008, the impact of additional investments and repricing and exercise of certain warrants.

	Three Months Ended June 30, 2009	Three Months Ended June 30, 2008
Embedded Pipe derivatives - 9.05	$ 33,954	$ 79,309
Pipe Hybrid instrument – 9.06	569,326	280,948
Pipe Hybrid- FAS 155 – 8.07	6,583,530	(1,518,774)
Pipe Hybrid- February 2008	245,421	195,270
Pipe Hybrid- April 2008	3,623,936	141,105
Series A-1 Preferred Stock conversion option	268,754	-
Original warrants PIPE 2005 , excluding replacement warrants	257,479	141,407
Replacement Warrants	1,583,911	912,776
Warrants – PIPE 2006-investors	2,369,038	1,397,606
Warrants – PIPE 2007-investors	4,975,723	3,338,410
Warrants – PIPE 2008-investors	4,205,629	816,232
Other Warrant Derivatives- 2005 and 2006	1,552,169	1,173,275
Other Warrants Derivatives - 2007	432,504	249,341
	$ 26,701,374	$ 7,206,905

The following table summarizes by category of derivative liability the increase (decrease) in fair value from market changes during the six months ended June 30, 2009 and 2008, the impact of additional investments and repricing and exercise of certain warrants.

	Six Months Ended June 30, 2009	Six Months Ended June 30, 2008
Embedded Pipe derivatives - 9.05	$ 49,822	$ 168,857
Pipe Hybrid instrument – 9.06	826,711	695,790
Pipe Hybrid- FAS 155 – 8.07	9,078,716	(1,301,276)
Pipe Hybrid- February 2008	18,434	258,632
Pipe Hybrid- April 2008	3,622,043	141,105
Series A-1 Preferred Stock conversion option	268,754	-
Original warrants PIPE 2005 , excluding replacement warrants	368,033	156,014
Replacement Warrants	2,427,804	956,978
Warrants – PIPE 2006-investors	3,673,292	1,478,337
Warrants – PIPE 2007-investors	7,632,265	3,286,787
Warrants – PIPE 2008-investors	6,576,694	816,232
Other Warrant Derivatives- 2005 and 2006	2,333,904	1,296,746
Other Warrants Derivatives - 2007	666,514	272,974
	$ 37,542,986	$ 8,227,176

14. STOCKHOLDERS' EQUITY TRANSACTIONS

The Company is authorized to issue two classes of capital stock, to be designated, respectively, Preferred Stock and Common Stock. The total number of shares of Preferred Stock the Company is authorized to issue is 50,000,000, par value $0.001 per share. The total number of shares of Common Stock the Company is authorized to issue is 500,000,000, par value $0.001 per share. The Company had 181 shares of Series A-1 Redeemable Convertible Preferred Stock outstanding as of June 30, 2009 and 499,905,641 shares of Common Stock outstanding as of June 30, 2009.

Between September 29, 2008 and January 20, 2009, the Company was ordered by the Circuit Court of the Twelfth Judicial District Court for Sarasosa County, Florida to settle certain past due accounts payable, for previous professional services and other operating expenses incurred, by the issuance of shares of its common stock. In aggregate, through June 30, 2009, the Company settled $1,108,673 in accounts payable through the issuance of 260,116,283 shares of its common stock. During the six months ended June 30, 2009, the Company settled $505,199 in accounts payable through the issuance of 39,380,847 shares of its common stock. The Company recorded a loss on settlement of $4,793,949 in its accompanying statements of operations for the three and six months ended June 30, 2009. The losses were calculated as the difference between the amount of accounts payable relieved and the value of the shares (based on the closing share price on the settlement date) that were issued to relieve the accounts payable.

On March 5, 2009, the Company settled a lawsuit originally brought by an investor in January 2009, who is an investor in the 2007 and 2008 debentures, and associated with the default on August 6, 2008 on all debentures. As a result of the lawsuit, the Company was required by court order to reduce the conversion price on convertible debentures held by this investor to $0.02 per share, effective immediately, so long as the Company has a sufficient number of authorized shares to honor the request for conversion. During the six months ended June 30, 2009, the Company issued 4,847,050 shares of its common stock to this investor in conversion of approximately $97,000 of its 2006 debenture at $0.02 per share, and 1,252,950 shares of its common stock to this investor in conversion of approximately $25,000 of its 2007 debenture at $0.02 per share. The Company has considered the impact of Emerging Issue Task Force statements, or EITFs 96 - 19— Debtor's Accounting for a Modification or Exchange of Debt Instruments, 06-6— Debtor's Accounting for a Modification (or Exchange) of Convertible Debt Instruments on the accounting treatment of the change in conversion price of the 2007 and 2008 Convertible Debentures. EITF 96 - 19 states that a transaction resulting in a significant change in the nature of a debt instrument should be accounted for as an extinguishment of debt. The Company calculated the fair value of the conversion option for the 2007 and April 2008 debentures immediately prior to and after the change in the conversion price, and evaluated the impact of the change in conversion price. The Company has concluded that the change in conversion price for this investor constitutes a substantial modification in the terms of the 2007 and 2008 debenture agreements. Based on the Company's evaluation, the below table summarizes the impact relative to the Debentures' face value on March 5, 2009.

Impact on Debentures	Change	Debenture Face Value	% Change
2007 Debenture	$ 1,319,354	$ 6,739,214	20%
April 2008 Debenture	$ 477,014	$ 4,038,880	12%

The change in fair value of the conversion option on the 2007 debenture was $1,319,355, or a 20% change relative to the face value of the debenture. The change in fair value of the conversion option on the April 2008 debenture was $477,014, or a 12% change relative to the face value of the debenture. The Company recorded a loss on modification of debentures in the amount of $1,796,368 during the six months ended June 30, 2009 as a result of this modification.

15. STOCK-BASED COMPENSATION

Stock Plans

On August 12, 2004, ACT's Board of Directors approved the establishment of the 2004 Stock Option Plan (the "2004 Stock Plan"). Stockholder approval was received on December 13, 2004. The total number of common shares available for grant and issuance under the plan may not exceed 2,800,000 shares, subject to adjustment in the event of certain recapitalizations, reorganizations and similar transactions. Common stock purchase options may be exercisable by the payment of cash or by other means as authorized by the Board of Directors or a committee established by the Board of Directors. At June 30, 2009, the Company had 820,000 common share purchase options outstanding under the plan. At June 30, 2009, there were 370,000 options available for grant under this plan.

On December 13, 2004, ACT's Board of Directors and stockholders approved the establishment of the 2004 Stock Option Plan II (the "2004 Stock Plan II"). The total number of common shares available for grant and issuance under the plan may not exceed 1,301,161 shares, subject to adjustment in the event of certain recapitalizations, reorganizations and similar transactions. Common stock purchase options may be exercisable by the payment of cash or by other means as authorized by the Board of Directors or a committee established by the Board of Directors. At June 30, 2009, ACT had granted 1,301,161 common share purchase options under the plan. At June 30, 2009, no options were available for grant under this plan.

On January 31, 2005, the Company's Board of Directors approved the establishment of the 2005 Stock Incentive Plan (the "2005 Plan") for its employees, subject to approval of our shareholders. The total number of common shares available for grant and issuance under the plan may not exceed 9 million shares, plus an annual increase on the first day of each of the Company's fiscal years beginning in 2006 equal to 5% of the number of shares of our common stock outstanding on the last day of the immediately preceding fiscal year, subject to adjustment in the event of certain recapitalizations, reorganizations and similar transactions. On January 24, 2008, the Company's shareholders approved an increase of 25,000,000 shares to the 2005 Plan. Common stock purchase options may be exercisable by the payment of cash or by other means as authorized by the Board of Directors or a committee established by the Board of Directors. At June 30, 2009, 12,364,419 common stock purchase options were outstanding and the Company issued 1,497,263 shares of common stock under the plan. At June 30, 2009, there were 33,456,831 options available for grant under this plan.

Stock Option Activity

A summary of option activity for the three months ended June 30, 2009 is presented below:

	Number of Options	Weighted Average Exercise Price	Weighted Average Remaining Contractual Life (in years)	Aggregate Intrinsic Value (000)
Outstanding, January 1, 2009	14,485,580	$ 0.55	7.25	$ -
Granted	-	-		
Exercised	-	-		
Forfeited	-	-		
Outstanding, June 30, 2009	14,485,580	$ 0.55	6.75	$ 404
Vested and expected to vest at June 30, 2009	14,011,163	0.56	6.69	386
Exercisable, June 30, 2009	10,836,220	0.66	6.15	232

The aggregate intrinsic value in the table above is before applicable income taxes and is calculated based on the difference between the exercise price of the options and the quoted price of the Company's common stock as of the reporting date.

A summary of the status of unvested employee stock options as of June 30, 2009 and changes during the period then ended, is presented below:

	Shares	Weighted Average Grant Date Fair Value Per Share
Unvested at January 1, 2009	4,769,159	$ 0.23
Granted	-	-
Vested	(1,119,799)	0.27
Forfeited	-	-
Unvested at June 30, 2009	3,649,360	$ 0.22

As of June 30, 2009, total unrecognized stock-based compensation expense related to nonvested stock options was approximately $670,000, which is expected to be recognized over a weighted average period of approximately 8.58 years.

The following table summarizes information about stock options outstanding and exercisable at June 30, 2009.

Options Outstanding				Options Exercisable	
Exercise Price	Number of Shares	Weighted Average Remaining Life (Years)	Weighted Average Exercise Price	Number of Shares	Weighted Average Exercise Price
$ 0.05	820,000	5.12	$ 0.05	820,000	$ 0.05
0.21	6,007,403	8.37	0.21	2,396,165	0.21
0.25	1,301,161	5.51	0.25	1,301,161	0.25
0.85	5,604,099	5.59	0.85	5,574,100	0.85
1.35	150,000	6.81	1.35	150,000	1.35
2.04 - 2.11	165,000	6.50	2.07	156,877	2.07
2.20 - 2.48	437,917	6.18	2.27	437,917	2.27
	14,485,580			10,836,220	

16. COMMITMENTS AND CONTINGENCIES

The Company entered into a lease for office and laboratory space in Worcester, Massachusetts commencing December 2004 and expiring April 2010, and for office space in Los Angeles, California commencing November 2005 and expiring May 2008. The Company’s rent at its Los Angeles, California site was on a month-to-month basis after May 2008. On March 1, 2009, the Company vacated its site in Los Angeles, California and moved to another site in Los Angeles. The term on this new lease is through February 28, 2010. Monthly base rent is $2,170. Annual minimum lease payments are as follows:

Year 1	$ 225,281
Year 2	-
Total	$ 225,281

Rent expense recorded in the financial statements for the three months ended June 30, 2009 and 2008 was approximately $183,000 and $310,000, respectively. Rent expense recorded in the financial statements for the six months ended June 30, 2009 and 2008 was approximately $298,000 and $721,000, respectively.

On March 5, 2009, the Company settled a lawsuit originally brought by an investor in January 2009, who is an investor in the 2007 and 2008 debentures, and associated with the default on August 6, 2008 on all debentures. As a result of the lawsuit, the Company was required by court order to reduce the conversion price on convertible debentures held by this investor to $0.02 per share, effective immediately, so long as the Company has a sufficient number of authorized shares to honor the request for conversion. See Note 14.

The Company has entered into employment contracts with certain executives and research personnel. The contracts provide for salaries, bonuses and stock option grants, along with other employee benefits. The employment contracts generally have no set term and can be terminated by either party. There is a provision for payments of three months to one year of annual salary as severance if we terminate a contract without cause, along with the acceleration of certain unvested stock option grants.

17. INCOME TAXES

The Company adopted the provisions of FASB Interpretation No. 48, Accounting for Uncertainty in Income Taxes ("FIN 48"), on January 1, 2007. FIN 48 prescribes a recognition threshold and measurement attribute for the financial statement recognition and measurement of a tax position taken or expected to be taken in a tax return. FIN 48 also provides guidance on derecognition, classification, interest and penalties, accounting in interim periods, disclosure, and transition. Due to the fact that the Company has substantial net operating loss carryforwards, adoption of FIN 48 had no impact on the Company's beginning retained earnings, balance sheets, or statements of operations.

The Company files income tax returns in the U.S. federal jurisdiction, and various states and foreign jurisdictions. With few exceptions, the Company is no longer subject to U.S. federal, state and local income tax examinations by tax authorities for years before 2001.

The Company recognizes accrued interest and penalties on unrecognized tax benefits in income tax expense. The Company did not have any unrecognized tax benefits as of June 30, 2009 and 2008. As a result, the Company did not recognize interest expense, and additionally, did not record any penalties during the three and six months ended June 30, 2009 and 2008. The Company does not expect that the amounts of unrecognized tax benefits will change significantly within the next 12 months.

18. SUBSEQUENT EVENTS

Subsequent to June 30, 2009, the Company drew down an additional $359,130 on its Series A-1 redeemable convertible preferred stock facility. See Note 11.

On June 30, 2009, Alpha Capital submitted a conversion notice in the principle amount of $150,000 into 7,500,000 shares of common stock at $0.02 per share. The Company did not have sufficient authorized shares to satisfy this conversion notice. On July 6, 2009, by means of a settlement between the 2 parties, the Company agreed to deliver the 7,500,000 shares of its common stock no later than September 25, 2009. Further, the Company agreed to provide Alpha Capital with an additional $110,000 Debenture, which is to be upon the same terms and conditions as the April 2008 Debenture.

Forbearance and Amendment to 2005, 2006, 2007 and 2008 Debentures

On July 29, 2009, the Company entered into a consent, amendment and exchange agreement (the "Consent and Amendment") with holders (the "Holders") of the Company's outstanding convertible debentures and warrants to purchase shares of the Company's common stock (the "Warrants"), which were issued in private placements to the 2005, 2006, 2007 and 2008 debentures.

Simultaneously with the execution of Consent and Amendment, and as a condition of the Consent and Amendment, the Company and the Holders entered into a Standstill and Forbearance Agreement (the "Forbearance Agreement"). Pursuant to the Forbearance Agreement:

- The Company acknowledged certain defaults that have occurred under the Debentures and documents executed in connection therewith (the "Transaction Documents").

- The Holders agreed to forbear from exercising their rights and remedies under the Debentures and the Transaction Documents.
- The obligation of the Holders to forbear from exercising their rights and remedies under the Debentures and the Transaction Documents will terminate on the earliest of (i) the date, if any, on which a petition for relief under the date, if any, on which a petition for relief under the United States Bankruptcy Code or any similar state or Canadian law is filed by or against the Company or any of its subsidiaries or (ii) the date the Forbearance Agreement is otherwise terminated or expires, it being understood that the Holders holding 67% of the then outstanding principal amount of the Debentures shall have the right to terminate the Forbearance Agreement on 3 business days' prior notice to the Company.

- The Company provided a general release in favor of the Holders.

Pursuant to the Consent and Amendment:

- The Company agreed to issue to each Holder in exchange for such Holder's Debenture an amended and restated Debenture (the "Amended and Restated Debentures") in a principal amount equal to the principal amount of such Holder's Debenture times 1.35 minus any interest paid thereon.
- The conversion price under the Amended and Restated Debentures was reduced to $0.10, subject to further adjustment as provided therein (including for stock splits, stock dividends, and certain subsequent equity sales).

- The maturity date under the Amended and Restated Debentures was extended until December 31, 2010.
- The Amended and Restated Debentures bear interest at the rate of 12% per annum, which shall accrete to, and increase the principal amount payable upon maturity.

- The Amended and Restated Debentures will begin to amortize on September 25, 2009 at a rate of 6.25% of the outstanding principal amount per month, valued at the lesser of the then conversion price and 90% of the average volume weighted average price for the ten prior trading days.
- The Company agreed to issue to each Holder in exchange for such Holder's Warrant an amended and restated Warrant (the "Amended and Restated Warrants").

- The exercise price under the Amended and Restated Warrants was reduced to $0.10 subject to further adjustment as provided therein (including for stock splits, stock dividends, and certain subsequent equity sales).
- The termination date under the Amended and Restated Warrants was extended until June 30, 2014.

- Each Holder agreed not to convert more than 20% of such Holder's outstanding principal amount of Amended and Restated Debenture in any month during the period from September 1, 2009 through January 31, 2010, provided, however, that this limitation will terminate if (i)(a) the volume weighted average price of the Company's common stock for each of 5 consecutive trading days is greater than $0.15 per share, and (b) the trading volume on such days exceeds 7,500,000 shares per trading day, or (ii)(a) the volume weighted average price for any one trading day is greater than $0.20 per share and (b) the trading volume on such day exceeds

10,000,000 shares.

- The Company agreed to amend its articles of incorporation to increase the number of authorized shares of Common Stock (the "Amendment"). If the Company does not receive the receive the requisite shareholder approval for, and receive acceptance of the filing for, the Amendment by September 25, 2009, the Company shall pay to the Holders, monthly commencing on September 25, 2009, until the Amendment is duly filed, liquidated damages equal to 5% of the purchase price of the Debentures.

- The Company agreed to increase the number of shares available for issuance under the Company's 2005 Stock Incentive Plan to 129,000,000 shares, by September 18, 2009.
- The Holders agreed to waive any event of default under the Debentures resulting solely from (i) any adjustment to the conversion price of the Debenture and exercise price of the Warrants that would result from the reduction of the conversion price of certain securities of the Company pursuant to the Stipulation of Settlement, dated March 11, 2009, between the Company and Alpha Capital, and (ii) any failure by the Company to reserve such number of authorized but unissued shares of common stock issuable upon conversion of the Debentures and exercise of the Warrants.

CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS

This Quarterly Report on Form 10-Q and the materials incorporated herein by reference contain forward-looking statements that involve risks and uncertainties. We use words such as “may,” “assumes,” “forecasts,” “positions,” “predicts,” “strategy,” “will,” “expects,” “estimates,” “anticipates,” “believes,” “projects,” “intends,” “plans,” “budgets,” “potential,” “con variations thereof, and other statements contained in quarterly report, and the exhibits hereto, regarding matters that are not historical facts and are forward-looking statements. Because these statements involve risks and uncertainties, as well as certain assumptions, actual results may differ materially from those expressed or implied by such forward-looking statements. Factors that could cause actual results to differ materially include, but are not limited to risks inherent in: our early stage of development, including a lack of operating history, lack of profitable operations and the need for additional capital; the development and commercialization of largely novel and unproven technologies and products; our ability to protect, maintain and defend our intellectual property rights; uncertainties regarding our ability to obtain the capital resources needed to continue research and development operations and to conduct research, preclinical development and clinical trials necessary for regulatory approvals; uncertainty regarding the outcome of clinical trials and our overall ability to compete effectively in a highly complex, rapidly developing, capital intensive and competitive industry. See “RISK FACTORS THAT MAY AFFECT OUR BUSINESS” set forth herein for a more complete discussion of these factors. Readers are cautioned not to place undue reliance on these forward-looking statements, which speak only as of the date that they are made. We undertake no obligation to publicly update or revise any forward-looking statements, whether as a result of new information, future events or otherwise.

Forward-looking statements include our plans and objectives for future operations, including plans and objectives relating to our products and our future economic performance. Assumptions relating to the foregoing involve judgments with respect to, among other things, future economic, competitive and market conditions, future business decisions, and the time and money required to successfully complete development and commercialization of our technologies, all of which are difficult or impossible to predict accurately and many of which are beyond our control. Although we believe that the assumptions underlying the forward-looking statements contained herein are reasonable, any of those assumptions could prove inaccurate and, therefore, we cannot assure you that the results contemplated in any of the forward-looking statements contained herein will be realized. Based on the significant uncertainties inherent in the forward-looking statements included herein, the inclusion of any such statement should not be regarded as a representation by us or any other person that our objectives or plans will be achieved.

Report of Independent Registered Public Accounting Firm

To the Board of Directors
Advanced Cell Technology, Inc.
Los Angeles, CA

We have audited the accompanying consolidated balance sheets of Advanced Cell Technology, Inc and subsidiary as of December 31, 2008 and 2007, and the related consolidated statements of operations, stockholders' deficit and cash flows for the years then ended. These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these financial statements based on our audits.

We conducted our audits in accordance with auditing standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of Advanced Cell Technology Inc. and subsidiary as of December 31, 2008 and 2007, and the results of its operations and its cash flows for the years then ended in conformity with accounting principles generally accepted in the United States of America.

The accompanying financial statements have been prepared assuming that the Company will continue as a going concern. As discussed in Note 1 to the financial statements, the Company has suffered recurring net losses from operations, negative cash flows from operations, a substantial stockholders' deficit and its total liabilities exceeds its total assets. This raises substantial doubt about the Company's ability to continue as a going concern. Management's plans in regard to these matters are also described in Note 1. The financial statements do not include any adjustments that might result from the outcome of this uncertainty.

We were not engaged to examine management's assessment of the effectiveness of Advanced Cell Technology, Inc. and subsidiary's internal control over financial reporting as of December 31, 2008, included in the accompanying Management's Report on Internal Control over Financial Reporting and, accordingly, we do not express an opinion thereon.

/s/ SingerLewak LLP

Los Angeles, California
July 2, 2009

ADVANCED CELL TECHNOLOGY, INC. AND SUBSIDIARY
CONSOLIDATED BALANCE SHEETS
AS OF DECEMBER 31, 2008 AND 2007

	December 31, 2008	December 31, 2007 (restated)
ASSETS		
CURRENT ASSETS:		
Cash and cash equivalents	$ 816,904	$ 1,166,116
Accounts receivable	261,504	27,026
Prepaid expenses	32,476	68,416
Deferred royalty fees, current portion	182,198	341,274
Total current assets	1,293,082	1,602,832
Property and equipment, net	400,008	914,504
Investment in joint venture	225,200	-
Deferred royalty fees, less current portion	659,488	1,202,430
Deposits	-	115,192
Deferred issuance costs, net of amortization of $8,666,387 and $3,874,300	-	4,772,087
TOTAL ASSETS	$ 2,577,778	$ 8,607,045
LIABILITIES AND STOCKHOLDERS' DEFICIT		
CURRENT LIABILITIES:		
Accounts payable	$ 8,287,786	$ 5,517,876
Accrued expenses	2,741,591	1,120,781
Accrued default interest	3,717,384	-
Deferred revenue, current portion	834,578	497,374
Advances payable - other	130,000	130,000
2005 Convertible debenture and embedded derivatives, net of discounts of $0 and $600,246	85,997	1,276,871
2006 Convertible debenture and embedded derivatives (fair value $1,993,354 and $3,939,862)	1,993,354	1,625,327
2007 Convertible debenture and embedded derivatives (fair value $7,706,344 and $3,874,026)	7,706,344	1,160,847
February 2008 Convertible debenture and embedded derivatives (fair value $1,757,470 and $0)	1,757,470	-
April 2008 Convertible debenture and embedded derivatives (fair value $4,066,505 and $0)	4,066,505	-
Warrant and option derivatives, current portion	2,655,849	14,574
Deferred joint venture obligations, current portion	167,335	-
Short term capital leases	12,955	31,605
Notes payable, other	468,425	468,425
Total current liabilities	34,625,573	11,843,680
2006 Convertible debenture and embedded derivatives, less current portion (fair value $0 and $3,447,230)	-	1,422,164

2007 Convertible debenture and embedded derivatives, less current portion (fair value $0 and $7,748,052)	-	2,321,695
Warrant and option derivatives, less current portion	-	13,011,751
Deferred joint venture obligations, less current portion	63,473	-
Deferred revenue, less current portion	3,817,716	1,534,485
Total liabilities	38,506,762	30,133,775
Commitments and contingencies	-	-
STOCKHOLDERS' DEFICIT:		
Preferred stock, $0.001 par value; 50,000,000 shares authorized, 0 issued and outstanding	-	-
Common stock, $0.001par value; 500,000,000 shares authorized, 429,448,381 and 85,027,461 issued and outstanding	429,448	85,027
Additional paid-in capital	53,459,172	34,302,334
Accumulated deficit	(89,817,604)	(55,914,091)
Total stockholders' deficit	(35,928,984)	(21,526,730)
TOTAL LIABILITIES AND STOCKHOLDERS' DEFICIT	$ 2,577,778	$ 8,607,045

The accompanying notes are an integral part of these consolidated financial statements.

ADVANCED CELL TECHNOLOGY, INC. AND SUBSIDIARY
CONSOLIDATED STATEMENTS OF OPERATIONS
FOR THE YEARS ENDED DECEMBER 31, 2008 AND 2007

	2008	2007 (restated)
Revenue (License fees and royalties)	$ 787,106	$ 647,349
Cost of Revenue	765,769	428,913
Gross profit	21,337	218,436
Operating expenses:		
Research and development	8,635,577	12,744,913
In-process R&D expense - Mytogen	-	4,094,736
Grant reimbursements	(105,169)	(67,179)
General and administrative expenses	5,009,418	6,781,705
Total operating expenses	13,539,826	23,554,175
Loss from operations	(13,518,489)	(23,335,739)
Non-operating income (expense):		
Interest income	7,933	162,091
Interest expense and late fees	(26,614,761)	(21,023,663)
Finance cost	(806,079)	(15,400)
Charges related to issuance of 2008 convertible debentures	(1,217,342)	-
Charges related to issuance of 2007 convertible debenture and warrants	-	(3,871,656)
Charges related to repricing of 2005 convertible debenture and warrants	-	(843,277)
Income related to repricing of 2006 and 2007 convertible debentures and warrants	847,588	-
Adjustments to fair value of derivatives	13,082,247	32,835,057
Losses attributable to equity method investment	(20,930)	-
Loss on disposal of fixed assets	(227,543)	-
Gain (loss) on settlement	(5,436,137)	193,862
Total non-operating income (expense)	(20,385,024)	7,437,014
Loss before income tax	(33,903,513)	(15,898,725)
Income tax	-	-
Net loss	$ (33,903,513)	$ (15,898,725)
Weighted average shares outstanding :		
Basic	245,279,135	61,115,618
Diluted	245,279,135	61,115,618
Loss per share:		
Basic	$ (0.14)	$ (0.26)
Diluted	$ (0.14)	$ (0.26)

The accompanying notes are an integral part of these consolidated financial statements.

ADVANCED CELL TECHNOLOGY, INC. AND SUBSIDIARY
CONSOLIDATED STATEMENTS OF STOCKHOLDERS' DEFICIT
FOR THE YEARS ENDED DECEMBER 31, 2008 AND 2007

	Common Stock Shares	Common Stock Amount	Additional Paid in Capital	Accumulated Deficit	Total Stockholders' Deficit
Balance December 31, 2006 (Restated)	39,318,070	39,318	12,291,873	(40,015,366)	(27,684,175)
Convertible debentures redemptions	19,243,386	19,243	6,879,914	-	6,899,157
Convertible debentures conversions	16,625,579	16,626	11,069,317	-	11,085,943
Issuance of stock in payment of board fees	35,909	36	20,716	-	20,752
Option compensation charges	-	-	531,113	-	531,113
Issuance of stock in payment of license fees	800,000	800	607,200	-	608,000
Issuance of stock in payment of employee bonuses	515,000	515	406,335	-	406,850
Issuance of stock to employees	340,000	340	16,660	-	17,000
Issuance of stock in payment of legal fees	85,000	85	67,915	-	68,000
Issuance of stock in acquisition of Mytogen	9,064,517	8,064	2,411,291	-	2,419,355
Net loss for the year ended December 31, 2007 (Restated)	-	-	-	(15,898,725)	(15,898,725)
Balance December 31, 2007 (Restated)	85,027,461	$ 85,027	$ 34,302,334	$ (55,914,091)	$ (21,526,730)
Convertible debentures redemptions	65,463,111	65,463	5,390,989	-	5,456,452
	39,741,987	39,743	6,121,900	-	6,161,643

Convertible debentures conversions					
Issuance of stock for debenture financing costs	14,710,329	14,710	791,369	-	806,079
Option compensation charges	-	-	527,243	-	527,243
Adjustment to fair value of derivatives	-	-	78,367	-	78,367
Issuance in respect of anti-dilution provision of convertible debenture	70,503	71	15,510	-	15,581
Issuance of stock in payment of professional fees	1,002,291	1,002	212,847	-	213,849
Issuance of stock in settlement of accounts payable	220,735,436	220,735	5,818,877	-	6,039,612
Issuance of stock under stock incentive plan	1,497,263	1,497	140,936	-	142,433
Issuance of stock upon exercise of options	1,200,000	1,200	58,800	-	60,000
Net loss for the year ended December 31, 2008	-	-	-	(33,903,513)	(33,903,513)
Balance December 31, 2008	429,448,381	$ 429,448	$ 53,459,172	$ (89,817,604)	$ (35,928,984)

The accompanying notes are an integral part of these consolidated financial statements

ADVANCED CELL TECHNOLOGY, INC. AND SUBSIDIARY
CONSOLIDATED STATEMENTS OF CASH FLOWS
FOR THE YEARS ENDED DECEMBER 31, 2008 AND 2007

	2008	2007 (restated)
CASH FLOWS FROM OPERATING ACTIVITIES:		
Net loss	$ (33,903,513)	$ (15,898,725)
Adjustments to reconcile net loss to net cash used in operating activities:		
Depreciation and amortization	402,867	386,643
Write-off of uncollectible accounts receivable	30,782	-
Amortization of deferred charges	702,018	407,391
Amortization of deferred revenue	(798,310)	(497,349)
Stock based compensation	889,269	531,113
Amortization of deferred issuance costs	4,792,087	3,874,300
Amortization of discounts	17,871,392	17,052,016
Gain on extinguishment of debt	-	(193,862)
Adjustements to fair value of derivatives	(13,082,247)	(32,835,057)
Charges related to issuance of February 2008 convertible notes	685,573	-
Mytogen acquisition	-	4,094,736
Charges related to issuance of April 2008 convertible notes	531,769	-
Charges related to issuance of 2007 convertible debentures	-	3,871,656
Repricing of 2005 convertible debentures and warrants	-	843,277
Repricing of 2006 and 2007 convertible debentures and warrants	(847,588)	-
Shares of common stock issued for professional services	759,496	1,307,828
Shares of common stock issued for board fees	-	20,752
Shares of common stock issued for financing costs	806,079	-
Warrants issued for consulting services	155,281	-
Charges related to settlement of anti-dilution provision	15,581	-
Forfeiture of rent deposits	88,504	-
Loss on disposal of fixed assets	227,543	-
Loss on settlement of litigation	5,436,138	-
Loss attributable to investment in joint venture	20,930	-
Amortization of deferred joint venture obligations	(15,322)	-
(Increase) / decrease in assets:		
Accounts receivable	(265,260)	39,293
Prepaid expenses	35,940	42,812
Deferred charges	-	(55,000)
Increase / (decrease) in current liabilities:		
Accounts payable and accrued expenses	5,355,228	976,712
Interest Payable	3,722,198	-
Deferred revenue	3,418,745	-
Net cash used in operating activities	(2,964,820)	(16,031,464)
CASH FLOWS FROM INVESTING ACTIVITIES		
Purchases of property and equipment	(174,514)	(158,522)
Return of deposits	-	18,649

Net cash used in investing activities	(174,514)	(139,873)
CASH FLOWS FROM FINANCING ACTIVITIES:		
Proceeds from exercise of stock options	-	17,000
Proceeds from issuance of convertible notes, net of cost	2,182,432	8,848,200
Payments on convertible debentures	-	(139,123)
Payments on notes and leases	(18,650)	(77,960)
Proceeds from notes payable	630,000	-
Payment for issuance costs on note payable	(3,660)	-
Net cash provided by financing activities	2,790,122	8,648,117
NET DECREASE IN CASH AND CASH EQUIVALENTS	(349,212)	(7,523,220)
CASH AND CASH EQUIVALENTS, BEGINNING BALANCE	1,166,116	8,689,336
CASH AND CASH EQUIVALENTS, ENDING BALANCE	$ 816,904	$ 1,166,116
CASH PAID FOR:		
Interest	$ -	$ 10,016
Income taxes	$ 1,549	$ -
SUPPLEMENTAL DISCLOSURE OF NON-CASH FINANCING ACTIVITIES:		
Issuance of 65,463,111 and 19,243,386 shares of common stock in redemption of convertible debentures	$ 5,456,452	$ 7,038,000
Issuance of 39,741,987 and 16,625,579 shares of common stock in conversion of convertible debentures	$ 6,161,643	$ 8,391,000
Issuance of 70,503 shares of common stock to settle an anti-dilution provision feature of convertible debenture	$ 15,581	$ -
Issuance of 1,200,000 shares of common stock upon exercise of employee stock options	$ 60,000	$ -
Issuance of 220,735,436 shares of common stock in settlement of litigation	$ 6,039,612	$ -
Issuance of 35,909 shares of common stock in payment of board fees	$	$ 21,000
Issuance of 800,000 shares of common stock in payment of license fees	$	$ 608,000
Issuance of 515,000 shares of common stock in payment of employee bonuses	$	$ 407,000
Issuance of 85,000 shares of common stock in settlement of legal fees	$	$ 68,000
Issuance of 8,064,517 shares of common stock in acquisition of Mytogen	$ -	$ 2,419,000

The accompanying notes are an integral part of these consolidated financial statements.

ADVANCED CELL TECHNOLOGY, INC. AND SUBSIDIARY
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
December 31, 2008 and 2007

1. ORGANIZATIONAL MATTERS

Organization

On January 31, 2005, Advanced Cell Technology, Inc. (formerly known as A.C.T. Holdings, Inc.) (the "Company") completed a merger with Advanced Cell, Inc. (formerly known as Advanced Cell Technology, Inc.), a Delaware corporation ("ACT"), pursuant to which a wholly-owned subsidiary of the Company merged with and into ACT, with ACT remaining as the surviving corporation and a wholly-owned subsidiary of the Company. Upon the completion of the merger, the Company ceased all of its pre-merger operations and adopted the business of ACT.

Prior to the merger, the Company had minimal business, operations, revenues and assets, and had been involved in an industry entirely unrelated to the business of ACT. Therefore, the acquisition of ACT by the Company represented a complete change in the nature of the Company's business and operations, and changed the nature of any prior investment in the Company.

The transaction has been accounted for as a recapitalization of ACT, the accounting acquirer. The historical financial statements presented for periods prior to the merger are those of ACT.

On November 18, 2005, a majority of the Company's stockholders approved the reincorporation of the Company from the state of Nevada to the state of Delaware pursuant to a merger of the Company with and into a newly formed Delaware corporation, followed by a "roll up" merger to combine the operating subsidiary with the Company.

Nature of Business

The Company is a biotechnology company focused on developing and commercializing human embryonic and adult stem cell technology in the emerging fields of regenerative medicine. Principal activities to date have included obtaining financing, securing operating facilities, and conducting research and development. The Company has no therapeutic products currently available for sale and does not expect to have any therapeutic products commercially available for sale for a period of years, if at all. These factors indicate that the Company's ability to continue its research and development activities is dependent upon the ability of management to obtain additional financing as required.

Going Concern

As reflected in the accompanying financial statements, the Company has losses from operations, negative cash flows from operations, a substantial stockholders' deficit and current liabilities exceed current assets. The Company may thus not be able to continue as a going concern and fund cash requirements for operations through the next 12 months with current cash reserves. As discussed below, the Company was able to raise additional cash in the second half of 2008 and the first quarter of 2009. Notwithstanding success in raising capital, there continues to be substantial doubt about the Company's ability to continue as a going concern.

In view of the matters described in the preceding paragraph, recoverability of a major portion of the recorded asset amounts shown in the accompanying consolidated balance sheet is dependent upon continued operations of the Company, which, in turn, is dependent upon the Company's ability to continue to raise capital and ultimately generate positive cash flows from operations. The financial statements do not include any adjustments relating to the recoverability and classification of recorded asset amounts or amounts and classifications of liabilities that might be

necessary should the Company be unable to continue its existence.

Management has taken or plans to take the following steps that it believes will be sufficient to provide the Company with the ability to continue in existence:

- On April 4, 2008, the Company released closing escrow on the issuance of $4,038,880 of its amortizing senior secured convertible debentures and associated warrants. The purchasers purchased from the Company senior secured convertible debentures and warrants to purchase shares of the Company's common stock. The net cash and cash in-kind received by the Company related to this financing was $2,212,432.

- On April 30, 2008 the Company received a one time payment of $300,000 from Terumo International which extended their ability to commence a Phase I Clinical Trial in Japan by one year.

- On May 31, 2008, the Company closed its Alameda, California and Charlestown, Massachusetts facilities in an effort to streamline and focus on its most advanced clinical programs as part of a cost reduction program designed to reduce annual operating expenses by $5-6 million. In conjunction with the cost reduction activities, the Company has not renewed its Alameda, California sublease and has vacated its Charlestown, Massachusetts facility.

- On June 17, 2008, the Company drew down $60,000 and received $50,000 (reflecting a 16.66% original issue discount) under Note B described in Note 8 to the financial statements.

- On July 10, 2008, the Company granted an exclusive license to Embryome Sciences, Inc., a wholly owned subsidiary of BioTime, Inc., to use its "ACTCellerate" embryonic stem cell technology and a bank of over 140 diverse progenitor cell lines derived using that technology. Under the agreement, the Company received an up-front payment of $470,000, and is eligible to receive an 8% royalty on sales of products, services, and processes that utilize the licensed technology. However, as discussed in more detail in Note 18, in connection with unpaid rents ordered to be paid to a landlord, the Company has assigned the landlord rights and interest to 62.5% of all royalties on this contract, and 65% of all other consideration payable under this license agreement until such time that the Company has repaid amounts owed to the landlord that total $475,000.

- Between September 29, 2008 and January 20, 2009, the Company settled certain past due accounts payable by the issuance of shares of its common stock. In aggregate, the Company settled $1,108,673 in accounts payable through the issuance of 260,116,283 shares of its common stock.

- On December 1, 2008, the Company and CHA Bio & Diostech Co., Ltd. ("CHA"), a leading Korean-based biotechnology company focused on the development of stem cell technologies, formed an international joint venture. The new company, Stem Cell & Regenerative Medicine International, Inc. ("SCRMI"), will develop human blood cells and other clinical therapies based on the Company's hemangioblast program, one of the Company's core technologies. CHA has agreed to contribute $150,000 cash and to fund operational costs in order to conduct the hemangioblast program. Additionally, SCRMI has agreed to pay the Company a

fee of $500,000 for an exclusive, worldwide license to the Hemangioblast Program. As of June 30, 2009, SCRMI has paid the Company the entire $500,000 towards payment of the license fee. See Note 6 for additional details of the joint venture.

- On December 18, 2008, the Company entered into a license agreement with an Ireland-based investor, Transition Holdings Inc. (“Transition”), for certain of its non-core technology. Under the agreement, Transition agreed to acquire a license to the technology for $3.5 million in cash. Through December 31, 2008, the Company had received $2 million in cash under this agreement. As of June 30, 2009, the Company has received the entire $3.5 million in cash under this agreement. The Company expects to apply the proceeds towards its retinal epithelium (“RPE”) cells program.

- On March 30, 2009, the Company entered into a second license agreement with CHA under which the Company will license its retinal pigment epithelium ("RPE") technology, for the treatment of diseases of the eye, to CHA for development and commercialization exclusively in Korea. The Company is eligible to receive up to a total of $1.9 million in fees based upon the parties achieving certain milestones, including the Company making an IND submission to the US FDA to commence clinical trials in humans using the technology. The Company received an up-front fee under the license in the amount of $1,000,000 on April 1, 2009. Under the agreement, CHA will incur all of the costs associated with the RPA clinical trials in Korea. The agreement is part of continuing cooperation and collaboration between the two companies.

- On March 11, 2009, the Company entered into a $5 million credit facility ("Facility") with a life sciences fund. Under the agreement, the proceeds from the Facility must be used exclusively for the Company to file an investigational new drug ("IND") for its retinal pigment epithelium ("RPE") program, and will allow the Company to complete both Phase I and Phase II studies in humans. An IND is required to commence clinical trials. Under the terms of the agreement, the Company may draw down funds, as needed for clinical development of the RPE program, from the investor through the issuance of Series A-1 convertible preferred stock. The preferred stock pays dividends, in kind of preferred stock, at an annual rate of 10%, matures in four years from the initial issuance date, and is convertible into common stock at $0.75 per share. As of June 30, 2009, the Company has drawn down approximately $1,505,000 on this facility.

- On May 13, 2009, the Company entered into a third license agreement with CHA under which the Company will license its proprietary "single blastomere technology," which has the potential to generate stable cell lines, including RPE for the treatment of diseases of the eye, for development and commercialization exclusively in Korea. The Company received an upfront license fee of $300,000.

- Management anticipates raising additional future capital from its current convertible debenture holders, or other financing sources, that will be used to fund any capital shortfalls. The terms of any financing will likely be negotiated based upon current market terms for similar financings. No commitments have been received for additional investment and no assurances can be given that this financing will ultimately be completed.

- Management has focused its scientific operations on product development in order to accelerate the time to market products which will ultimately generate revenues. While the amount or timing of such revenues cannot be determined, management believes that focused development will ultimately provide a quicker path to revenues, and an increased likelihood of raising additional financing.

- Management will continue to pursue licensing opportunities of the Company's extensive intellectual property portfolio.

2. RESTATEMENT

As indicated in Notes 7 through 11, the Company has issued a series of complex convertible debentures over the past several years. The convertible debentures are issued for less than face value, thus generating significant original issue discounts. In conjunction with the instruments, the Company has issued substantial numbers of warrants, and the value of these warrants as of the issue date is treated in the same manner as an original issue discount. These discounts are amortized into interest expense over the life of the debenture, which is a complex calculation due to the planned monthly redemptions after a certain point included in the debenture agreements. Further, the Debentures are converted into shares at the holder's option, the timing of which depends on the price of the Company's stock. The Company also gives brokers and other intermediaries considerable value via cash and warrants in order to assist in selling the debentures. The costs associated with issuing the debt are capitalized and amortized over the life of the debt.

On September 6, 2006, the Company entered into a securities purchase agreement in which the purchasers purchased from the Company amortizing convertible debentures and warrants to purchase shares of the Company's common stock. In connection with that transaction, and for each quarter thereafter, the Company performed a valuation of the debentures and warrants (see Note 10).

On March 24, 2008, the Company discovered that it had been using an incorrect number of warrants in calculating the appropriate fair value. The Company had been using 4,541,672 warrants instead of the correct number of 19,064,670 warrants. Upon learning of the error, the Company recalculated the correct fair value and noted that this change in warrant valuation had no impact on the value of the related convertible debentures and all the related embedded derivatives.

In mid-May 2008, the Company discovered that the Deferred Issuance costs and discounts had been amortized over a period longer than the weighted average life of the instruments, with the result that the discounts and debt issuance costs should have been charged to interest expense on a faster basis than had been the case. Upon learning of the error the Company has recalculated the amortization and resulting interest expense. The Company also discovered that its calculation of the weighted average shares used in calculating basic and diluted earnings per share for the year ended December 31, 2007 was in error. The actual basic and diluted weighted average shares outstanding for the year ended December 31, 2007 was approximately 20,238,000 shares higher than reported.

In accordance with Statement of Accounting Standards No. 154, the Company has determined that these were errors, and has therefore restated the accompanying statements of operations, and cash flows for the year ended December 31, 2007 and the balance sheet as of December 31, 2007.

	As Originally Reported	Restated	Difference
December 31, 2007			
Balance Sheet			
Deferred issuance costs	$ 5,107,599	$ 4,772,087	$ (335,512)
2005 Convertible debenture and embedded derivatives – current portion	$ 1,040,156	$ 1,276,871	$ 236,715
2006 Convertible debenture and embedded derivatives – current portion	$ 906,860	$ 1,625,327	$ 718,467
2007 Convertible debenture and embedded derivatives – current portion	$ 363,805	$ 1,160,847	$ 797,042
	$ 793,504	$ 1,422,164	$ 628,660

2006 Convertible debenture and embedded derivatives, less current portion			
2007 Convertible debenture and embedded derivatives, less current portion	$ 2,364,731	$ 2,321,695	$ (43,036)
Accumulated deficit	$ (53,240,732)	$ (55,914,091)	$ (2,673,359)
Total stockholders' deficit at December 31, 2007	$ (18,853,371)	$ (21,526,730)	$ (2,673,359)

	As Originally Reported	Restated	Difference
Year Ended December 31, 2007			
Statement of Operations			
Interest expense	$ (18,350,304)	$ ($21,023,663)	$ (2,673,359)
Net loss	$ (13,225,366)	$ (15,898,725)	$ (2,673,359)
Basic and diluted loss per share	$ (0.32)	$ (0.26)	$ (0.06)
Weighted average shares – basic and diluted	40,877,145	61,115,618	20,238,473
Statement of Cash Flows			
Net loss	$ (13,225,366)	$ (15,898,725)	$ (2,673,359)
Amortization of deferred issuance cost	$ 3,538,788	$ 3,874,300	$ 335,512
Amortization of discount	$ 14,714,169	$ 17,052,016	$ 2,337,847

3. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Basis of Presentation—The accompanying consolidated financial statements have been prepared in accordance with accounting principles generally accepted in the United States of America (“GAAP”).

Principles of Consolidation —The accounts of the Company and Mytogen, Inc. (“Mytogen”) are included in the accompanying consolidated financial statements for the period from September 20, 2007 to December 31, 2007. On September 20, 2007, a newly formed subsidiary of the Company merged into Mytogen to effect a reorganization of Mytogen. As a result of the merger, the Company became the owner of 100% of the outstanding shares of Mytogen. During the period from September 20, 2007 to December 31, 2008, all intercompany balances and transactions were eliminated in consolidation.

Segment Reporting —SFAS No. 131, “Disclosure about Segments of an Enterprise and Related Information” requires use of the “management approach” model for segment reporting. The management approach model is based on the way a company’s management organizes segments within the company for making operating decisions and assessing performance. The Company determined it has one operating segment. Disaggregation of the Company’s operating results is impracticable, because the Company’s research and development activities and its assets overlap, and management reviews its business as a single operating segment. Thus, discrete financial information is not available by more than one operating segment.

Use of Estimates —These consolidated financial statements have been prepared in accordance with accounting principles generally accepted in the United States and, accordingly, require management to make estimates and assumptions that affect the reported amounts of assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Specifically, the Company’s management has estimated variables used to calculate the Black-Scholes and binomial lattice model calculations used to value derivative instruments as discussed below under “Fair Value Measurements”. In addition, management has estimated the expected economic life and value of the Company’s licensed technology, the Company’s net operating loss for tax purposes, share-based payments for compensation to employees, directors, consultants and investment banks, and the useful lives of the Company’s fixed assets and its accounts receivable allowance. Actual results could differ from those estimates.

Reclassifications—Certain prior year financial statement balances have been reclassified to conform to the current year presentation. These reclassifications had no effect on the recorded net loss.

Cash and Cash Equivalents —Cash equivalents are comprised of certain highly liquid investments with maturities of three months or less when purchased. The Company maintains its cash in bank deposit accounts, which at times, may exceed federally insured limits. The Company has not experienced any losses related to this concentration of risk. As of December 31, 2008 and 2007, the Company had deposits in excess of federally-insured limits totaling $655,074 and $965,042, respectively. The Company has not experienced any losses in such accounts.

Accounts Receivable —The Company periodically assesses its accounts receivable for collectability on a specific identification basis. Past due status on accounts receivable is based on contractual terms. If collectability of an account becomes unlikely, the Company records an allowance for that doubtful account. Once the Company has exhausted efforts to collect, management writes off the account receivable against the allowance it has already created. The Company does not require collateral for its trade accounts receivable.

Property and Equipment — The Company records its property and equipment at historical cost. The Company expenses maintenance and repairs as incurred. Upon disposition of property and equipment, the gross cost and accumulated depreciation are written off and the difference between the proceeds and the net book value is recorded as a gain or loss on sale of assets. In the case of certain assets acquired under capital leases, the assets are recorded net of imputed interest, based upon the net present value of future payments. Assets under capital lease are pledged as collateral for the related lease.

The Company provides for depreciation over the assets' estimated useful lives as follows:

Machinery & equipment	4 years
Computer equipment	3 years
Office furniture	4 years
Leasehold improvements	Lesser of lease life or economic life
Capital leases	Lesser of lease life or economic life

Equity Method Investment — The Company follows Accounting Principles Board Opinion No. 18 The Equity Method of Accounting for Investments in Common Stock ("APB No. 18") in accounting for its investment in the joint venture. In the event the Company's share of the joint venture's net losses reduces the Company's investment to zero, the Company will discontinue applying the equity method and will not provide for additional losses unless the Company has guaranteed obligations of the joint venture or is otherwise committed to provide further financial support for the joint venture. If the joint venture subsequently reports net income, the Company will resume applying the equity method only after its share of that net income equals the share of net losses not recognized during the period the equity method was suspended.

Deferred Issuance Costs —Payments, either in cash or share-based payments, made in connection with the sale of debentures are recorded as deferred debt issuance costs and amortized using the effective interest method over the lives of the related debentures. The weighted average amortization period for deferred debt issuance costs is 36 months.

Intangible and Long-Lived Assets— The Company follows Statement of Financial Accounting Standards ("FAS") No. 144, "Accounting for Impairment of Disposal of Long-Lived Assets," which established a "primary asset" approach to determine the cash flow estimation period for a group of assets and liabilities that represents the unit of accounting for a long-lived asset to be held and used. Long-lived assets to be held and used are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount of an asset may not be recoverable. The carrying amount of a long-lived asset is not recoverable if it exceeds the sum of the undiscounted cash flows expected to result from the use and eventual disposition of the asset. Long-lived assets to be disposed of are reported at the lower of

carrying amount or fair value less cost to sell. During the years ended December 31, 2008 and 2007, no impairment loss was recognized.

Fair Value Measurements — For certain financial instruments, including accounts receivable, accounts payable, accrued expenses, interest payable, advances payable and notes payable, the carrying amounts approximate fair value due to their relatively short maturities.

Emerging Issues Task Force ("EITF") No. 00-19 "Accounting for Derivative Financial Instruments Indexed to and Potentially Settled in, a Company's Own Stock" ("EITF 00-19"), provides a criteria for determining whether freestanding contracts that are settled in a company's own stock, including common stock options and warrants, should be designated as either an equity instrument, an asset or as a liability under SFAS No. 133 "Accounting for Derivative Instruments and Hedging Activities." Under the provisions of EITF 00-19, a contract designated as an asset or a liability must be carried at fair value on a company's balance sheet, with any changes in fair value recorded in a company's results of operations. Using the criteria in EITF 00-19, the Company has determined that its outstanding options and warrants require liability accounting and records the fair values as warrant and option derivatives.

On January 1, 2008, the Company adopted FAS No. 157, "Fair Value Measurements" ("FAS 157"). FAS 157 defines fair value, and establishes a three-level valuation hierarchy for disclosures of fair value measurement that enhances disclosure requirements for fair value measures. The carrying amounts reported in the consolidated balance sheets for receivables and current liabilities each qualify as financial instruments and are a reasonable estimate of their fair values because of the short period of time between the origination of such instruments and their expected realization and their current market rate of interest. The three levels of valuation hierarchy are defined as follows:

- Level 1 inputs to the valuation methodology are quoted prices for identical assets or liabilities in active markets.

- Level 2 inputs to the valuation methodology include quoted prices for similar assets and liabilities in active markets, and inputs that are observable for the asset or liability, either directly or indirectly, for substantially the full term of the financial instrument.

- Level 3 inputs to the valuation methodology are unobservable and significant to the fair value measurement.

FAS 133, "Accounting for Derivative Instruments and Hedging Activities" requires bifurcation of embedded derivative instruments and measurement of fair value for accounting purposes. In addition, FAS 155, "Accounting for Certain Hybrid Financial Instruments" requires measurement of fair values of hybrid financial instruments for accounting purposes. The Company applied the accounting prescribed in FAS 133 to account for its 2005 Convertible Debenture as described in Note 11. For practicality in the valuation of the debentures and for ease of presentation, the Company applied the accounting prescribed in FAS 155 to account for the 2006, 2007, February 2008, and April 2008 Convertible Debentures as described below in Notes 7, 8, 9, and 10.

In determining the appropriate fair value of the debentures, the Company used Level 2 inputs for its valuation methodology. For the periods from January 1, 2007 through September 30, 2008, the Company applied the Black-Scholes models, Binomial Option Pricing models, Standard Put Option Binomial models and the net present value of certain penalty amounts to value the debentures and their embedded derivatives. At December 31, 2008, to achieve greater cost efficiencies, the Company changed its application of the Income Approach as defined under paragraph 18 of FAS 157, by applying the Black-Scholes option pricing model in valuing all debentures and their embedded derivatives. This change did not materially impact the results of the Company's valuations of its debentures and embedded derivatives. The impact of the change in the application of the Income Approach was approximately 1.4% of the fair value of the Company's debentures and their embedded derivatives. FAS 157, paragraph 20 states that the disclosure provisions of Statement of Financial Accounting Standards No. 154 Accounting Changes and Error Corrections ("FAS 154") for a change in accounting estimate are not required for revisions resulting from a change in a

valuation technique or its application.

Derivative liabilities are adjusted to reflect fair value at each period end, with any increase or decrease in the fair value being recorded in results of operations as Adjustments to Fair Value of Derivatives. The effects of interactions between embedded derivatives are calculated and accounted for in arriving at the overall fair value of the financial instruments. In addition, the fair values of freestanding derivative instruments such as warrant and option derivatives are valued using the Black-Scholes model.

At December 31, 2008, the Company identified the following assets and liabilities that are required to be presented on the balance sheet at fair value:

Derivative Liabilities	Fair Value As of December 31, 2008	Fair Value Measurements at December 31, 2008 Using Fair Value Hierarchy Level 1	Level 2	Level 3
Conversion feature - 2005 debenture	4,075	-	4,075	-
2006 Convertible debenture and embeded derivatives	1,993,354	-	1,993,354	-
2007 Convertible debenture and embedded derivatives	7,706,344	-	7,706,344	-
February 2008 Convertible debentures and embedded derivatives	1,757,470	-	1,757,470	-
April 2008 Convertible debenture and embedded derivatives	4,066,505	-	4,066,505	-
Warrant and option derivatives	2,655,849	-	2,655,849	-
	18,183,597	-	18,183,597	-

For the year ended December 31, 2008 and 2007, the Company recognized a gain of $13,082,247 and $32,835,057, respectively, for the changes in the valuation of the aforementioned liabilities.

The Company did not identify any other non-recurring assets and liabilities that are required to be presented in the consolidated balance sheets at fair value in accordance with FAS 157.

In February 2007, the FASB issued FAS No. 159, “The Fair Value Option for Financial Assets and Financial Liabilities” (“FAS 159”). FAS 159 permits entities to choose to measure many financial assets and financial liabilities at fair value. Unrealized gains and losses on items for which the fair value option has been elected are reported in earnings. FAS 159 is effective as of the beginning of an entity’s first fiscal year that begins after November 15, 2007. The Company adopted FAS 159 on January 1, 2008. The Company chose not to elect the option to measure the fair value of eligible financial assets and liabilities.

Revenue Recognition — The Company’s revenues are generated from license and research agreements with collaborators. Licensing revenue is recognized on a straight-line basis over the shorter of the life of the license or the estimated economic life of the patents related to the license. License fee revenue begins to be recognized in the first full month following the effective date of the license agreement. Deferred revenue represents the portion of the license and other payments received that has not been earned. Costs associated with the license revenue are deferred and recognized over the same term as the revenue. Reimbursements of research expense pursuant to grants are recorded in the period during which collection of the reimbursement becomes assured, because the reimbursements are subject to approval.

Research and Development Costs —Research and development costs consist of expenditures for the research and development of patents and technology, which cannot be capitalized. The Company’s research and development costs consist mainly of payroll and payroll related expenses, research supplies and research grants. Reimbursements of research expense pursuant to grants are recorded in the period during which collection of the reimbursement becomes

assured, because the reimbursements are subject to approval. Research and development costs are expensed as incurred.

Share-Based Compensation —Effective January 1, 2006, the Company adopted the fair value recognition provisions of FAS 123(R), using the modified-prospective transition method. Under this method, stock-based compensation expense is recognized in the consolidated financial statements for stock options granted, modified or settled after the adoption date. In accordance with FAS 123(R), the unamortized portion of options granted prior to the adoption date is recognized into earnings after adoption. Results for prior periods have not been restated, as provided for under the modified-prospective method.

Under FAS 123(R), stock-based compensation expense recognized is based on the value of the portion of share-based payment awards that are ultimately expected to vest during the period. Based on this, our stock-based compensation is reduced for estimated forfeitures at the time of grant and revised, if necessary, in subsequent periods if actual forfeitures differ from those estimates.

The fair value of each stock option is estimated on the date of grant using the Black-Scholes option pricing model. Assumptions relative to volatility and anticipated forfeitures are determined at the time of grant with the following weighted average assumptions used in the years ended December 31, 2008 and 2007:

	Year Ended December 31,	
	2008	2007
Expected life in years	4.0	4.0
Volatility	148%	163%
Risk free interest rate	2.50%	4.74%
Expected dividends	None	None
Expected forfeitures	13%	13%

The assumptions used in the Black-Scholes models referred to above are based upon the following data: (1) The expected life of the option is estimated by considering the contractual term of the option, the vesting period of the option, the employees' expected exercise behavior and the post-vesting employee turnover rate. (2) The expected stock price volatility of the underlying shares over the expected term of the option is based upon historical share price data. (3) The risk free interest rate is based on published U.S. Treasury Department interest rates for the expected terms of the underlying options. (4) Expected dividends are based on historical dividend data and expected future dividend activity. (5) The expected forfeiture rate is based on historical forfeiture activity and assumptions regarding future forfeitures based on the composition of current grantees.

In accordance with FAS 123(R), the benefits of tax deductions in excess of the compensation cost recognized for options exercised during the period are classified as financing cash inflows rather than operating cash inflows.

Income Taxes — Deferred income taxes are provided using the liability method whereby deferred tax assets are recognized for deductible temporary differences and operating loss and tax credit carryforwards, and deferred tax liabilities are recognized for taxable temporary differences. Temporary differences are the differences between the reported amounts of assets and liabilities and their tax bases. Deferred tax assets are reduced by a valuation allowance when, in the opinion of management, it is more likely than not that some portion or all of the deferred tax assets will not be realized. Deferred tax assets and liabilities are adjusted for the effects of the changes in tax laws and rates of the date of enactment.

When tax returns are filed, it is highly certain that some positions taken would be sustained upon examination by the taxing authorities, while others are subject to uncertainty about the merits of the position taken or the amount of the position that would be ultimately sustained. The benefit of a tax position is recognized in the financial statements in the period during which, based on all available evidence, management believes it is more likely than not that the position will be sustained upon examination, including the resolution of appeals or litigation processes, if any. Tax

positions taken are not offset or aggregated with other positions. Tax positions that meet the more-likely-than-not recognition threshold are measured as the largest amount of tax benefit that is more than 50 percent likely of being realized upon settlement with the applicable taxing authority. The portion of the benefits associated with tax positions taken that exceeds the amount measured as described above is reflected as a liability for unrecognized tax benefits in the accompanying balance sheet along with any associated interest and penalties that would be payable to the taxing authorities upon examination.

Applicable interest and penalties associated with unrecognized tax benefits are classified as additional income taxes in the statement of income.

Net Loss Per Share— Earnings per share is calculated in accordance with the SFAS No. 128, “Earnings Per Share” (“SFAS 128”). Basic earnings per share is based upon the weighted average number of common shares outstanding. Diluted earnings per share is based on the assumption that all dilutive convertible shares and stock options were converted or exercised. Dilution is computed by applying the treasury stock method. Under this method, options and warrants are assumed to be exercised at the beginning of the period (or at the time of issuance, if later), and as if funds obtained thereby were used to purchase common stock at the average market price during the period.

At December 31, 2008 and 2007, approximately 270,206,000 and 67,000,000 potentially dilutive shares, respectively, were excluded from the shares used to calculate diluted earnings per share as their inclusion would be anti-dilutive.

Concentrations and Other Risks —Currently, the Company’s revenues and accounts receivable are concentrated on a small number of customers. The following table shows the Company’s concentrations of its revenue for those customers comprising greater than 10% of total revenue.

	2008	2007
Genzyme Transgenics Corporation	17%	20%
START Licensing, Inc.	13%	15%
Exeter Life Sciences, Inc.	16%	19%
Terumo Corporation	25%	N/A
International Stem Cell Corporation	11%	N/A

Other risks include the uncertainty of the regulatory environment and the effect of future regulations on the Company’s business activities. As the Company is a biotechnology research and development company, there is also the attendant risk that someone could commence legal proceedings over the Company’s discoveries. Acts of God could also adversely affect the Company’s business.

Recent Accounting Pronouncements

In September 2006, the FASB issued FAS 157 “Fair Value Measurements.” This Statement defines fair value, establishes a framework for measuring fair value in generally accepted accounting principles (GAAP), and expands disclosures about fair value measurements. This Statement applies under other accounting pronouncements that require or permit fair value measurements, the Board having previously concluded in those accounting pronouncements that fair value is the relevant measurement attribute. Accordingly, this Statement does not require any new fair value measurements. However, for some entities, the application of this Statement will change current practice. This Statement is effective for financial statements issued for fiscal years beginning after November 15, 2007, and interim periods within those fiscal years. Earlier application is encouraged, provided that the reporting entity has not yet issued financial statements for that fiscal year, including financial statements for an interim period within that fiscal year. The Company has adopted FAS 157 beginning January 1, 2008 and does not believe the adoption had a material impact on our financial position, results of operations or cash flows.

In February 2007, the FASB issued FAS No. 159, “The Fair Value Option for Financial Assets and Financial Liabilities”. This Statement permits entities to choose to measure many financial assets and financial liabilities at fair value. Unrealized gains and losses on items for which the fair value option has been elected are reported in earnings. FAS No. 159 is effective as of the beginning of an entity’s first fiscal year that begins after November 15, 2007. The Company adopted FAS No. 159 on January 1, 2008. The Company chose not to elect the option to measure the fair value of eligible financial assets and liabilities.

In June 2007, the FASB issued FASB Staff Position No. EITF 07-3, “Accounting for Nonrefundable Advance Payments for Goods or Services Received for use in Future Research and Development Activities” (“FSP EITF 07-3”), which addresses whether nonrefundable advance payments for goods or services that used or rendered for research and development activities should be expensed when the advance payment is made or when the research and development activity has been performed. The implementation of EITF 07-3 did not have an impact on the Company’s consolidated financial statements.

In December 2007, the FASB issued SFAS No. 141(R), “Business Combinations” (“SFAS 141R”), which replaced SFAS 141. SFAS 141R retains the purchase method of accounting for acquisitions, but requires a number of changes, including changes in the way assets and liabilities are recognized in the purchase accounting as well as requiring the expensing of acquisition-related costs as incurred. Furthermore, SFAS 141R provides guidance for recognizing and measuring the goodwill acquired in the business combination and determines what information to disclose to enable users of the financial statements to evaluate the nature and financial effects of the business combination. SFAS 141R is effective for fiscal years beginning on or after December 15, 2008. Earlier adoption is prohibited. The Company believes adopting FAS No. 141R will significantly impact its financial statements for any business combination completed after December 31, 2008.

In December 2007, the FASB issued SFAS No. 160, “Noncontrolling Interests in Consolidated Financial Statements — An Amendment of ARB No. 51” (“SFAS 160”). SFAS 160 amends ARB 51 to establish accounting and reporting standards for the noncontrolling interest in a subsidiary and for the deconsolidation of a subsidiary. It is intended to eliminate the diversity in practice regarding the accounting for transactions between equity and noncontrolling interests by requiring that they be treated as equity transactions. Further, it requires consolidated net income to be reported at amounts that include the amounts attributable to both the parent and the noncontrolling interest. SFAS 160 also establishes a single method of accounting for changes in a parent’s ownership interest in a subsidiary that do not result in deconsolidation, requires that a parent recognize a gain or loss in net income when a subsidiary is deconsolidated, requires expanded disclosures in the consolidated financial statements that clearly identify and distinguish between the interests of the parent’s owners and the interests of the noncontrolling owners of a subsidiary, among others. SFAS 160 is effective for fiscal years beginning on or after December 15, 2008, with early adoption permitted, and it is to be applied prospectively. SFAS 160 is to be applied prospectively as of the beginning of the fiscal year in which it is initially applied, except for the presentation and disclosure requirements, which must be applied retrospectively for all periods presented. The adoption of SFAS 160 will not have an impact on the Company’s consolidated financial statements.

In February 2008, the FASB issued FASB Staff Position No. 157-1 ("FSP 157-1"), "Application of FASB Statement No. 157 to FASB Statement No. 13 and Other Accounting Pronouncements That Address Fair Value Measurements for Purposes of Lease Classification or Measurement under Statement 13." FSP 157-1 is effective upon initial adoption of SFAS 157, and indicates that it does not apply under SFAS 13, "Accounting for Leases" and other accounting pronouncements that address fair value measurements for purposes of lease classification or measurement under SFAS 13. This scope exception does not apply to assets acquired and liabilities assumed in a business combination that are required to be measured at fair value under SFAS 141 or SFAS 141R, regardless of whether those assets and liabilities are related to leases. The adoption of FSP 157-1 did not have an impact on the Company’s

consolidated financial statements.

Also in February 2008, the FASB issued FASB Staff Position No. 157-2 ("FSP 157-2"), "Effective Date of FASB Statement No. 157." With the issuance of FSP 157-2, the FASB agreed to: (a) defer the effective date in SFAS No. 157 for one year for certain nonfinancial assets and nonfinancial liabilities, except those that are recognized or disclosed at fair value in the financial statements on a recurring basis (at least annually), and (b) remove certain leasing transactions from the scope of SFAS 157. The deferral is intended to provide the FASB time to consider the effect of certain implementation issues that have arisen from the application of SFAS 157 to these assets and liabilities.

In March 2008, the FASB issued SFAS No. 161, "Disclosures about Derivative Instruments and Hedging Activities" (“SFAS 161”). SFAS 161 is intended to improve financial reporting of derivative instruments and hedging activities by requiring enhanced disclosures to enable financial statement users to better understand the effects of derivatives and hedging on an entity's financial position, financial performance and cash flows. The provisions of SFAS 161 are effective for interim periods and fiscal years beginning after November 15, 2008, with early adoption encouraged. The Company does not anticipate that the adoption of SFAS 161 will have a material impact on its consolidated results of operations or consolidated financial position.

In April 2008, the FASB issued FASB Staff Position No. 142-3 “Determination of the useful life of Intangible Assets” (“FSP 142-3”), which amends the factors a company should consider when developing renewal assumptions used to determine the useful life of an intangible asset under SFAS142. This Issue is effective for financial statements issued for fiscal years beginning after December 15, 2008, and interim periods within those fiscal years. SFAS 142 requires companies to consider whether renewal can be completed without substantial cost or material modification of the existing terms and conditions associated with the asset. FSP 142-3 replaces the previous useful life criteria with a new requirement—that an entity consider its own historical experience in renewing similar arrangements. If historical experience does not exist then the Company would consider market participant assumptions regarding renewal including 1) highest and best use of the asset by a market participant, and 2) adjustments for other entity-specific factors included in SFAS 142. The Company does not anticipate that the adoption of FSP 142-3 will have a material impact on its consolidated results of operations or consolidated financial position.

In May 2008, the FASB issued SFAS No. 162, "The Hierarchy of Generally Accepted Accounting Principles" (“SFAS 162”). SFAS 162 is intended to improve financial reporting by identifying a consistent framework, or hierarchy, for selecting accounting principles to be used in preparing financial statements that are presented in conformity with GAAP for nongovernmental entities. SFAS 162 is effective 60 days following the SEC's approval of the Public Company Accounting Oversight Board (“PCAOB”) amendments to AU Section 411, "The Meaning of Present Fairly in Conformity with Generally Accepted Accounting Principles." The Company does not expect the adoption of SFAS 162 will have a material impact on its consolidated results of operations or consolidated financial position.

On May 9, 2008, the FASB issued FASB Staff Position No. APB 14-1 ("FSP APB 14-1"), "Accounting for Convertible Debt Instruments That May Be Settled in Cash upon Conversion (Including Partial Cash Settlement)." FSP APB 14-1 clarifies that convertible debt instruments that may be settled in cash upon conversion (including partial cash settlement) are not addressed by paragraph 12 of APB Opinion No. 14, "Accounting for Convertible Debt and Debt Issued with Stock Purchase Warrants." Additionally, FSP APB 14-1 specifies that issuers of such instruments should separately account for the liability and equity components in a manner that will reflect the entity's nonconvertible debt borrowing rate when interest cost is recognized in subsequent periods. FSP APB14-1 is effective for financial statements issued for fiscal years beginning after December 15, 2008, and interim periods within those fiscal years. The Company is currently evaluating the impact that FSP APB 14-1 will have on its consolidated results of operations or consolidated financial position.

On June 16, 2008, the FASB issued FSP No. EITF 03-6-1 (“FSP EITF 03-6-1”), “Determining Whether Instruments Granted in Share-Based Payment Transactions Are Participating Securities,” to address the question of whether instruments granted in share-based payment transactions are participating securities prior to vesting. FSP EITF 03-6-1 indicates that unvested share-based payment awards that contain rights to dividend payments should be included in earnings per share calculations. The guidance will be effective for fiscal years beginning after December 15, 2008. The Company is currently evaluating the requirements of FSP EITF 03-6-1 and the impact that its adoption will have on the consolidated results of operations or consolidated financial position.

In June 2008, the FASB issued Emerging Issues Task Force Issue 07-5 ("EITF 07-5"), "Determining whether an Instrument (or Embedded Feature) is indexed to an Entity's Own Stock." EITF 07-5 is effective for financial statements issued for fiscal years beginning after December 15, 2008, and interim periods within those fiscal years. Early application is not permitted. Paragraph 11(a) of SFAS No. 133 "Accounting for Derivatives and Hedging Activities," specifies that a contract that would otherwise meet the definition of a derivative but is both (a) indexed to the Company's own stock and (b) classified in stockholders' equity in the statement of financial position would not be considered a derivative financial instrument. EITF 07-5 provides a new two-step model to be applied in determining whether a financial instrument or an embedded feature is indexed to an issuer's own stock and thus able to qualify for the SFAS 133 paragraph 11(a) scope exception. This standard triggers liability accounting on all options and warrants exercisable at strike prices denominated in any currency other than the functional currency of the operating entity. The Company does not expect the adoption of EITF 07-5 will have an impact on its consolidated results of operations or consolidated financial position.

In June 2008, FASB issued EITF 08-4, "Transition Guidance for Conforming Changes to Issue No. 98-5." The objective of EITF 08-4 is to provide transition guidance for conforming changes made to EITF 98-5, "Accounting for Convertible Securities with Beneficial Conversion Features or Contingently Adjustable Conversion Ratios," that result from EITF 00-27 " Application of Issue No. 98-5 to Certain Convertible Instruments," and SFAS 150, "Accounting for Certain Financial Instruments with Characteristics of both Liabilities and Equity." EITF 08-4 is effective for financial statements issued for fiscal years ending after December 15, 2008. Early application is permitted. The Company is currently evaluating the impact of adoption of EITF 08-4 on the accounting for the convertible notes and related warrants transactions.

On October 10, 2008, the FASB issued FSP 157-3, "Determining the Fair Value of a Financial Asset When the Market for That Asset Is Not Active," which clarifies the application of SFAS 157 in a market that is not active and provides an example to illustrate key considerations in determining the fair value of a financial asset when the market for that financial asset is not active. FSP 157-3 became effective on October 10, 2008, and its adoption did not have a material impact on the Company's consolidated results of operations or consolidated financial position.

In January 2009, the FASB issued FSP EITF 99-20-1, "Amendments to the Impairment Guidance of EITF Issue No. 99-20, and EITF Issue No. 99-20, Recognition of Interest Income and Impairment on Purchased and Retained Beneficial Interests in Securitized Financial Assets" ("FSP EITF 99-20-1"). FSP EITF 99-20-1 changes the impairment model included within EITF 99-20 to be more consistent with the impairment models of FAS No. 115. FSP EITF 99-20-1 achieves this by amending the impairment model in EITF 99-20 to remove its exclusive reliance on "market participant" estimates of future cash flows used in determining fair value. Changing the cash flows used to analyze other-than-temporary impairment from the "market participant" view to a holder's estimate of whether there has been a "probable" adverse change in estimated cash flows allows companies to apply reasonable judgment in assessing whether an other-than-temporary impairment has occurred. The adoption of FSP EITF 99-20-1 will not have a material impact on the Company's consolidated financial statements.

In April 2009, the FASB issued FSP FAS 157-4, "Determining Fair Value When the Volume and Level of Activity for the Asset or Liability Have Significantly Decreased and Identifying Transactions That Are Not Orderly" ("FSP FAS 157-4"). FSP FAS 157-4 provides additional guidance for estimating fair value measurements in accordance with FASB Statement No. 157 when there is not an active market or where the price inputs being used represent distressed sales. FSP FAS 157-4 provides additional guidance on the major categories for which equity and debt securities disclosures are to be presented and amends the disclosure requirements of FASB Statement No. 157 to require disclosure in interim and annual periods of the inputs and valuation technique(s) used to measure fair value and a discussion of changes in valuation techniques and related inputs, if any, during the period. FSP FAS 157-4 shall be applied prospectively and is effective for interim and annual reporting periods ending after June 15, 2009, with early adoption permitted for periods ending after March 15, 2009. An entity early adopting this FSP must also early adopt FSP No. FAS 115-2 and FAS 124-2, Recognition and Presentation of Other-Than-Temporary Impairment ("FSP

FAS 115-2 and FAS 124-2"). The Company is in the process of evaluating the impact, if any, of applying this FSP on its financial position, results of operations and cash flows.

In April 2009, the FASB issued FSP FAS 115-2 and FAS 124-2. This FSP amends SFAS 115, “Accounting for Certain Investments in Debt and Equity Securities,” SFAS 124, “Accounting for Certain Investments Held by Not-for-Profit Organizations,” and EITF Issue No. 99-20, “Recognition of Interest Income and Impairment on Purchased Beneficial Interests and Beneficial Interests That Continue to Be Held by a Transferor in Securitized Financial Assets,” to make the other-than-temporary impairments guidance more operational and to improve the presentation of other-than-temporary impairments in the financial statements. This FSP will replace the existing requirement that the entity’s management assert it has both the intent and ability to hold an impaired debt security until recovery with a requirement that management assert it does not have the intent to sell the security, and it is more likely than not it will not have to sell the security before recovery of its cost basis. This FSP provides increased disclosure about the credit and noncredit components of impaired debt securities that are not expected to be sold and also requires increased and more frequent disclosures regarding expected cash flows, credit losses, and an aging of securities with unrealized losses. Although this FSP does not result in a change in the carrying amount of debt securities, it does require that the portion of an other-than-temporary impairment not related to a credit loss for a held-to-maturity security be recognized in a new category of other comprehensive income and be amortized over the remaining life of the debt security as an increase in the carrying value of the security. This FSP shall be effective for interim and annual periods ending after June 15, 2009, with early adoption permitted for periods ending after March 15, 2009. An entity may early adopt this FSP only if it also elects to early adopt FSP FAS 157-4. Also, if an entity elects to early adopt either FSP FAS 157-4 or FSP FAS 107-1 and APB 28-1, the entity also is required to early adopt this FSP. The Company is currently evaluating this new FSP but does not believe that it will have a significant impact on the determination or reporting of the financial results.

In April 2009, the FASB issued FSP No. FAS 107-1 and APB 28-1, “Interim Disclosures about Fair Value of Financial Instruments” (“FSP FAS 107-1 and APB 28-1”). FSP FAS 107-1 and APB 28-1 requires companies to disclose in interim financial statements the fair value of financial instruments within the scope of FASB Statement No. 107, Disclosures about Fair Value of Financial Instruments. However, companies are not required to provide in interim periods the disclosures about the concentration of credit risk of all financial instruments that are currently required in annual financial statements. The fair-value information disclosed in the footnotes must be presented together with the related carrying amount, making it clear whether the fair value and carrying amount represent assets or liabilities and how the carrying amount relates to what is reported in the balance sheet. FSP FAS 107-1 and APB 28-1 also requires that companies disclose the method or methods and significant assumptions used to estimate the fair value of financial instruments and a discussion of changes, if any, in the method or methods and significant assumptions during the period. The FSP shall be applied prospectively and is effective for interim and annual periods ending after June 15, 2009, with early adoption permitted for periods ending after March 15, 2009. An entity early adopting FSP FAS 107-1 and APB 28-1 must also early adopt FSP FAS 157-4 as well as FSP FAS 115-2 and FAS 124-2. The Company will adopt the disclosure requirements of this pronouncement for the quarter ended June 30, 2009, in conjunction with the adoption of FSP FAS 157-4, FSP FAS 115-2 and FAS 124-2.

In May 2009, the FASB issued SFAS No. 165, "Subsequent Events" (“SFAS 165”). SFAS 165 sets forth the period after the balance sheet date during which management of a reporting entity should evaluate events or transactions that may occur for potential recognition or disclosure in the financial statements, the circumstances under which an entity should recognize events or transactions occurring after the balance sheet date in its financial statements, and the disclosures that an entity should make about events or transactions that occurred after the balance sheet date. SFAS 165 will be effective for interim or annual period ending after June 15, 2009, and accordingly, the Company adopted this standard during the second quarter of 2009. Subsequent events have been evaluated as of the date of this filing and no further disclosures were required and its adoption does not impact its consolidated results of operations and financial condition.

4. LICENSE REVENUE

On April 30, 2008 the Company received a one time payment of $300,000 from Terumo International which extended their ability to commence a Phase I Clinical Trial in Japan by one year. All other terms and conditions for the license agreement between Terumo and the Company remain the same. The Company has recorded $200,000 in license fee revenue for the year ended December 31, 2008 in its accompanying consolidated statements of operations, and the remainder of the license fee has been accrued in deferred revenue in the accompanying consolidated balance sheet at December 31, 2008. The Company is recognizing revenue from this agreement over the one-year extension period.

On May 23, 2008, the Company received $150,000 from International Stem Cells, Inc. as a continuing annual payment to renew its license fee for use of certain of the Company's technologies. The Company has recorded $87,500 in license fee revenue for the year ended December 31, 2008 in its accompanying consolidated statements of operations, and the remainder of the license fee has been accrued in deferred revenue in the accompanying consolidated balance sheet at December 31, 2008. The Company is recognizing revenue from this agreement over a one-year period.

On July 10, 2008, the Company granted an exclusive license to Embryome Sciences, Inc., a wholly owned subsidiary of BioTime, Inc., to use its "ACTCellerate" embryonic stem cell technology and a bank of over 140 diverse progenitor cell lines derived using that technology. Under the agreement, the Company received an up-front payment of $470,000, and is eligible to receive an 8% royalty on sales of products, services, and processes that utilize the licensed technology. However, in connection with the rent judgment discussed in Note 18, in connection with unpaid rents owed with its landlord, the Company has assigned the landlord rights and interest to 62.5% of all royalties on this contract, and 65% of all other consideration payable under this license agreement until such time that the Company has repaid amounts owed to the landlord that total $475,000. The Company has recorded $12,288 in license fee revenue for the year ended December 31, 2008 in its accompanying consolidated statements of operations, and the remainder of the license fee has been accrued in deferred revenue in the accompanying consolidated balance sheet at December 31, 2008. The Company is recognizing revenue from this agreement over its 17-year patent useful life.

On December 18, 2008, the Company entered into a license agreement with Transition for certain of the Company's non-core technology. Under the agreement, Transition agreed to acquire a license to the technology for a total of $3.5 million in cash. As of December 31, 2008, the Company had received $2,000,000, less wire fees, in cash under this agreement. The Company received the remaining $1,500,000 in 2009. The Company expects to apply the proceeds towards its retinal epithelium ("RPE") cells program. The Company has not recorded license fee revenue for the year ended December 31, 2008 as the effective date of the agreement was December 18, 2008 and the Company's policy is to begin recognition of revenue in the first full month following the effective date of the license agreement. The license fee has been accrued in deferred revenue in the accompanying consolidated balance sheet at December 31, 2008. The Company is recognizing revenue from this agreement over its 17-year patent useful life.

In connection with the joint venture agreement discussed in Note 6, on December 1, 2008, the Company entered into a license agreement with CHA for the exclusive, worldwide license to the Hemangioblast Program. Under the agreement, CHA agreed to acquire the Company's core technology for $500,000 in cash. As of December 31, 2008, the Company had received $250,000. The Company received the remaining $250,000 in January 2009. Accordingly, the Company has recorded $250,000 in accounts receivable in its consolidated balance sheets at December 31, 2008. The Company has recorded $2,450 in license fee revenue for the year ended December 31, 2008 in its accompanying consolidated statements of operations, and the remainder of the license fee has been accrued in deferred revenue at December 31, 2008. The Company is recognizing revenue from this agreement over its 17-year patent useful life.

5. PROPERTY AND EQUIPMENT

Property and equipment consisted of the following at December 31, 2008 and 2007:

	2008	2007
Machinery & equipment	$ 1,470,141	$ 1,552,642
Computer equipment	436,541	424,612
Office furniture	76,201	76,201
Leasehold improvements	127,197	127,197
Capital leases	51,235	238,754
Accumulated depreciation	(1,761,307)	(1,504,902)
Property and equipment, net	$ 400,008	$ 914,504

Depreciation expense for the years ended December 31, 2008 and 2007 amounted to $402,867 and $386,643, respectively.

6. INVESTMENT IN JOINT VENTURE

On December 1, 2008, the Company and CHA Bio & Diostech Co., Ltd. (“CHA”), a leading Korean-based biotechnology company focused on the development of stem cell technologies, formed an international joint venture. The new company, Stem Cell & Regenerative Medicine International, Inc. (“SCRMI”), will develop human blood cells and other clinical therapies based on the Company’s hemangioblast program, one of the Company’s core technologies. Under the terms of the agreement, the Company purchased upfront a 33% interest in the joint venture, and will receive another 7% interest upon fulfilling certain obligations under the agreement over a period of 3 years. The Company’s contribution includes (a) the uninterrupted use of a portion of its leased facility at the Company’s expense, (b) the uninterrupted use of certain equipment in the leased facility, and (c) the release of certain of the Company’s research and science personnel to be employed by the joint venture. In return, for a 67% interest, CHA has agreed to contribute $150,000 cash and to fund all operational costs in order to conduct the hemangioblast program.

The Company has agreed to collaborate with the joint venture in securing grants to further research and development of its technology. Additionally, SCRMI has agreed to pay the Company a fee of $500,000 for an exclusive, worldwide license to the Hemangioblast Program. The Company has recorded $2,450 in license fee revenue for the year ended December 31, 2008 in its accompanying consolidated statements of operations, and the remainder of the license fee has been accrued in deferred revenue in the accompanying consolidated balance sheet at December 31, 2008.

Accounting Principles Board Opinion 18 The Equity Method of Accounting for Investments in Common Stock (“APB 18”), paragraph 19a requires that the difference between the cost of an investment and the amount of underlying equity in net assets of an investee should be accounted for as if the investee were a consolidated subsidiary. The Company has calculated the difference between the cost of the investment and the amount of underlying equity in net assets of the joint venture to be $196,130, based on the Company’s initial cost basis in the investment of $246,130, less its 33.3% of the initial equity in net assets of the joint venture of $50,000. The Company will amortize the $196,130 over the term of the shorter of the equipment usage or lease term (through April 2010, or 17 months from December 1, 2008). The amortization will be applied against the value of the Company’s investment. Amortization expense for the month of December 2008 was $11,537.

The following table is a summary of key financial data for the joint venture as of and for the year ended December 31, 2008:

Current assets	$ 179,400
Noncurrent assets	$ 468,150
Current liabilities	$ 76,869
Noncurrent liabilities	$ 468,150
Net revenue	$ 2,450

Net loss	$ (62,791)

7. CONVERTIBLE NOTE PAYABLE—APRIL 2008

On April 4, 2008, the Company entered into a Securities Purchase Agreement with accredited investors for the issuance of an aggregate of $4,038,880 principal amount of senior secured convertible debentures with an original issue discount of $820,648 representing approximately 20.32%. The amortizing senior secured convertible debentures issued at the closing of the 2008 financing will be due and payable one (1) year from the closing, and will not bear interest. The cash purchase price excluding refinancing of bridge debt and in-kind payments was $2,212,432. Refinanced bridge debt consisted of the aggregate $130,000 in unsecured convertible notes previously issued and sold to PDPI LLC and The Shapiro Family Trust on March 21, 2008. The net outstanding amount of principal plus interest of the Notes was converted into the debt within the April 2008 debenture on a dollar-for-dollar basis. Dr. Shapiro, one of the Company's directors, may be deemed the beneficial owner of the securities owned by The Shapiro Family Trust. The convertible debentures are convertible beginning on the six-month anniversary of the effective date of the note at the option of the holders into 26,925,867 shares of common stock at a fixed conversion price of $0.15 per share, subject to anti-dilution and other customary adjustments. The Company has classified the note as short term in the accompanying consolidated balance sheet as of December 31, 2008. The debenture contains no restrictions as to the use of the proceeds, and is intended to fund the Company's working capital obligations. As of June 30, 2009, the entire debenture balance remains outstanding.

Under the terms of the agreements, principal amounts owed under the debentures become due and payable commencing six months following closing of the transaction. At that time, and each month thereafter, the Company is required to either repay 1/30 of the outstanding balance owed in common stock at the lesser of the then conversion price or 80% of the weighted average price for common shares for the 10 trading days prior to the amortization payment date. The debenture agreement does not limit the number of shares that the Company could be required to issue.

The note contains a provision that modifies the conversion rate to $0.15 per common share and the warrant exercise price to $0.165 per common share, issued to the April 2008 note payable subscribers who are also participants in the 2005, 2006, and 2007 debentures. The Company has considered the impact of Emerging Issue Task Force statements, or EITFs 96 - 19— Debtor's Accounting for a Modification or Exchange of Debt Instruments, 02 - 4—Determining Whether a Debtor's Modification or Exchange of Debt Instruments is Within the Scope of FASB No. 15, and 05 - 7—Accounting for Modifications to Conversion Options Embedded in Debt Instruments and Related Issues on the accounting treatment of the change in conversion price of the 2005, 2006, and 2007 Convertible Debentures described above. EITF 96 - 19 states that a transaction resulting in a significant change in the nature of a debt instrument should be accounted for as an extinguishment of debt. The Company has concluded that the change in conversion price and warrant exercise price does not constitute a significant change in the nature of the debt and that the transaction should not be treated as an extinguishment of that debt.

In connection with this financing, the Company accrued cash fees to a placement agent of $20,000 and issued warrants to purchase 26,925,867 shares of Common Stock at an exercise price of $0.165 per share. The term of the warrants is five years and is subject to anti-dilution and other customary adjustments. The initial fair value of the warrants was estimated at $2,587,521 using the Black-Scholes pricing model. The warrants were again valued at $709,384 at December 31, 2008 at fair value using the Black-Scholes model, representing a decrease in the fair value of the liability of $1,878,137 from the debenture's inception date, which was recorded through the results of operations as an adjustment to fair value of derivatives. The Company issued warrants to purchase an aggregate of 4,263,962 shares of common stock of the Company at an exercise price of $0.165 to T.R. Winston & Company, LLC as consideration for placement agent services provided in connection with the Debenture. The term of the warrants is five years and is subject to anti-dilution and other customary adjustments. The initial fair value of the warrants was estimated at $412,732 using the Black-Scholes pricing model. The warrants were again valued at $112,659 at December 31, 2008 at fair value using the Black-Scholes model, representing a decrease in the fair value of the liability of $300,073 from the debenture's inception date, which was recorded through the results of operations as an adjustment to fair value of derivatives. The assumptions used in the Black-Scholes option pricing model at April 4, 2008 for all warrants issued in connection with this Debenture are as follows: (1) dividend yield of 0%; (2) expected volatility of 145%, (3) risk-free interest rate of 2.63%, and (4) expected life of 5.0 years. The assumptions used in the Black-Scholes option pricing model at December 31, 2008 for all warrants issued in connection with this Debenture are as follows: (1) dividend yield of 0%; (2) expected volatility of 185%, (3) risk-free interest rate of 0.37%, and (4) expected life of 4.3 years. Cash fees accrued in the amount of $20,000, the initial fair value of the original issue discount in the amount of $820,649, and the initial fair value of the warrant discount in the amount of $3,000,253 were capitalized as debt issuance costs (cash paid) and debt discounts (original issue discount and warrant discount), respectively, and have been amortized in full during the year ended December 31, 2008 due to the August 6, 2008 default as discussed below.

Under the terms of the agreement, beginning October 1, 2008, the Company is to amortize the note resulting in complete repayment by the maturity date. The Company may make the amortization payment in either cash or equity. If the payment is made in common stock, the stock will be issued at a price per share equal to the lesser of (i) the then conversion price, and (ii) 80% of the weighted average price for common shares for the 10 trading days prior to the amortization payment date. As of June 30, 2009, no note amortization has occurred and the note is in default as discussed below.

The agreement entered into provides that the Company will pay certain cash amounts as liquidated damages in the event that the Company does not maintain an effective registration statement, or if the Company fails to timely execute stock trading activity. Additionally, penalties will be incurred by the Company in the event of potential default conditions.

As long as any portion of this debenture remains outstanding, unless the holders of at least 67% in principal amount of the then outstanding debentures otherwise give prior written consent, the Company is not permitted to (a) guarantee or borrow any indebtedness, (b) enter into any liens, (c) amend its charter documents in any manner that materially and adversely affects any rights of the holders, (d) acquire more than a de minimis number of shares of its common stock equivalents other than as to conversion shares of warrant shares as permitted or required and repurchases of common stock or common stock equivalents of departing officers and directors of the Company, provided that such purchases do not exceed certain specified amounts, (e) repay any indebtedness, other than the debentures already issued on a pro-rata basis, other than regularly scheduled principle payments as such terms are in effect under this debenture, (f) pay cash dividends or distributions on any equity securities of the Company, (g) enter into any material transaction with any affiliate of the Company, unless such transaction is made on an arm’s-length basis, or (h) enter into any agreement with respect to any of the above.

The Company has complied with the provisions of FAS 155 “Accounting for Certain Hybrid Financial Instruments”, and recorded the fair value of the convertible debentures and related embedded conversion option. The initial fair value of the debentures and embedded conversion option was valued using a combination of Binomial and Black-Scholes models, resulting in a fair value of $4,570,649 at April 4, 2008. The convertible debenture is convertible at the option of the holders into a total of 26,925,867 shares of common stock at a conversion price of $0.15 per share, subject to anti-dilution and other customary adjustments. The excess of $531,769 of this value over the face value of the note was recorded through the results of operations as charges related to issuance of April 2008 convertible note payable. The fair value of the debentures and embedded conversion option was $4,066,505 at December 31, 2008, which includes the face value of the note of $4,038,880, plus the $27,625 fair value of the embedded conversion option. The embedded conversion option was valued using the Black-Scholes option pricing model. The assumptions used in the Black-Scholes option pricing model at December 31, 2008 are as follows: (1) dividend yield of 0%; (2) expected volatility of 185%, (3) risk-free interest rate of 0.37%, and (4) expected life of 4.3 years. The change in fair value of the embedded conversion option of $504,144 is recorded through the results of operations as an adjustment to the fair value of derivatives for the year ended December 31, 2008.

The following table summarizes the changes in the fair values of the respective liabilities versus the values at April 4, 2008:

		Fair Value at		
Face Amount	Net Purchase Price	April 4, 2008	December 31, 2008	Increase (Decrease)
$ 4,038,880	$ 3,218,232	$ 4,570,649	$ 4,066,505	$ (504,144)

As of December 31, 2008, the outstanding principal amount for the 2008 Convertible Debentures is $4,038,880. Interest expense for the year ended December 31, 2008 was $3,840,902.

On August 6, 2008, the Company issued a moratorium on amortization of all outstanding debentures. Under the terms of the debenture agreements, the moratorium constitutes an event of default and thus the debentures all incur default interest penalties. As a result of the default, the Company has recognized additional penalty interest, and has recognized the remaining balance of its debt discounts associated with this note in interest expense, and classified the entire balance as short term. See Note 12 for the default interest expense recognized during the year ended December 31, 2008.

8. CONVERTIBLE NOTES PAYABLE—FEBRUARY 2008

The Company issued and sold a $600,000 unsecured convertible note dated as of February 15, 2008 (“Note A”) to JMJ Financial, for a net purchase price of $500,000 (reflecting a 16.66% original issue discount) in a private placement. Note A bears interest at the rate of 12% per annum, and is due by February 15, 2010. At any time after the 180th day following the effective date of Note A, the holder may at its election convert all or part of Note A plus accrued interest into shares of the Company's common stock at the conversion rate of the lesser of: (a) $0.38 per share, or (b) 80% of the average of the three lowest trade prices in the 20 trading days prior to the conversion. Pursuant to the Use of Proceeds Agreement entered into in connection with the issuance of Note A, the Company is required to use the proceeds from Note A solely for research and development dedicated to adult stem cell research.

Effective February 15, 2008, in exchange for $1,000,000 in the form of a Secured & Collateralized Promissory Note (the “JMJ Note”) issued by JMJ Financial to the Company, the Company issued and sold an unsecured convertible note (“Note B”) to JMJ Financial in the aggregate principal amount of $1,200,000 or so much as may be paid towards the balance of the JMJ Note. Note B bears interest at the rate of 10% per annum, and is due by February 15, 2010. At any time following the effective date of Note B, the holder may at its election convert all or part of Note B plus accrued interest into shares of the Company’s common stock at the conversion rate of the lesser of: (a) $0.38 per share, or (b) 80% of the average of the three lowest trade prices in the 20 trading days prior to the conversion. In connection with the issuance of Note B, the Company entered into a Collateral and Security Agreement dated as of February 15, 2008 with JMJ Financial pursuant to which the Company granted JMJ Financial a security interest in certain of its assets securing the JMJ Note. As of December 31, 2008, the Company had drawn down and received the following amounts under Note B:

- On March 17, 2008 — $60,000 for a net purchase price of $50,000 (reflecting a 16.66% original issue discount).
- On June 17, 2008 — $60,000 for a net purchase price of $50,000 (reflecting a 16.66% original issue discount).

As long as any portion of this debenture remains outstanding, unless the holders of at least 67% in principal amount of the then outstanding debentures otherwise give prior written consent, the Company is not permitted to (a) guarantee or borrow any indebtedness, (b) enter into any liens, (c) amend its charter documents in any manner that materially and adversely affects any rights of the holders, (d) acquire more than a de minimis number of shares of its common stock equivalents other than as to conversion shares of warrant shares as permitted or required and repurchases of common stock or common stock equivalents of departing officers and directors of the Company, provided that such purchases do not exceed certain specified amounts, (e) repay any indebtedness, other than the debentures already issued on a pro-rata basis, other than regularly scheduled principle payments as such terms are in effect under this debenture, (f) pay cash dividends or distributions on any equity securities of the Company, (g) enter into any material transaction with any affiliate of the Company, unless such transaction is made on an arm’s-length basis, or (h) enter into any agreement with respect to any of the above.

The debenture agreement does not limit the number of shares that the Company could be required to issue. The convertible debenture is convertible at the option of the holders into a total of 45,000,000 shares of common stock at a conversion price of $0.016 per share, subject to anti-dilution and other customary adjustments. The conversion options included in Note A and Note B represent embedded derivative instruments. Accordingly, the Company has complied with the provisions of FAS 155 “Accounting for Certain Hybrid Financial Instruments”. The fair values of Note A and Note B and the related embedded derivatives, valued using a Monte Carlo simulation model, were recorded as of February 15, 2008. The excess of these values over the face values of Note A and Note B was recorded through the results of operations as charges related to the issuance of the February 2008 convertible notes payable. The fair value of the debentures and embedded conversion options was $1,757,470 at December 31, 2008, which includes the face value of the debentures of $720,000, plus the $1,037,470 fair value of the embedded conversion options. The embedded conversion options were valued using the Black-Scholes option pricing model. The assumptions used in the Black-Scholes option pricing model at December 31, 2008 are as follows: (1) dividend yield of 0%; (2) expected volatility of 185%, (3) risk-free interest rate of 0.37%, and (4) expected life of 1.1 years. The change in fair value of the embedded conversion option of $301,256 is recorded through the results of operations as an adjustment to the fair value of derivatives for the year ended December 31, 2008.

The following table summarizes the changes in the fair values of the respective liabilities versus the values at February 15, 2008, March 17, 2008, and June 17, 2008.

	Face Amount	Net Purchase Price	Fair Value at February 15, 2008	Fair Value at December 31, 2008	Increase (Decrease)
Note A	$ 600,000	$ 500,000	$ 1,229,466	$ 1,464,558	$ 235,092
Note B, Tranche 1	60,000	50,000	116,107*	146,456	30,349
Note B, Tranche 2	60,000	50,000	110,641**	146,456	35,815
Total	$ 720,000	$ 600,000	$ 1,456,214	$ 1,757,470	$ 301,256

* Fair value at March 17, 2008

** Fair value at June 17, 2008

As of December 31, 2008, the outstanding principal amount for the 2008 Convertible Debentures is $720,000. Interest expense for the year ended December 31, 2008 was $144,972.

On August 6, 2008, the Company issued a moratorium on amortization of all outstanding debentures. Under the terms of the debenture agreements, the moratorium constitutes an event of default and thus the debentures all incur default interest penalties. As a result of the default, the Company has recognized additional penalty interest, and has recognized the remaining balance of its debt discounts associated with this note in interest expense, and classified the entire balance as short term. See Note 12 for the default interest expense recognized during the year ended December 31, 2008.

9. CONVERTIBLE DEBENTURES—2007

On August 31, 2007, to fund its continuing operations, the Company entered into a Securities Purchase Agreement with accredited investors for the issuance of an aggregate of $12,550,000 principal amount of convertible debentures with an original issue discount of $2,550,000 representing approximately 20.3%. In connection with the closing of the sale of the debentures, the Company received gross proceeds of $10,000,000. The convertible debentures are

convertible at the option of the holders into 36,911,765 shares of common stock at a fixed conversion price of $0.34 per share, subject to anti-dilution and other customary adjustments. In connection with the Securities Purchase Agreement, the Company also issued warrants to purchase an aggregate of 43,240,655 shares of its common stock. The term of the warrants is five years and the exercise price is $0.38 per share, subject to anti-dilution and other customary adjustments. The conversion price and warrant exercise price have each been modified for those subscribers who also participated in the April 2008 convertible note. See Note 7. The investors have contractually agreed to restrict their ability to convert the convertible debentures, exercise the warrants and exercise the additional investment right and receive shares of the Company's common stock such that the number of shares of the Company's common stock held by them and their affiliates after such conversion or exercise does not exceed 4.99% of the Company's then issued and outstanding shares of its common stock.

The April 2008 note (see Note 7) contains a provision that modifies the conversion rate to $0.15 per common share and the warrant exercise price to $0.165 per common share, issued to the April 2008 debenture subscribers who are also participants in the 2007 debentures. The Company has considered the impact of Emerging Issue Task Force statements, or EITFs 96 - 19— Debtor's Accounting for a Modification or Exchange of Debt Instruments, 02 - 4—Determining Whether a Debtor's Modification or Exchange of Debt Instruments is Within the Scope of FASB No. 15, and 05 - 7—Accounting for Modifications to Conversion Options Embedded in Debt Instruments and Related Issues on the accounting treatment of the change in conversion price of the 2007 Convertible Debentures. EITF 96 - 19 states that a transaction resulting in a significant change in the nature of a debt instrument should be accounted for as an extinguishment of debt. The Company has concluded that the change in conversion price and warrant exercise price does not constitute a significant change in the nature of the debt and that the transaction should not be treated as an extinguishment of that debt. The Company initially recorded an additional debt discount in the amount of $451,389 to income related to repricing of 2006 and 2007 convertible debentures and warrants at April 4, 2008 for the impact of the change in the conversion price. As a result of the change in the exercise price of the warrants, 2,399,264 warrants remained at $0.38 exercise price and the remaining 34,512,501 warrants were adjusted to the $0.165 exercise price as a result of participation in the April 2008 debenture. The convertible debentures are convertible at the option of the holders into 1,999,387 and 42,554,652 shares of common stock at a fixed conversion price of $0..34 per share and $0.15 per share, respectively, subject to anti-dilution and other customary adjustments. See Note 7.

The agreements entered into provide that the Company will pay certain cash amounts as liquidated damages in the event that the Company does not maintain an effective registration statement, or if the Company fails to timely execute stock trading activity.

Under the terms of the agreements, principal amounts owed under the debentures become due and payable commencing six months following closing of the transaction. At that time, and each month thereafter, the Company is required to either repay 1/30 of the outstanding balance owed in common stock at the lesser of $0.34 per share or 80% of the prior ten day's average closing stock price, immediately preceding the redemption. The agreements also provide that the Company may force conversion of outstanding amounts owed under the debentures into common stock, if the Company has met certain conditions and milestones, and additionally, has a stock price for 20 consecutive trading days that exceeds 200% of the conversion price. The debenture agreement does not limit the number of shares that the Company could be required to issue.

As long as any portion of this debenture remains outstanding, unless the holders of at least 67% in principal amount of the then outstanding debentures otherwise give prior written consent, the Company is not permitted to (a) guarantee or borrow any indebtedness, (b) enter into any liens, (c) amend its charter documents in any manner that materially and adversely affects any rights of the holders, (d) acquire more than a de minimis number of shares of its common stock equivalents other than as to conversion shares of warrant shares as permitted or required and repurchases of common stock or common stock equivalents of departing officers and directors of the Company, provided that such purchases do not exceed certain specified amounts, (e) pay cash dividends or distributions on any equity securities of the Company, (f) enter into any material transaction with any affiliate of the Company, unless such transaction is made on an arm's-length basis, or (g) enter into any agreement with respect to any of the above.

The agreement included an embedded conversion option, and the Company has complied with the provisions of FAS 155 "Accounting for Certain Hybrid Financial Instruments", and recorded the fair value of the convertible debentures, and the related embedded derivatives, as of August 31, 2007. The fair value of the debentures and embedded conversion option was $7,706,344 at December 31, 2008, which includes the face value of the debentures of $6,986,297, plus the $722,047 fair value of the embedded conversion option. The embedded conversion option was valued using the Black-Scholes option pricing model. The assumptions used in the Black-Scholes option pricing model at December 31, 2008 are as follows: (1) dividend yield of 0%; (2) expected volatility of 185%, (3) risk-free

interest rate of 0.76%, and (4) expected life of 1.7 years. The change in fair value of the embedded conversion option of $1,649,969 is recorded through the results of operations as an adjustment to the fair value of derivatives for the year ended December 31, 2008.

In connection with this financing, the Company paid cash fees to a placement agent of $1,001,800 and issued a warrant to purchase 6,328,890 shares of common stock at an exercise price of $0.38 per share (modified to $0.165 for holders who are also subscribers of the April 2008 note payable – see Note 7). The initial fair value of the warrant was estimated at $2,025,000 using the Black-Scholes pricing model. The broker-dealer warrants were again valued at December 31, 2008 at fair value using the Black-Scholes model, resulting in a decrease in the fair value of the liability from December 31, 2007 of approximately $750,864, which was recorded through the results of operations as an adjustment to fair value of derivatives. The assumptions used in the Black-Scholes model at December 31, 2008 are as follows: (1) dividend yield of 0%; (2) expected volatility of 184%, (3) risk-free interest rate of 1.6%, and (4) expected life of 3.8 years. Cash fees paid, and the initial fair value of the warrant, were capitalized on the date of the note, and have been amortized in full during the year ended December 31, 2008 due to the August 6, 2008 default as discussed below.

The following table summarizes the 2007 Convertible Debentures and discounts outstanding at December 31, 2008 and December 31, 2007:

	December 31, 2008	December 31, 2007
2007 convertible debentures at fair value	$ 7,706,344	$ 11,622,078
Original issue discount	-	(6,063,955)
Warrant derivative discount	-	(2,075,581)
Net convertible debentures	$ 7,706,344	$ 3,482,542
Less current portion	(7,706,344)	(1,160,847)
2007 convertible debenture and embedded derivatives - long term	$ -	$ 2,321,695

As of December 31, 2008 and 2007, the outstanding principal amount for the 2007 Convertible Debentures is $6,984,297 and $12,550,000, respectively. Interest expense for the years ended December 31, 2008 and 2007 was $10,830,351 and $336,353, respectively.

On August 6, 2008, the Company issued a moratorium on amortization of all outstanding debentures. Under the terms of the debenture agreements, the moratorium constitutes an event of default and thus the debentures all incur default interest penalties. As a result of the default, the Company has recognized additional penalty interest, and has recognized the remaining balance of its debt discounts associated with this note in interest expense, and classified the entire balance as short term. See Note 12 for the default interest expense recognized during the year ended December 31, 2008.

10. CONVERTIBLE DEBENTURES—2006

On September 6, 2006, to fund its continuing operations, the Company entered into a Securities Purchase Agreement with accredited investors for the issuance of an aggregate of $10,981,250 principal amount of convertible debentures with an original issue discount of $2,231,250 representing approximately 20.3%. In connection with the closing of the sale of the debentures, the Company received gross proceeds of $8,750,000. The Company may make the amortization payment in either cash or equity. If the payment is made in common stock, the stock will be issued at a price per share equal to the lesser of (i) the then conversion price, and (ii) 70% of the weighted average price for common shares for the 10 trading days prior to the amortization payment date. The debenture agreement does not limit the number of shares that the Company could be required to issue. In connection with the issuance of the debenture, the Company also issued warrants to purchase 19,064,670 shares of common stock at an initial price of

$0.3168 per share (modified to $0.165 for holders who are also subscribers of the April 2008 note payable – see Note 7) and exercisable for five years. The warrants were valued using the Black-Scholes option pricing model. The assumptions used in the Black-Scholes option pricing model at December 31, 2008 are as follows: (1) dividend yield of 0%; (2) expected volatility of 185%, (3) risk-free interest rate of 1.00%, and (4) expected life of 2.7 years. The change in fair value of the embedded conversion option of $2,238,905 is recorded through the results of operations as an adjustment to the fair value of derivatives for the year ended December 31, 2008.

The agreement included an embedded conversion option, and the Company has complied with the provisions of FAS 155 “Accounting for Certain Hybrid Financial Instruments”, and recorded the fair value of the convertible debentures, and related embedded derivatives, as of September 6, 2006. The fair value of the debentures and embedded conversion option was $1,993,354 at December 31, 2008, which includes the face value of the debentures of $1,941,595, plus the $51,759 fair value of the embedded conversion option. The embedded conversion option was valued using the Black-Scholes option pricing model. The assumptions used in the Black-Scholes option pricing model at December 31, 2008 are as follows: (1) dividend yield of 0%; (2) expected volatility of 185%, (3) risk-free interest rate of 0.37%, and (4) expected life of 0.7 years. The change in fair value of the embedded conversion option of $937,712 is recorded through the results of operations as an adjustment to the fair value of derivatives for the year ended December 31, 2008.

As long as any portion of this debenture remains outstanding, unless the holders of at least 67% in principal amount of the then outstanding debentures otherwise give prior written consent, the Company is not permitted to (a) guarantee or borrow any indebtedness, (b) enter into any liens, (c) amend its charter documents in any manner that materially and adversely affects any rights of the holders, (d) acquire more than a de minimis number of shares of its common stock equivalents other than as to conversion shares of warrant shares as permitted or required and repurchases of common stock or common stock equivalents of departing officers and directors of the Company, provided that such purchases do not exceed certain specified amounts, (e) pay cash dividends or distributions on any equity securities of the Company, or (f) enter into any agreement with respect to any of the above.

The April 2008 note (see Note 7) contains a provision that modifies the conversion rate to $0.15 per common share and the warrant exercise price to $0.165 per common share, issued to the April 2008 note payable subscribers who are also participants in the 2006 debentures. The Company has considered the impact of Emerging Issue Task Force statements, or EITFs 96 - 19— Debtor’s Accounting for a Modification or Exchange of Debt Instruments, 02 - 4—Determining Whether a Debtor’s Modification or Exchange of Debt Instruments is Within the Scope of FASB No. 15, and 05 - 7—Accounting for Modifications to Conversion Options Embedded in Debt Instruments and Related Issues on the accounting treatment of the change in conversion price of the 2006 Convertible Debentures. EITF 96 - 19 states that a transaction resulting in a significant change in the nature of a debt instrument should be accounted for as an extinguishment of debt. The Company has concluded that the change in conversion price and warrant exercise price does not constitute a significant change in the nature of the debt and that the transaction should not be treated as an extinguishment of that debt. The Company initially recorded an additional debt discount in the amount of $396,199 to income related to the repricing of the 2006 and 2007 convertible debentures and warrants at August 6, 2008 for the impact of the change in the conversion price. As a result of the change in the exercise price of the warrants, 6,572,626 warrants remained at the $0.3168 exercise price and the remaining 12,492,044 warrants were adjusted to the $0.165 exercise price upon participation in the April 2008 debenture. The convertible debentures are convertible at the option of the holders into 3,866,563 and 5,936,924 shares of common stock at a fixed conversion price of $0.288 per share and $0.15 per share, respectively, subject to anti-dilution and other customary adjustments. See Note 7.

The following table summarizes the 2006 Convertible Debentures and discounts outstanding at December 31, 2008 and 2007:

	December 31, 2008	December 31, 2007
2006 convertible debentures at fair value	$ 1,993,354	$ 7,386,912
Original issue discount	-	(3,777,403)
Warrant derivative discount	-	(562,018)
Net convertible debentures	$ 1,993,354	$ 3,047,491
Less current portion	(1,993,354)	(1,625,327)
2006 convertible debenture and embedded derivatives - long term	$ -	$ 1,422,164

In connection with this financing, the Company paid cash fees to a broker-dealer of $525,000 and issued a warrant to purchase 4,575,521 shares of common stock at an exercise price of $0.3168 per share (modified for holders who are also subscribers of the April 2008 note payable – see Note 7). The broker-dealer warrants were again valued at December 31, 2008 at fair value using the Black-Scholes model, resulting in a decrease in the fair value of the liability of approximately $517,539 and $1,901,059 for the years ended December 31, 2008 and 2007, respectively, which was recorded through the results of operations as a debit to Adjustments to Fair Value of Derivatives. The assumptions used in the Black-Scholes model at December 31, 2008 are as follows: (1) dividend yield of 0%; (2) expected volatility of 184%, (3) risk-free interest rate of 0.08%, and (4) expected life of approximately 2.75 years. Cash fees paid, and the initial fair value of the warrant, were capitalized on the date of the note, and have been amortized in full during the year ended December 31, 2008 due to the August 6, 2008 default as discussed below.

As of December 31, 2008, the outstanding principal amount for the 2006 Convertible Debentures is $1,941,595. Interest expense for the years ended December 31, 2008 and 2007 was $6,420,695 and $2,692,931, respectively.

On August 6, 2008, the Company issued a moratorium on amortization of all outstanding debentures. Under the terms of the debenture agreements, the moratorium constitutes an event of default and thus the debentures all incur default interest penalties. As a result of the default, the Company has recognized additional penalty interest, and has recognized the remaining balance of its debt discounts associated with this note in interest expense, and classified the entire balance as short term. See Note 12 for the default interest expense recognized during the year ended December 31, 2008.

11. CONVERTIBLE DEBENTURES—2005

On September 15, 2005, to fund its continuing operations, the Company entered into a Securities Purchase Agreement with accredited investors for the issuance of an aggregate of $22,276,250 principal amount of convertible debentures with an original issue discount of $4,526,250 representing approximately 20.3%. In connection with the closing of the sale of the debentures, the Company received gross proceeds of $17,750,000. The Company may make the amortization payment in either cash or equity, beginning six months from the closing date of this debenture. If the payment is made in common stock, the stock will be issued at a price per share equal to the lesser of (i) the then conversion price, and (ii) 85% of the weighted average price for common shares for the 10 trading days prior to the amortization payment date. The debenture agreement does not limit the number of shares that the Company could be required to issue.

The agreement included a an embedded conversion option that required separate valuation in accordance with the requirements of FAS 133, EITF –00-27 and related accounting literature. The fair value at December 31, 2008 of the derivative for the conversion feature was valued as an American call option using the Black-Scholes option pricing model with the following inputs: (1) closing stock price from $0.03 (2) exercise price equal to the $0.15 conversion

price (3) volatility based upon the Company's stock trading of 185% (4) risk-free interest rate of 1.00%, and (5) expected life of 1 year.

During years ended December 31, 2008 and 2007, a decrease in the fair value of the embedded derivative amounts of approximately $195,140 and $2,872,000, respectively, was recorded through results of operations as adjustment to fair value of derivatives.

In connection with this financing, we paid cash fees to a broker-dealer of $1,065,000 and issued a warrant to purchase 1,623,718 shares of Common Stock at an adjusted exercise price of $0.165 per share. The fair value of the warrant as of December 31, 2008 was estimated at approximately $7,000 using the Black-Scholes option pricing model. The assumptions used in the Black-Scholes model are as follows: (1) dividend yield of 0%; (2) expected volatility of 184%, (3) risk-free interest rate of 0.04, and (4) expected life of 1 year. Cash fees paid, and the initial fair value of the warrant, were capitalized on the date of the note, and have been amortized in full during the year ended December 31, 2008 due to the August 6, 2008 default as discussed below. During the years ended December 31, 2008 and 2007, the Company recorded approximately $600,278 and $4,007,113, respectively, as interest expense in its accompanying consolidated statements of operations.

In January 2007, the Company's Board of Directors agreed to reduce the exercise price of the warrants issued in connection with the 2005 debentures to $0.95 per share and to reduce the conversion price of the debentures to $0.90 per share. The conversion price and warrant exercise price have each been further modified in April 2008 for those subscribers who also participated in the April 2008 convertible note. See Note 7.

The Company has considered the impact of Emerging Issue Task Force statements, or EITFs 96 - 19— Debtor's Accounting for a Modification or Exchange of Debt Instruments, 02 - 4—Determining Whether a Debtor's Modification or Exchange of Debt Instruments is Within the Scope of FASB No. 15, and 05 - 7—Accounting for Modifications to Conversion Options Embedded in Debt Instruments and Related Issues on the accounting treatment of the change in conversion price of the 2005 Convertible Debentures described in the paragraph above. EITF 96 - 19 states that a transaction resulting in a significant change in the nature of a debt instrument should be accounted for as an extinguishment of debt. The Company has concluded that the change in conversion price and warrant exercise price does not constitute a significant change in the nature of the debt and that the transaction should not be treated as an extinguishment of that debt.

Anti-dilution Impact

As a result of the 2007 Financing, described more fully in Note 9, the warrants issued in connection with the 2005 Financing were automatically diluted down to $0.34. The result of this was to impact both the number and price of the original warrants and replacement warrants issued to both the investors and the brokers.

The new number of original warrants issued to investors totaled 2,335,005. The broker-dealer warrants were again valued at December 31, 2008 at fair value using the Black-Scholes model, resulting in a decrease in the fair value of the liability of $234,392 for the year ended December 31, 2008, which was recorded through the results of operations as a credit to Adjustments to Fair Value of Derivatives. The assumptions used in the Black-Scholes model to value the warrants as of December 31, 2008 were as follows: (1) dividend yield of 0%; (2) expected volatility of 184%, (3) risk-free interest rate of 0.08%, and (4) expected life of 1.5 years.

The new number of replacement warrants issued to investors and brokers totaled 12,689,966. As a result of the change in the exercise price of the warrants, 3,239,810 warrants remained at the $0.34 exercise price and the remaining 9,450,156 warrants were adjusted to the $0.165 exercise price upon participation in the April 2008 debenture. The warrants were again valued at December 31, 2008 at fair value using the Black-Scholes model, resulting in a decrease in the fair value of the liability of approximately $1,402,947 for the year ended December 31, 2008, which was recorded through the results of operations as a credit to Adjustments to Fair Value of Derivatives. The assumptions used in the Black-Scholes model are as follows: (1) dividend yield of 0%; (2) expected volatility of 184%, (3)

risk-free interest rate of 0.08%, and (4) expected life of 2.71 years.

The following table summarizes the 2005 Convertible Debentures and embedded derivatives outstanding at December 31, 2008 and 2007:

	December 31, 2008	December 31, 2007
2005 convertible debenture at face value	$ 81,922	$ 1,677,904
Discounts on debentures		
Original issue discount	-	(152,073)
Conversion feature derivative	-	(193,084)
Warrant derivative	-	(245,825)
Other derivatives	-	(9,266)
Net convertible debentures	81,922	1,077,656
Embedded derivatives	4,075	199,215
2005 convertible debentures and embedded derivatives	85,997	1,276,871
less current portion	(85,997)	(1,276,871)
2005 convertible debenture and embedded derivatives - long term portion	$ -	$ -

On August 6, 2008, the Company issued a moratorium on amortization of all outstanding debentures. Under the terms of the debenture agreements, the moratorium constitutes an event of default and thus the debentures all incur default interest penalties. As a result of the default, the Company has recognized additional penalty interest, and has recognized the remaining balance of its debt discounts associated with this note in interest expense, and classified the entire balance as short term. See Note 12 for the default interest expense recognized during the year ended December 31, 2008.

12. ACCRUED DEFAULT INTEREST

On August 6, 2008, the Company issued a moratorium on amortization of all outstanding debentures. As of June 30, 2009, the moratorium remains in effect. Under the terms of the debenture agreements, the moratorium constitutes an event of default and thus the debentures all incur default interest penalties. The debenture agreements require in the event of default that the full principle amount of the debentures, together with other amounts owing in respect thereof, to the date of acceleration shall become, at the Holder’s election, immediately due and payable in cash. The aggregate amount payable upon event of default shall be equal to the mandatory default amount. The mandatory default amount equals the sum of (i) the greater of: (A) 120% of the principle amount of the debentures to be repaid plus 100% of the accrued and unpaid interest, or (B) the principle amount of the debentures to be repaid, divided by the conversion price on (x) the date the mandatory default amount came due or (y) the date the mandatory default amount is paid in full, whichever is less, multiplied by the closing price on (x) the date the mandatory default amount is demanded or otherwise due or (y) the date the mandatory default amount is paid in full, whichever is greater, and (ii) all other amounts, costs, expenses and liquidated damages due in respect to the debentures. Commencing 5 days after the occurrence of any event of default that results in the eventual acceleration of the debentures, the interest rate on the debentures shall accrue at the rate of 18% per annum. Further, as a result of the default, the Company has recognized the remaining balance of its debt discounts associated with this note in interest expense, and classified the entire balance in short term. The following table summarizes the accrued default interest expense recognized in the accompanying consolidated statements of operations for the year ended December 31, 2008, as well as the consolidated balance sheet at December 31, 2008:

	Accrued Penalty Interest
2005 debenture	$ 22,121
2006 debenture	524,284
2007 debenture	1,885,951
February 2008 debenture	194,420
April 2008 debenture	1,090,608
	$ 3,717,384

13. WARRANT DERIVATIVES—OTHER

In January 2008 the Company issued 680,636 warrants to purchase common stock at $0.39 per share in connection with consulting services provided during the previous quarter. The warrants were initially valued at $112,492 using the Black-Scholes option pricing model. These warrants are classified as a warrant derivative liability. The warrants were again valued at December 31, 2008 at fair value using the Black-Scholes pricing model resulting in a decrease in the fair value of the liability of $90,397 for the year ended December 31, 2008, which was recorded through the results of operations as adjustments to fair value of derivatives. The assumptions used in the Black-Scholes model as of December 31, 2008 are as follows: (1) dividend yield of 0%; (2) expected volatility of 184%, (3) risk-free interest rate of 1.55%, and (4) expected life of 9.1 years.

14. WARRANT SUMMARY

Warrant Activity

A summary of warrant activity for the year ended December 31, 2008 is presented below:

	Number of Warrants	Weighted Average Exercise Price	Weighted Average Remaining Contractual Life (in years)	Aggregate Intrinsic Value (000)
Outstanding, December 31, 2007	104,700,522	$ 0.29	3.55	$ 495
Granted	31,870,465	0.15		
Exercised	-	-		
Forfeited	(7,173,036)	0.25		
Outstanding, December 31, 2008	129,397,951	$ 0.26	3.23	-
Vested and expected to vest at December 31, 2008	129,397,951	0.26	3.23	-
Exercisable, December 31, 2008	129,397,951	$ 0.26	3.23	-

The aggregate intrinsic value in the table above is before applicable income taxes and is calculated based on the difference between the exercise price of the warrants and the quoted price of the Company’s common stock as of the reporting date.

A summary of the status of unvested warrants as of December 31, 2008 and changes during the year then ended, is presented below:

Warrants Outstanding				Warrants Exercisable	
Exercise Price	Number of Shares	Weighted Average Remaining Life (Years)	Weighted Average Exercise Price	Number of Shares	Weighted Average Exercise Price
$ 0.17	107,450,081	3.30	$ 0.17	107,450,081	$ 0.17
0.32	4,575,521	2.68	0.32	4,575,521	0.32
0.38 - 0.40	9,409,526	4.08	0.38	9,409,526	0.38
0.85 - 0.96	5,869,831	1.92	0.95	5,869,831	0.95
2.20	72,917	2.63	2.20	72,917	2.20
2.48 - 2.54	2,020,075	0.93	2.54	2,020,075	2.54
	129,397,951			129,397,951	

15. ADJUSTMENT TO FAIR VALUE OF DERIVATIVES

The following table summarizes the components of the adjustment to fair value of derivatives which were recorded as charges to results of operations for the years ended December 31, 2008 and 2007. The table summarizes by category of derivative liability the (increase) decrease in fair value from market changes during the years ended December 31, 2008 and 2007, the impact of additional investments and repricing and exercise of certain warrants.

	December 31,	
	2008	2007
Embedded Pipe derivatives - 9.05	$ (195,140)	$ (795,772)
Pipe Hybrid instrument – 9.06	(937,712)	(5,808,165)
Pipe Hybrid- FAS 155 – 8.07	1,649,969	(374,039)
Pipe Hybrid- February 2008	351,897	-
Pipe Hybrid- April 2008	(504,144)	-
Original warrants PIPE 2005 , excluding replacement warrants	(234,392)	(891,167)
Replacement Warrants	(1,402,947)	(633,699)
Warrants – PIPE 2006-investors	(2,238,905)	(7,924,612)
Warrants – PIPE 2007-investors	(5,262,623)	(6,784,225)
Warrants – PIPE 2008-investors	(2,178,210)	-
Other Warrant Derivatives- 2005 and 2006	(1,805,990)	(7,182,045)
Other Warrants Derivatives - 2007	(324,050)	(1,598,056)
	$ (13,082,247)	$ (31,991,780)

16. STOCKHOLDERS' EQUITY TRANSACTIONS

The Company is authorized to issue two classes of capital stock, to be designated, respectively, Preferred Stock and Common Stock. The total number of shares of Preferred Stock the Company is authorized to issue is 50,000,000 par value $0.001 per share. The total number of shares of Common Stock the Company is authorized to issue is 500,000,000, par value $0.001 per share. The Company had no Preferred Stock outstanding as of December 31, 2008 and had 429,448,381 shares of Common Stock outstanding as of December 31, 2008.

Effective as of April 1, 2008, Jonathan F. Atzen, the Company's Senior Vice President, General Counsel and Secretary, resigned from his positions with the Company and terminated his employment arrangement with the Company. Pursuant to the terms of an agreement between the Company and Mr. Atzen effective April 1, 2008, the Company agreed to (i) pay Mr. Atzen $48,333.33 in cash as a severance payment, (ii) issue a fully vested option to purchase an aggregate of 400,000 shares of common stock pursuant to the Company's 2005 Stock Incentive Plan, as amended (the "2005 Plan"), (iii) issue an aggregate of 936,692 shares of the common stock pursuant to the 2005 Plan, (iv) provide for the vesting of all outstanding stock options held by Mr. Atzen and (v) provide Mr. Atzen and his family with full healthcare and dental coverage for a period of 6 months as was provided to Mr. Atzen during his employment.

Effective as of March 17, 2008, Ivan Wolkind, the Company's Senior Vice President—Finance, Administration & Chief Accounting Officer, resigned from all positions with the Company and voluntarily terminated his employment arrangement with the Company for personal reasons. On April 2, 2008, the Company entered into a Consulting Agreement with Mr. Wolkind. Pursuant to the Consulting Agreement, Mr. Wolkind agreed for a period of 90 days to provide up to 20 hours per week of financial consulting services to the Company including but not limited to (i) assisting with general accounting and investor diligence, (ii) commenting on the structure of proposed financial transactions, (iii) responding to queries regarding ACT's corporate structure, and (iv) reviewing strategic and financial documents as appropriate. As consideration for the services to be provided, the Company agreed to pay Mr. Wolkind an aggregate of $45,834 of which was paid on April 2, 2008. As additional consideration for the services to be provided, the Company agreed to issue to Mr. Wolkind 238,719 shares of common stock pursuant to the 2005 Plan. On May 2, 2008, the consulting contract was terminated with no future payments due.

Between September 29, 2008 and January 20, 2009, the Company was ordered by the Circuit Court of the Twelfth Judicial District Court for Sarasosa County, Florida to settle certain past due accounts payable, for previous professional services and other operating expenses incurred, by the issuance of shares of its common stock. In aggregate, as of January 30, 2009, the Company settled $1,108,673 in accounts payable through the issuance of 260,116,283 shares of its common stock. In 2008, the Company settled $603,474 in accounts payable through the issuance of 220,735,436 shares of its common stock. The Company recorded a loss on settlement of $5,436,137 in its accompanying statements of operations for the year ended December 31, 2008, which includes losses on settlement of $4,695,289 during the fourth quarter ended December 31, 2008. The losses were calculated as the difference between the amount of accounts payable relieved and the value of the shares (based on the closing share price on the settlement date) that were issued to relieve the accounts payable.

17. STOCK-BASED COMPENSATION

Stock Plans

On August 12, 2004, ACT's Board of Directors approved the establishment of the 2004 Stock Option Plan (the "2004 Stock Plan"). Stockholder approval was received on December 13, 2004. The total number of common shares available for grant and issuance under the plan may not exceed 2,800,000 shares, subject to adjustment in the event of certain recapitalizations, reorganizations and similar transactions. Common stock purchase options may be exercisable by the payment of cash or by other means as authorized by the Board of Directors or a committee established by the Board of Directors. At December 31, 2008, ACT had granted 2,492,000 common share purchase options under the plan. At December 31, 2008, there were 308,000 options available for grant under this plan.

On December 13, 2004, ACT's Board of Directors and stockholders approved the establishment of the 2004 Stock Option Plan II (the "2004 Stock Plan II"). The total number of common shares available for grant and issuance under the plan may not exceed 1,301,161 shares, subject to adjustment in the event of certain recapitalizations, reorganizations and similar transactions. Common stock purchase options may be exercisable by the payment of cash or by other

means as authorized by the Board of Directors or a committee established by the Board of Directors. At December 31, 2008, ACT had granted 1,301,161 common share purchase options under the plan. At December 31, 2008, there were no options available for grant under this plan.

On January 31, 2005, the Company's Board of Directors approved the establishment of the 2005 Stock Incentive Plan (the "2005 Plan") for its employees, subject to approval of our shareholders. The total number of common shares available for grant and issuance under the plan may not exceed 9 million shares, plus an annual increase on the first day of each of the Company's fiscal years beginning in 2006 equal to 5% of the number of shares of our common stock outstanding on the last day of the immediately preceding fiscal year, subject to adjustment in the event of certain recapitalizations, reorganizations and similar transactions. On January 24, 2008, the Company's shareholders approved an increase of 25,000,000 shares to the 2005 Plan. Common stock purchase options may be exercisable by the payment of cash or by other means as authorized by the Board of Directors or a committee established by the Board of Directors. At December 31, 2008, we had granted 11,875,734 (net of forfeitures) common stock purchase options and 1,497,263 shares of common stock under the plan. At December 31, 2008, there were 15,722,589 options available for grant under this plan.

Stock Option Activity

A summary of option activity for the years ended December 31, 2008 and 2007 is presented below:

	Number of Options	Weighted Average Exercise Price	Weighted Average Remaining Contractual Life (in years)	Aggregate Intrinsic Value (000)
Outstanding, January 1, 2007	12,874,163	$ 0.71	8.20	$ 1,771
Granted	1,300,000	0.75		
Exercised	(340,000)	0.05		
Forfeited	(2,213,192)	0.83		
Outstanding, December 31, 2007	11,620,971	$ 0.78	7.16	$ 255
Granted	11,875,734	0.21		
Exercised	(1,200,000)	0.05		
Forfeited	(8,169,015)	0.53		
Outstanding, December 31, 2008	14,127,690	$ 0.51	7.71	$ -
Vested and expected to vest at December 31, 2008	13,359,485	0.52	7.64	-
Exercisable, December 31, 2008	8,218,418	$ 0.70	6.75	$ -

The aggregate intrinsic value in the table above is before applicable income taxes and is calculated based on the difference between the exercise price of the options and the quoted price of the Company's common stock as of the reporting date.

A summary of the status of unvested employee stock options as of December 31, 2008 and changes during the period then ended, is presented below:

	Shares	Weighted Average Grant Date Fair Value Per Share
Unvested at January 1, 2008	783,814	$ 0.46
Granted	11,875,734	0.21
Vested	(2,372,518)	0.39
Forfeited	(4,377,758)	0.26
Unvested at December 31, 2008	5,909,272	$ 0.24

As of December 31, 2008, total unrecognized stock-based compensation expense related to nonvested stock options was approximately $1,136,000, which is expected to be recognized over a weighted average period of approximately 9.06 years.

The following table summarizes information about stock options outstanding and exercisable at December 31, 2008.

	Options Outstanding			Options Exercisable	
Exercise Price	Number of Shares	Weighted Average Remaining Life (Years)	Weighted Average Exercise Price	Number of Shares	Weighted Average Exercise Price
$ 0.05	922,000	5.62	$ 0.05	922,000	$ 0.05
0.21	7,440,000	9.11	0.21	1,667,586	0.21
0.25	1,301,161	6.00	0.25	1,301,161	0.25
0.35	65,000	7.53	0.35	39,271	0.35
0.75 - 0.76	20,000	7.82	0.75	10,837	0.75
0.85	3,197,112	6.09	0.85	3,173,779	0.85
1.35	235,000	7.31	1.35	205,782	1.35
2.04 - 2.11	295,000	6.99	2.07	251,352	2.07
2.20 - 2.48	652,417	6.65	2.34	646,650	2.34
	14,127,690			8,218,418	

18. COMMITMENTS AND CONTINGENCIES

The Company entered into a lease for office and laboratory space in Worcester, Massachusetts commencing December 2004 and expiring April 2010, and for office space in Los Angeles, California commencing November 2005 and expiring May 2008. The Company's rent at its Los Angeles, California site was on a month-to-month basis after May 2008. As discussed in Note 21, on March 1, 2009, the Company vacated its site in Los Angeles, California and moved to another site in Los Angeles. The term on this new lease is through February 28, 2010. Monthly base rent is $2,170. Annual minimum lease payments are as follows:

Year 1	$ 265,677
Year 2	89,910
Total	$ 355,587

Rent expense recorded in the financial statements for the year ended December 31, 2008 and 2007 was $2,183,126 and $1,485,218, respectively.

We have entered into employment contracts with certain executives and research personnel. The contracts provide for salaries, bonuses and stock option grants, along with other employee benefits. The employment contracts generally have no set term and can be terminated by either party. There is a provision for payments of three months to one year of annual salary as severance if we terminate a contract without cause, along with the acceleration of certain unvested stock option grants.

Effective as of April 1, 2008, Jonathan F. Atzen, the Company's Senior Vice President, General Counsel and Secretary, resigned from his positions with the Company and terminated his employment arrangement with the Company. Mr. Atzen had no disagreements with the Company, its Board of Directors or its management in any matter relating to the Company's operations, policies or practices.

Effective as of March 17, 2008, Ivan Wolkind, the Company's Senior Vice President—Finance, Administration & Chief Accounting Officer, resigned from all positions with the Company and voluntarily terminated his employment arrangement with the Company for personal reasons. Mr. Wolkind had no disagreements with the Company, its Board of Directors or its management in any matter relating to the Company's operations, policies or practices.

On May 26, 2008, Alan G. Walton, Ph., D.Sc. announced his resignation from the Board of Directors of the Company, effective immediately. Dr. Walton had no disagreements with the Company, its Board of Directors or its management in any matter relating to the Company's operations, policies or practices.

On May 31, 2008, the Company settled a dispute as a subtenant to its Alameda, California office for nonpayment of rent to its sublandlord. The sublease expired on May 31, 2008. As of that date, $445,000 of base rent, additional rent, and equipment payments, plus late fees and costs due under the sublease for a grand total of approximately $475,000 remained unpaid during the period from January 1, 2008 through May 31, 2008. On the date of the lease expiration, the Company vacated the premises but failed to remove the equipment that belonged to the Company. Consequently, the Company has agreed to assign all rights to the equipment to the sublandlord in partial settlement of amounts owed. Further, the Company has agreed to assign the sublandlord 62.5% of the Company's right, title, and interest in all royalties and 65% of subtenant's right, title, and interest in all other consideration payable to the Company under a license agreement with Embryome Sciences, Inc., dated July 10, 2008, until such time as the sublandlord has received royalty and other payments equal to $475,000, including the value of the equipment assigned to the sublandlord. Accordingly, the Company has recorded accrued rents relating to this matter in the amount of $389,400, which is the $475,000 settlement amount net of the withheld deposit of $27,000 and net of abandoned fixed assets of $58,600, in the accompanying consolidated balance sheet at December 31, 2008. As of June 30, 2009, the entire balance was unpaid.

On September 19, 2008, the Company was delivered judgment with respect to the landlord of its Charlestown, Massachusetts site over unpaid lease amounts. The Company failed to make its monthly lease payments after December 2007, which constituted an event of default under the lease agreement. Accordingly, the Company settled with the landlord in total of $1,751,543 for unpaid rent expenses, attorney fees, interest and damages for unpaid rent incurred through September 9, 2008. The Company abandoned its fixed assets at this site upon vacating the space, and recorded a loss on disposal of fixed assets amounting to $227,543 in its accompanying consolidated statement of operations during the year ended December 31, 2008. The Company accrued the remaining balance for the portion of damages incurred from January 1, 2008 through September 30, 2008 in accrued expenses its accompanying balance sheet at December 31, 2008, net of one payment of approximately $147,000. As of June 30, 2009, the Company had paid the entire amount under the judgment, plus approximately $104,000 in interest, and no longer has any obligations with respect to this judgment.

The Company and its subsidiary Mytogen, Inc. are currently defending themselves against a civil action brought in Suffolk Superior Court, No. 09-442-B, by their former landlord at 79/96 Thirteenth Street, Charlestown,

Massachusetts, a property vacated by the Company and Mytogen effective May 31, 2008. In that action, Alexandria Real Estate-79/96 Charlestown Navy Yard ("ARE") is alleging that it has been unable to relet the premises and therefore seeking rent for the vacated premises since September 2008. Alexandria is also seeking certain clean-up and storage expenses. The Company is vigorously defending against the suit, claiming that ARE had breached certain convenants as of when Mytogen vacated, and that had ARE used reasonable diligence in its efforts to secure a new tenant, it would have been more successful. No trial date has been set. At this time, management cannot determine the likelihood of an unfavorable outcome from this lawsuit, and thus no amount has been accrued in its financial statements at December 31, 2008. If the Company does not prevail in these proceedings, losses for unpaid rents and other fees could be within a range between $3.5 million and $4.5 million.

Between April 1, 2008 and December 31, 2008, ACT issued 6,619,072 shares of common stock to several Holders of the 2005, 2006, 2007 and 2008 Debentures primarily for two reasons: (a) duplicate pre-redemption shares at the time of true-up and (b) negotiated shares with investors in settlement of various complaints from Debenture holders. The Company's policy is to expense the value of these shares to financing costs in the period the shares were issued or the costs were otherwise incurred. In 2008, the Company recorded $482,430 as financing costs associated with the issuance of these shares. At this time, the Company cannot determine potential legal ramifications arising from the issuance of these shares, and the Company has concluded that the likelihood of unfavorable ramifications from the issuance of these shares is remote and not estimable.

19. INCOME TAXES

The items accounting for the difference between income taxes computed at the federal statutory rate and the provision for income taxes were as follows:

	2008	2007
Statutory federal income tax rate	(34%)	(34%)
State income taxes, net of federal taxes	(6%)	(6%)
Non-includable items	8%	(19%)
Increase in valuation allowance	32%	59%
Effective income tax rate	-	-

Significant components of deferred tax assets and (liabilities) are as follows:

	2008	2007 (Restated)
Deferred tax assets:		
Net operating loss carryforwards	$ 39,265,458	$ 25,312,676
Employee non-qualified stock options	1,008,424	797,000
Deferred interest and finance charges	43,000	43,000
Deferred revenue	1,250,210	-
Capitalized R&D costs	441,000	441,000
Valuation allowance	(42,008,092)	(26,593,676)
Net deferred tax asset	-	-

The Company files income tax returns in the U.S. federal jurisdiction, and various state jurisdictions. With few exceptions, the Company is no longer subject to U.S. federal, state and local income tax examinations by tax authorities for years before 2001.

At December 31, 2008, the Company had federal and state net operating loss carry forwards available to offset future taxable income of approximately $95 million and $92 million respectively. These carry forwards will begin to expire in the years ending December 31, 2022 and December 31, 2012, respectively. These net operating losses are subject to various limitations on utilization based on ownership changes in the prior years under Internal Revenue Code Section 382. The Company is in the process of analyzing the impact of the ownership changes but management does not believe they will have a material impact on the Company's ability to utilize the net operating losses in the future.

The Company periodically evaluates the likelihood of the realization of deferred tax assets, and adjusts the carrying amount of the deferred tax assets by the valuation allowance to the extent the future realization of the deferred tax assets is not judged to be more likely than not. The Company considers many factors when assessing the likelihood of future realization of its deferred tax assets, including its recent cumulative earnings experience by taxing jurisdiction, expectations of future taxable income or loss, the carryforward periods available to the Company for tax reporting purposes, and other relevant factors.

At December 31, 2008, based on the weight of available evidence, including cumulative losses in recent years and expectations of future taxable income, the Company determined that it was more likely than not that its deferred tax assets would not be realized and have a $42.0 million valuation allowance associated with its deferred tax assets.

The Company adopted the provisions of FASB Interpretation No. 48, Accounting for Uncertainty in Income Taxes ("FIN 48"), on January 1, 2007. FIN 48 prescribes a recognition threshold that a tax position is required to meet before being recognized in the financial statements and provides guidance on recognition, measurement, classification, interest and penalties, accounting in interim periods, disclosure and transition issues.

As a result of the implementation of FIN 48, the Company reduced its net operating loss carryforward by $1,550,000. This reduction of the net operating loss carryforward translated into a reduction of the gross deferred tax asset of $658,500, with a corresponding reduction of the valuation allowance against that deferred tax asset. Due to the offsetting effect of the reduction of the valuation allowance, the adoption of FIN 48 had no impact on the Company's balance sheets or statements of operations.

The following table summarizes the activity related to its unrecognized tax benefits:

	Total
Balance at January 1, 2008	$ 658,500
Increase related to prior period tax positions	-
Increase related to current year tax positions	-
Expiration of the statuts of limitations for the assessment of taxes	-
Other	-
Balance at December 31, 2008	$ 658,500

The components of income tax expense are as follows:

	2008	2007
Current federal income tax	$ -	$ -
Current state income tax	-	-
Deferred taxes	15,414,416	9,192,476
Valuation allowance	(15,414,416)	(9,192,476)
	$ -	$ -

Future changes in the unrecognized tax benefit will have no impact on the effective tax rate due to the existence of the valuation allowance. The Company estimates that the unrecognized tax benefit will not change significantly within the next twelve months. The Company will continue to classify income tax penalties and interest as part of general and administrative expense in its consolidated statements of operations. There were no interest or penalties accrued as of December 31, 2008 or 2007.

The following table summarizes the open tax years for each major jurisdiction:

Jurisdiction	Open Tax Years
Federal	2001 - 2006
States	2001 - 2006

For tax years 2006 – 2008, the Company has not filed its state or federal tax returns; thus, the statute of limitations has not yet begun its term. As the Company has significant net operating loss carryforwards, even if certain of the Company's tax positions were disallowed, it is not foreseen that the Company would have to pay any taxes in the near future. Consequently, the Company does not calculate the impact of interest or penalties on amounts that might be disallowed.

20. RELATED PARTY TRANSACTIONS

As discussed in Note 7, Dr. Shapiro, one of the Company’s directors, may be deemed the beneficial owner of the securities owned by The Shapiro Family Trust. Refinanced bridge debt consisted of $70,000 in unsecured convertible notes previously issued and sold to The Shapiro Family Trust on March 21, 2008. The net outstanding amount of principal plus interest of the Notes was converted into the debt within the April 2008 debenture on a dollar-for-dollar basis.

Gary Rabin, a member of the Board of Directors may be deemed the beneficial owner of the securities owned by PDPI, LLC, in which he holds a partnership interest. Refinanced debt consisted of $60,000 in an unsecured note previously issued and sold to PDPI, LLC, and another $61,000 assumed by PDPI, LLC, and consisted of amounts owed by a third party which were rolled over into the April 2008 Debenture.

21. SUBSEQUENT EVENTS

As discussed in Note 16, between October 3, 2008 and January 20, 2009, the Company was ordered by the Circuit Court of the Twelfth Judicial District Circuit for Sarasosa County, Florida to settle certain past due accounts payable. The Company settled the accounts payable by the issuance of shares of its common stock, based on a formula that divides the amount due in dollars by the settlement date stock price, and multiplied by a specified factor. In January 2009, the Company settled the remaining $505,199 in accounts payable through the issuance of 39,380,847 shares of its common stock. The Company has recorded a loss on settlement of litigation in its consolidated statement of operations in the amount of $4,793,949 in the first quarter 2009.

On December 18, 2008, the Company entered into a license agreement with Transition for certain of its non-core technology. Under the agreement, Transition agreed to acquire a license to the technology for $3.5 million in cash. During 2008, the Company received approximately $2 million under this agreement. In January 2009, the Company received the remaining $1.5 million in cash under this agreement. The Company is recognizing revenue from this agreement over its 17-year patent useful life. The Company expects to apply the proceeds towards its retinal epithelium (“RPE”) cells program.

On March 1, 2009, the Company vacated a site in Los Angeles, California and moved to another site in Los Angeles. The lease term is through February 28, 2010. Monthly base rent is $2,170.

On March 5, 2009, the Company settled a lawsuit originally brought by Alpha Capital on February 11, 2009, who is an investor in the 2006, 2007, and 2008 debentures, and associated with the default on August 6, 2008 on all debentures. In settlement of the lawsuit, the Company agreed to reduce the conversion price on convertible debentures

held by Alpha Capital to $0.02 per share, effective immediately, so long as the Company has a sufficient number of authorized shares to honor the request for conversion.

On March 11, 2009, the Company entered into a $5 million credit facility (“Facility”) with a life sciences fund. Under the agreement, the proceeds from the Facility must be used exclusively for the Company to file an investigational new drug (“IND”) for its RPE program, and will allow the Company to complete both Phase I and Phase II studies in humans. An IND is required to commence clinical trials. Under the terms of the agreement, the Company may draw down funds, as needed for clinical development of the RPE program, from the investor through the issuance of Series A-1 convertible preferred stock. The preferred stock pays dividends, in kind of preferred stock, at an annual rate of 10%, matures in four years from the drawdown date, and is convertible into common stock at $0.75 per share. As of June 30, 2009, the Company has drawn down $1,505,000 on this credit facility. For providing investor relations services in connection with this credit facility, the Company issued a consultant 24,900,000 shares of its common stock on February 9, 2009. The Company valued the issuance of these shares at $4,731,000 based on a closing price of $0.19 on February 9, 2009 and recorded the value of the shares as deferred financing costs associated with the financing on the date they were issued.

CHA Bio & Diostech Co., Ltd.

On March 30, 2009, the Company entered into a second license agreement with CHA under which the Company will license its RPE technology, for the treatment of diseases of the eye, to CHA for development and commercialization exclusively in Korea. The Company is eligible to receive up to a total of $1.9 million in fees based upon the parties achieving certain milestones, including the Company making an IND submission to the US FDA to commence clinical trials in humans using the technology. The Company received an up-front fee under the license in the amount of $1,000,000. Under the agreement, CHA will incur all of the costs associated with the RPA clinical trials in Korea.

On May 13, 2009, the Company entered into a third license agreement with CHA under which the Company will license its proprietary “single blastomere technology,” which has the potential to generate stable cell lines, including RPE for the treatment of diseases of the eye, for development and commercialization exclusively in Korea. The Company received an upfront license fee of $300,000.