GERON CORP
Form 10-K
February 26, 2010

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM 10-K

(Mark One)

x ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
For the Fiscal Year Ended December 31, 2009

or

o TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the transition period from _____ to _____.

Commission File Number: 0-20859

GERON CORPORATION

(Exact name of registrant as specified in its charter)

Delaware	75-2287752
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification No.)
230 Constitution Drive, Menlo Park, CA	94025
(Address of principal executive offices)	(Zip Code)

Registrant's telephone number, including area code: (650) 473-7700

Securities registered pursuant to Section 12(b) of the Act:

Title of each class	Name of each exchange on which registered
Common Stock, $0.001 par value	Nasdaq Global Market

Securities registered pursuant to Section 12(g) of the Act: None

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes o No x

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act. Yes o No x

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes x No o

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K is not contained herein, and will not be contained, to the best of registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K. x

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or a smaller reporting company. See the definitions of "large accelerated filer", "accelerated filer" and "smaller reporting company" in Rule 12b-2 of the Exchange Act.

o Large accelerated filer	x Accelerated filer
o Non-accelerated filer (Do not check if a smaller reporting company)	o Smaller reporting company

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Act). Yes o No x

The aggregate market value of voting and non-voting common equity held by non-affiliates of the registrant was approximately $679,017,000 based upon the closing price of the common stock on June 30, 2009 on the Nasdaq Global Market. Shares of common stock held by each officer, director and holder of five percent or more of the outstanding common stock have been excluded in that such persons may be deemed to be affiliates. This determination of affiliate status is not necessarily a conclusive determination for other purposes.

As of February 23, 2010, there were 97,455,463 shares of common stock outstanding.

DOCUMENTS INCORPORATED BY REFERENCE:

Document	Form 10-K Parts
Portions of the Registrant's definitive proxy statement for the 2010 annual meeting of stockholders to be filed pursuant to Regulation 14A within 120 days of the Registrant's fiscal year ended December 31, 2009	II, III

Forward-Looking Statements

This annual report on Form 10-K, including "Management's Discussion and Analysis of Financial Condition and Results of Operations" in Item 7, contains forward-looking statements that involve risks and uncertainties, as well as assumptions that, if they never materialize or prove incorrect, could cause the results of Geron Corporation (Geron or the Company) to differ materially from those expressed or implied by such forward-looking statements. All statements other than statements of historical fact are statements that could be deemed forward-looking statements. The risks and uncertainties referred to above include, without limitation, risks inherent in the development and commercialization of Geron's potential products, dependence on collaborative partners, need for additional capital, need for regulatory approvals or clearances, maintenance of Geron's intellectual property rights and other risks that are described herein and that are otherwise described from time to time in Geron's Securities and Exchange Commission reports including, but not limited to, the factors described in Item 1A, "Risk Factors," of this annual report. Geron assumes no obligation and does not intend to update these forward-looking statements.

PART I

ITEM 1. BUSINESS

Overview

Geron is developing first-in-class biopharmaceuticals for the treatment of cancer and chronic degenerative diseases, including spinal cord injury, heart failure and diabetes. The company is advancing an anti-cancer drug and a cancer vaccine that target the enzyme telomerase through multiple clinical trials in different cancers.

We were incorporated in 1990 under the laws of Delaware. Our principal executive offices are located at 230 Constitution Drive, Menlo Park, California 94025. Our telephone number is (650) 473-7700.

We make available free of charge on or through our Internet website our annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K and all amendments to those reports as soon as reasonably practicable after they are electronically filed with, or furnished to, the Securities and Exchange Commission. Our Internet website address is www.geron.com. Information on our website is not incorporated by reference and does not form a part of this report. Copies of our annual reports on Form 10-K will be furnished without charge to any person who submits a written request directed to the attention of our Secretary, at our offices located at 230 Constitution Drive, Menlo Park, California 94025.

Major Technology Platforms

Telomeres and Telomerase: Role in Cellular Aging and Cancer

Cells are the building blocks for all tissues in the human body and cell division plays a critical role in the normal growth, maintenance and repair of human tissue. However, in the human body, most cell division is a limited process. Depending on the tissue type, cells generally divide only 60 to 100 times during the course of their normal lifespan.

We and our collaborators have shown that telomeres, located at the ends of chromosomes, are key genetic elements involved in the regulation of the cellular aging process. Our work has shown that each time a normal cell divides, telomeres shorten. Once telomeres reach a certain short length, cell division halts and the cell enters a state known as replicative senescence or aging. Thus, this shortening of the telomeres effectively serves as a molecular "clock" for cellular aging. We and others have shown that when the enzyme telomerase is introduced into normal cells, it can restore telomere length — reset the "clock" — thereby increasing the functional lifespan of the cells. Importantly, it does this without altering the cells' biology or causing them to become cancerous. Human telomerase, a complex enzyme, is composed of a ribonucleic acid (RNA) component, known as hTR, a protein component, known as hTERT, and other accessory proteins. In 1994, we cloned the gene for hTR, and in 1997, with collaborators, cloned the gene for hTERT.

The 2009 Nobel Prize for Physiology and Medicine was awarded for the discovery of how chromosomes are protected by telomeres and the enzyme telomerase. The Nobel laureates were early Geron collaborators, Elizabeth H. Blackburn and Carol W. Greider, along with Jack W. Szostak.

Our work and that of others has shown that telomerase is not present, or is present at very low levels, in most normal cells and tissues, but that during cancer progression, telomerase is abnormally reactivated in all major cancer types. Our studies have shown that while telomerase does not cause cancer (which is caused by mutations in oncogenes and tumor suppressor genes), the continued presence of telomerase enables cancer cells to maintain telomere length, providing them with indefinite replicative capacity. We and others have shown in various tumor models that inhibiting telomerase activity results in telomere shortening and causes aging or death of the cancer cell.

Although telomerase is expressed in nearly all cancer cells, it is not expressed in most normal cells. That gives telomerase the potential of being both a universal as well as a highly specific cancer target. This specificity means that drugs and biologics that attack cancer cells by targeting telomerase may leave most other cells unaffected, and thus may have fewer side effects than conventional chemotherapeutic agents that typically affect both cancer and non-cancer cells.

We are developing anti-cancer therapies based on telomerase inhibitors and telomerase therapeutic vaccines. Through our licensee, we also intend to develop products using telomerase as a marker for cancer diagnosis, prognosis, patient monitoring and screening.

We are also researching compounds that transiently activate telomerase in senescent cells to restore cell function for the treatment of injuries and chronic diseases.

Human Embryonic Stem Cells: A Potential Source for the Manufacturing of Therapeutic Cells

Stem cells generally are self-renewing primitive cells that can develop into functional, differentiated cells. Human embryonic stem cells (hESCs), which are derived from very early stage embryos called blastocysts, are unique because:

- they are pluripotent, which means they can develop into all cells and tissues in the body, and
- they self-renew indefinitely in the undifferentiated state because they express high levels of telomerase.

The ability of hESCs 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. We have demonstrated that hESCs express telomerase continuously, a characteristic of immortal cells. Other stem cells such as blood or gut stem cells express telomerase at very low levels or only periodically; they therefore age, limiting their use in research or therapeutic applications. hESCs can be expanded in culture indefinitely and hence can be banked for scaled product manufacture.

We intend to use human embryonic stem cell technology to enable the development of transplantation therapies by providing standard starting material for the manufacture of therapeutic cells and facilitate pharmaceutical research and development practices by providing cells for disease models and screening.

Commercial Opportunities for Our Major Technology Platforms

Oncology

Cancer is a group of diseases characterized by the uncontrolled growth and spread of abnormal cells. The American Cancer Society estimated that nearly 1.5 million new cancer cases were diagnosed in 2009 and overall annual costs associated with cancer in 2008 were an estimated $228.1 billion in the United States alone. Because telomerase is detectable in more than 30 human cancer types and in the great majority of cancer samples studied, we believe that telomerase-based drugs could overcome the limitations of current cancer therapies and potentially be broadly applicable and highly specific drug treatments for cancer.

We and our licensees are developing a range of anti-cancer therapies and diagnostics, including anti-cancer therapies based on telomerase inhibitors and telomerase therapeutic vaccines, and diagnostics based on telomerase detection. We believe telomerase is an ideal target for cancer therapeutics and diagnostics because it appears to be universal (expressed in all major types of cancers studied to date), specific (not expressed in most normal cells), and critical (required for long-term survival of cancer cells). We believe that we have the dominant patent position in the field of telomerase. Whether it is achieved by us or our licensees, we believe that progress in the development of telomerase-based cancer therapeutics and diagnostics will further validate the importance of telomerase as a cancer target and therefore benefit all of our telomerase cancer programs.

The following table briefly describes the cancer therapeutic and diagnostic products being developed by us or our licensees and the stage of development of these product candidates.

Product	Product Description	Application	Development Stage	Patient Enrollment Status
Imetelstat (GRN163L)	Telomerase Inhibitor	Chronic Lymphoproliferative Diseases	Phase I Trial (single agent)	Completed
Imetelstat (GRN163L)	Telomerase Inhibitor	Solid Tumors	Phase I Trial (single agent)	Open
Imetelstat (GRN163L)	Telomerase Inhibitor	Multiple Myeloma*	Phase I Trial (single agent)	Completed
Imetelstat (GRN163L)	Telomerase Inhibitor	Non-Small Cell Lung Cancer*	Phase I Trial (combination)	Completed
Imetelstat (GRN163L)	Telomerase Inhibitor	Breast Cancer*	Phase I/II Trial (combination)	Open
Imetelstat (GRN163L)	Telomerase Inhibitor	Multiple Myeloma	Phase I Trial (combination)	Completed
GRNVAC1	Telomerase Cancer Vaccine	Acute Myelogenous Leukemia (AML)	Phase II Trial	Completed

* Initiation of Phase II clinical trials in multiple myeloma, non-small cell lung cancer, breast cancer and essential thrombocythemia is planned for 2010.

Licensees	Product Description	Application	Development Stage	Patient Enrollment Status
Merck & Co.	Telomerase Cancer Vaccine	Prostate and Solid Tumors	Phase I Trial	Completed
Sienna Cancer Diagnostics	Telomerase Diagnostic	Bladder Cancer	Preclinical Development	N/A

Telomerase Inhibition (Imetelstat Sodium - GRN163L). Upregulation of telomerase is necessary for most cancer cells to replicate indefinitely and thereby enable tumor growth and metastasis. One of our strategies for the development of anti-cancer therapies is to inhibit telomerase activity in cancer cells. Inhibiting telomerase activity should result in telomere shortening which can cause aging and death of cancer cells. Recent data show that telomerase can protect tumor cells from genomic instability and other forms of cellular stress, suggesting that inhibiting telomerase can cause a more rapid suppression of tumor growth than predicted by telomere loss alone. Because telomerase is expressed at very low levels, if at all, in most normal cells, the telomerase inhibition therapies described below are being developed with the goal of being less toxic to normal cells than conventional chemotherapy.

We have designed and synthesized a special class of short-chain nucleic acid molecules, known as oligonucleotides, which target the template region, or active site, of telomerase. Our recent work has focused on one of these oligonucleotides, called imetelstat sodium (originally known as GRN163L). We have demonstrated that it has highly potent telomerase inhibitory activity at very low concentrations in biochemical assays, various cellular systems and animal studies. Imetelstat is a direct enzyme inhibitor,

not an antisense compound. It is smaller (lower molecular weight) than typical antisense compounds or other oligonucleotide drug candidates and uses a special thiophosphoramidate chemical backbone, for which we acquired key patents in March 2002 from Lynx Therapeutics.

Imetelstat sodium (imetelstat) is a 13-mer oligonucleotide N3'-- P5' thiophosphoramidate (NPS oligonucleotide) that is covalently attached to a C16 (palmitoyl) lipid moiety, which increases potency and improves its pharmacokinetic and pharmacodynamic properties. Imetelstat binds directly with high affinity to the template region of the RNA component of human telomerase (hTR), which lies in the active or catalytic site of hTERT, the telomerase reverse transcriptase. Imetelstat binding to hTR results in direct, competitive inhibition of telomerase enzymatic activity.

After completing a series of animal toxicology and preclinical efficacy studies of imetelstat in 2005 and filing an Investigational New Drug (IND) application, we received clearance from the U.S. Food and Drug Administration (FDA) to begin human clinical trials of imetelstat. We sponsored six Phase I or I/II clinical trials at 22 U.S. medical centers to examine the safety, tolerability, pharmacokinetics and pharmacodynamics of imetelstat, alone or in combination with other standard therapies in patients with chronic lymphoproliferative diseases, solid tumors, multiple myeloma, non-small cell lung and breast cancer. Four of those trials fulfilled their patient quotas and completed patient enrollment during the fourth quarter of 2009.

Telomerase inhibition by imetelstat was first demonstrated in humans in the Phase I single agent trial in patients with relapsed or refractory multiple myeloma. The early results from this trial were presented at the 2008 American Society of Hematology annual meeting. Importantly, clinical data from the ongoing trial showed that imetelstat inhibits telomerase both in the bulk myeloma fraction as well as the stem cell-containing fraction in patients' bone marrow.

Preclinical studies have also demonstrated that imetelstat can inhibit growth of cancer stem cells from multiple tumor types. These data were presented during the April 2009 Annual Meeting of the American Association for Cancer Research. Cancer stem cells capable of clonogenic growth may play an important role in the regrowth of tumors after initial reduction by standard treatments. Preclinical study results showed that imetelstat inhibits in vitro cell colony growth of both primary patient samples and subpopulations from cell lines containing or enriched for cancer stem cells from myeloma, melanoma, breast, pancreatic, pediatric glioma, neuroblastoma, prostate, lung and glioblastoma tumor types. These subpopulations typically show resistance to several conventional chemotherapeutic agents.

At the November 2009 AACR-NCI-EORTC International Conference on Molecular Targets and Cancer Therapeutics, we presented interim data on the ongoing trial of imetelstat in patients with relapsed or refractory solid cancers. These data showed that with a modified dosing schedule we are achieving exposures to imetelstat that exceed the levels that have been associated with inhibiting tumor growth in several models of human cancers.

We have met our main objectives for Phase I of assessing the safety, tolerability, pharmacokinetics and pharmacodynamics of imetelstat. We have established our single agent Phase II dose and dosing schedule and are planning to advance the program to Phase II trials in 2010 in four different malignancies.

Telomerase Therapeutic Vaccine (GRNVAC1). The goal of therapeutic cancer vaccines is to "teach" the patient's own immune system to attack cancer cells while sparing other cells. This is done by repeatedly exposing the immune system to a substance (antigen) that is specific to cancer cells in a way that subsequently induces an immune response to any cells that express that antigen on their surface. We believe that the characteristics of telomerase make it an ideal antigen for cancer vaccines.

GRNVAC1 is an autologous product consisting of mature dendritic cells (the body's most powerful antigen-presenting cells) pulsed with RNA for the protein component of human telomerase (hTERT) and a portion of a lysosomal targeting signal (LAMP). GRNVAC1 is injected into the patient's skin; from there the dendritic cells travel to the lymph nodes and instruct cytotoxic T-cells to kill tumor cells that express telomerase on their surface.

The first clinical study of GRNVAC1 was conducted at Duke University Medical Center. Data from this Phase I clinical trial in prostate cancer patients were published in the Journal of Immunology in March 2005. Several small additional Phase I/II trials, which concluded in 2006, in patients with

prostate cancer, hematologic malignancies and renal cell carcinoma were performed at Duke in order to optimize the vaccination process. As a result of positive data from these studies, we brought the vaccine manufacturing process in-house for further optimization and transferred it to a contract manufacturer.

The Geron-sponsored clinical study of GRNVAC1 is being conducted at six U.S. medical centers. This Phase II clinical trial is using a prime-boost vaccination protocol in patients with acute myelogenous leukemia (AML) in complete clinical remission and examines the safety and feasibility of a prime-boost vaccination regimen to extend the duration of telomerase immunity. Also we are evaluating the immune response to GRNVAC1 and exploring the effects of vaccination on minimal residual disease and relapse rates. This trial completed patient enrollment in December 2009.

In the AML Phase II trial, patients enter the study in their first or second complete remission. Prior to or shortly after completing consolidation chemotherapy, patients undergo leukapheresis to harvest normal peripheral blood mononuclear cells for vaccine manufacture. Patient mononuclear cells are differentiated in culture to immature dendritic cells, which are transfected with messenger RNA encoding hTERT and LAMP. Transfected dendritic cells are matured, aliquoted and cryopreserved. GRNVAC1 is released for patient dosing contingent on several product specifications including, identity of mature dendritic cells, confirmation of positive transfection with hTERT, number of viable cells per dose after thawing and product sterility. Patients are vaccinated weekly for six weeks, followed by a rest period of four weeks, and subsequent boost injections every other week for 12 weeks. Monthly extended boost injections are then administered until the vaccine product supply is depleted or the disease relapses.

Twenty patients in the study have received GRNVAC1 product. One patient relapsed prior to vaccination. GRNVAC1 was found to be safe and generally well tolerated over multiple vaccinations, including one patient who has received 28 serial vaccinations. Idiopathic thrombocytopenic purpura (grade 4) was reported in one patient. Other toxicities were mild to moderate, including rash or headache in 15-20% of patients.

At the December 2009 American Society of Hematology annual meeting we presented interim data from the Phase II study in patients with AML. At the time of the presentation, 14 out of 20 patients in the study remained in complete clinical remission (CR). Median duration of CR, including the patients who had relapsed, was 12 months. Six of the patients in CR were in the extended boost phase of vaccination and the duration of their remission since the start of vaccination ranged from four to 20 months. Four of these six patients are considered at a high risk of relapse as predicted by their cytogenetics or because they are in the second CR. Follow-up of the patients for an additional nine months is required in order to estimate the impact of vaccination on disease-free survival.

Expression of WT-1, as a marker of minimal residual disease, was sequentially analyzed by qPCR in 19 patients. The 14 patients who remain in CR were negative for WT-1, while four of five with clinical relapse were WT-1 positive. One patient was positive for WT-1 prior to vaccination with GRNVAC1 and became WT-1 negative during the course of vaccination.

Patient immune response to telomerase after vaccination with GRNVAC1 was evaluated using two methods: the delayed-type hypersensitivity (DTH) skin response and the ELISPOT assay to measure the presence of activated T-cells specific to hTERT. Positive overall immune responses were detected in 12 out of 20 patients. No correlation has yet emerged between positive immune response and patient remission status.

In 2004, we acquired rights from Argos Therapeutics, Inc. (formerly Merix) to commercialize the ex vivo dendritic cell processing technology used in the Duke clinical trials for telomerase and other defined tumor-specific antigens. We own the rights to the telomerase antigen and its use in therapeutic vaccines.

In 2006, we licensed rights from Immunomic Therapeutics, Inc. to the LAMP antigen targeting sequence for use in cancer vaccines. The LAMP sequence causes an antigen to which it is attached to be taken up by the lysosomal subcellular compartment of the cell. This has been shown to increase presentation on MHC class II molecules, which in turn, can produce greater CD4+ T-cell responses against the antigen and a more potent and longer lasting overall immune response.

In July 2005, we entered into a worldwide exclusive research, development and commercialization license agreement with Merck & Co., Inc. for cancer vaccines targeting telomerase by methods other than dendritic cell delivery. In December 2007, Merck filed an IND to initiate a clinical trial for their cancer vaccine candidate that targets telomerase. In 2008, Merck initiated a Phase I clinical trial of V934/V935, a non-dendritic cell-based cancer vaccine candidate targeting telomerase. The trial will assess the safety, tolerability and immunogenicity of the vaccine candidate in patients with solid tumors, including non-small cell lung cancer and prostate carcinoma. The trial has completed patient enrollment and boost vaccination and/or follow-up of patients is ongoing.

Cancer Diagnostics. Telomerase is a broadly applicable and highly specific marker for cancer because it has been detected in more than 30 human cancer types and in the great majority of cancer samples studied. We believe that the detection of telomerase may have significant clinical utility for cancer diagnosis, prognosis, monitoring and screening. Current cancer diagnostics apply only to a single or limited number of cancer types because they rely on molecules expressed only by particular cancer types. However, telomerase-based diagnostics could potentially address a broad range of cancers.

We have developed several proprietary assays for the detection of telomerase which are based on its activity or the presence of its RNA or protein components. The first-generation assay is the Telomeric Repeat Amplification Protocol (TRAP) assay which can be used to detect telomerase activity in human tissue or cells, including clinical samples. The second-generation assays detect the presence of hTR and hTERT in human tissues and body fluids. We own issued patents for the detection of telomerase activity and the components of telomerase, including patents for the TRAP assay and diagnostic methods based on telomerase detection. Currently, our licensees are selling 11 research-use-only kits that incorporate our technology.

In 2007, we granted a license to Sienna Cancer Diagnostics (Sienna), an Australian company, to develop and commercialize methods other than PCR (polymerase chain reaction) and ELISA (Enzyme-Linked ImmunoSorbent Assay) to detect telomerase for in vitro cancer diagnosis. Sienna's lead product in development is a non-invasive assay that utilizes Sienna's proprietary Telomerase Biosensor Technology (TBT) to detect telomerase activity in urine for the diagnosis of bladder cancer. In consideration for the license, we received an equity interest in Sienna and are entitled to receive royalties on future product sales.

Telomerase Activation

We are researching drug candidates to treat various degenerative diseases by the controlled activation of telomerase. Data published by us and others have indicated that cellular aging caused by shortening telomeres, which occurs in numerous tissues throughout the human body, causes or contributes to chronic degenerative diseases and conditions including bone and marrow diseases, pulmonary fibrosis, HIV/AIDS, liver disease, macular degeneration, cardiovascular diseases and impaired wound healing. Controlled activation of telomerase in normal cells can restore telomere length or slow the rate of loss, improve functional capacity and increase the proliferative lifespan of cells.

Our approach to the therapeutic use of telomerase activation has included both small molecule drug discovery and biological methods of restoring telomerase activity. We have applied proprietary gene transfer technologies, gene expression systems and small molecule screening technology to discover therapeutic agents to target, postpone and modulate the destructive genetic changes that occur in senescent cells.

Our majority-owned subsidiary based in Hong Kong, TA Therapeutics, Ltd. (TAT), was established to commercially develop products that utilize telomerase activator drugs to restore the regenerative and functional capacity of cells in various organ systems that have been impacted by senescence, injury or chronic disease. TAT is conducting preclinical research with small molecule development leads. Data from tissue culture studies showed that one such lead compound, TAT2, significantly activates telomerase and improves replicative capacity and function, including anti-viral activity in HIV-specific CD8+ T-cells from HIV/AIDS donors. The data were published in the Journal of Immunology in 2008. We own 75% of TAT and Biotechnology Research Corporation (BRC) owns 25%.

Human Embryonic Stem Cell Therapies

The two properties of hESCs, their immortality and pluripotency, enable the development of a potential new economic model for cell-based products and therapeutics, namely the development of products available "on demand." We have developed proprietary methods to grow, maintain, and scale the culture of undifferentiated hESCs that use feeder cell-free and serum-free media with chemically defined components. Moreover, we have developed scalable processes to differentiate these cells into therapeutically relevant cells. We have developed cryopreserved formulations of hESC-derived cells to enable our business model of delivering "on demand" cells for therapeutic use.

Under our collaboration with Corning Life Sciences, a division of Corning Incorporated, we are working together to develop synthetic growth surfaces to replace the biological surface coatings that are widely used today to grow hESCs. Together our teams have developed a synthetic peptide surface that can be manufactured into multiple culture vessel formats and directly supports the growth and differentiation of hESCs. Data on hESC culture and differentiation were presented by Corning at the 2009 World Stem Cell Summit held in September.

The following table briefly describes the hESC-derived product candidates being developed by us or our collaborators and the stage of development of these product candidates.

Product	Product Description	Application	Development Stage
GRNOPC1	Oligodendrocytes	Spinal Cord Injury	Phase I Trial *
GRNCM1	Cardiomyocytes	Heart Disease and Screening	Preclinical
GRNIC1	Islets	Type 1 Diabetes	Research
GRNCHND1	Chondrocytes	Osteoarthritis	Research
--	Hepatocytes	ADME Drug Screening	Research
GRNVAC2	Mature Dendritic Cells	Cancer Immunotherapy	Product Research
--	Immature Dendritic Cells	Immune Rejection	Research
--	Osteoblasts	Osteoporosis	Research

* In January 2009, we received clearance from the FDA to begin a clinical trial of GRNOPC1. The trial is currently on clinical hold by the FDA.

We believe we have a dominant patent position in the field of hESCs. We own or have licenses to intellectual property covering core inventions and enabling technologies in this field.

Oligodendrocyte Progenitor Cells for Spinal Cord Injury (GRNOPC1). The major neural cells of the central nervous system typically do not regenerate after injury. If a nerve cell is damaged due to disease or injury, there is no treatment at present to restore lost function. Patients worldwide suffer from injury to the nervous system or disorders associated with its degeneration. In the case of spinal cord injuries, patients are often left partly or wholly paralyzed because nerve and supporting cells in the spinal cord have been damaged and cannot regenerate. Such patients are permanently disabled, often institutionalized and may require life support.

Embryonic stem cell-derived neural cells have been used by researchers to treat nervous system disorders in animal models. In the case of spinal cord injuries, neural cells derived from animal embryonic stem cells and injected into the spinal cord injury site produced significant recovery of the animal's ability to move and bear weight.

To apply those observations to humans, we have derived oligodendrocyte progenitor cells (GRNOPC1) from hESCs. Oligodendrocytes are naturally occurring cells in the nervous system that have several functions. Oligodendrocytes produce myelin (insulating layers of cell membrane) that wraps around the axons of neurons to enable them to conduct electrical impulses. Myelin enables efficient conduction of nerve impulses in the same manner as insulation prevents short circuits in an electrical wire. Without myelin, many of the nerves in the brain and spinal cord cannot function properly. Oligodendrocytes also produce neurotrophic factors (biologicals that enhance neuronal survival and function) to support the maintenance of nerve cells. Oligodendrocytes are lost in spinal cord injury, resulting in myelin and neuronal loss that cause paralysis in many patients.

In our collaboration with researchers at the University of California, Irvine, we have shown in animal models that GRNOPC1 can improve functional locomotor behavior after implantation in the injury site seven days after injury. Histological analysis also provided evidence for the engraftment and function of these cells. These data were first published in May 2005 in the Journal of Neuroscience. In additional studies, the lesion site of animals nine months after injury and subsequent injection of GRNOPC1 was observed to be essentially filled with GRNOPC1 and myelinated rat axons crossing the lesion. These animal observations serve as the rationale for the use of GRNOPC1 in treating spinal cord injuries in humans.

We have developed a functional cryopreserved formulation of GRNOPC1 for use in clinical trials and have initiated current Good Manufacturing Practices (cGMP) production of GRNOPC1 in our qualified manufacturing facilities.

We completed extensive animal toxicology testing that included 24 separate studies in rats and mice requiring more than five billion GRNOPC1 cells. In those preclinical IND-enabling studies, we had observed the occurrence of occasional epithelial cysts in animals transplanted with GRNOPC1. These cysts were non-proliferative, confined to the injury site, smaller than the injury cavity and were not associated with adverse effects on the animals. Data from these animal and in vivo studies were included in the IND filed with the FDA.

In January 2009, we received clearance from the FDA to begin the world's first human clinical trial of an embryonic stem cell-based therapy using GRNOPC1 for acute spinal cord injury. The study is a Phase I multi-center trial designed to assess the safety and tolerability of GRNOPC1 in patients with complete ASIA (American Spinal Injury Association) grade A thoracic spinal cord injuries.

Since clearance of the IND, Geron has been performing a series of preclinical studies to expand the clinical program (preclinical expansion studies) for spinal cord injury beyond patients with complete thoracic injuries. Our goal is to test the safety and utility of GRNOPC1 in patients with complete and incomplete (less severe) injuries in both thoracic and cervical regions.

In one of the preclinical expansion studies, a higher frequency of animals developed cysts in the injury site than had been seen in numerous foregoing preclinical studies with clinical grade GRNOPC1, including the IND-enabling studies. We notified the FDA of the findings from this animal study and the trial was put on clinical hold in August 2009. As part of ongoing work to optimize GRNOPC1 manufacturing and product release, we developed new candidate markers and assays. Data from studies using the new markers were submitted to the FDA.

Following discussions with the FDA, we have agreed to complete a confirmatory preclinical study using GRNOPC1 that has been characterized by the new markers and assays. As part of the ongoing plan to advance clinical development to cervical patients, we had already initiated that preclinical study in an animal model of cervical injury. In our discussions, the FDA has advised us that it concurs with our assessment that positive data from this study can be used to support both release of the clinical hold related to our IND and expansion of the clinical trial to cervical patients.

In addition to spinal cord injury, GRNOPC1 may have therapeutic utility for other central nervous system indications, such as Alzheimer's disease, stroke and multiple sclerosis. We have established two separate collaborations with academic groups to test GRNOPC1 in models of Alzheimer's disease and multiple sclerosis.

Cardiomyocytes for Heart Disease (GRNCM1). Heart muscle cells (cardiomyocytes) do not regenerate during adult life. When heart muscle is damaged by injury or decreased blood flow, functional contracting heart muscle is replaced with nonfunctional scar tissue. Congestive heart failure, a common consequence of heart muscle or valve damage, affects approximately 5.8 million people in the United States according to the American Heart Association and this year, it is estimated that about 1.3 million people will have a heart attack, which is the primary cause of heart muscle damage.

Heart disease can potentially be treated by using cardiomyocytes derived from hESCs. Researchers have demonstrated proof-of-concept of this approach in mice. Mouse embryonic stem cells have been used to derive mouse cardiomyocytes. When injected into the hearts of recipient adult mice, the cardiomyocytes repopulated the heart tissue and stably integrated into the muscle tissue of the adult

mouse heart. In human medicine, it is therefore possible that hESC-derived cardiomyocytes could be developed for cellular transplantation therapy in humans suffering from congestive heart failure and the damage caused by heart attacks.

We have derived human cardiomyocytes from hESCs (GRNCM1) using a process that can be scaled for clinical production. GRNCM1 has normal contractile function and responds appropriately to cardiac drugs. We have transplanted these cells into animal models of myocardial infarction in which the cells engraft and improve the left ventricular function compared to those animals receiving injections without cells. These results were published in Nature Biotechnology in August 2007. We are now conducting preclinical large animal studies of GRNCM1.

Islet Cells for Diabetes (GRNIC1). According to the Centers for Disease Control, it is estimated that there are as many as 1.2 million Americans suffering from Type 1 Diabetes (Insulin Dependent Diabetes Mellitus). Normally, certain cells in the pancreas, called the islet ß cells, produce insulin which promotes the uptake of the sugar glucose by cells in the human body. Degeneration of pancreatic islet ß cells results in a lack of insulin in the bloodstream which results in diabetes. Although diabetics can be treated with daily injections of insulin, these injections enable only intermittent glucose control. As a result, patients with diabetes suffer chronic degeneration of many organs, including the eye, kidney, nerves and blood vessels. In some cases, patients with diabetes have received islet ß cells derived from cadavers. However, poor availability of suitable sources for islet ß cell transplantation make this approach impractical as a treatment for the growing numbers of individuals suffering from diabetes.

We have derived insulin-producing cells (i.e. similar to pancreatic islet ß cells) from hESCs. The original derivation method and characterization of our hESC-derived islets was published in Stem Cells in August 2007. In 2008, we published data showing the successful engraftment of these cells in diabetic mice. After transplantation, the engrafted cells continued to express important pancreatic islet proteins, responded to high levels of glucose in the blood and extended the survival of recipient animals.

We have recently modified our differentiation protocols for more robust generation of pancreatic endoderm and improved yield of islet cells from hESCs. Preliminary data show that the new protocol generates hESC-derived islet clusters with improved insulin-producing properties in vitro, and detailed characterization is underway. We are also testing in vivo function.

Chondrocytes for Osteoarthritis (GRNCHND1). Osteoarthritis, or Degenerative Joint Disease, is an extremely common condition characterized by degradation of cartilage in joints, often accompanied by bone remodeling and bone overgrowth at the affected joints. According to the Arthritis Foundation, the disease affects an estimated 27 million adults in the United States, mostly after age 45. The disease has many causes, but the end result is a structural degradation of joint cartilage and a failure of chondrocytes (cartilage-forming cells) to repair the degraded cartilage collagen matrix. Our collaborators have derived chondrocytes from hESCs. Transplantation studies conducted in rodent models of an articular cartilage defect show good engraftment and repair of the defect that integrates well with host cartilage. Our collaborators intend to initiate large animal studies in 2010.

Dendritic Cells for Cancer Immunotherapy and to Enable Therapeutic Graft Acceptance. The hematopoietic system (the circulating cells of blood) is one of the tissues of the human body that can replenish itself throughout life. One of the cell types produced by the hematopoietic system is the dendritic cell. Dendritic cells, depending on their type, can either induce or downmodulate immune responses. Therefore, dendritic cells derived from hESCs can be used for two purposes: (i) to upregulate immune responses to particular antigens such as telomerase for cancer immunotherapy applications; and (ii) to prevent rejection of hESC-derived therapeutic grafts.

In 2006, we entered into a worldwide exclusive license and collaboration agreement with the University of Oxford to produce dendritic cells from hESCs. The scalable production of dendritic cells from hESCs could serve as an alternative to isolating dendritic cells from each patient, and possibly as a broadly useful vaccine delivery vehicle. In another form, dendritic cells may act to block an immune response against an antigen by teaching the immune system not to attack it – a process known as “tolerizing” the individual to that antigen. Since the same pluripotent hESC line could be used to generate both tolerizing dendritic cells and therapeutic cells, co-administration of these two cell populations could potentially circumvent immune rejection without the need for immunosuppressive drugs.

With our collaborators in Oxford, we have demonstrated that dendritic cells scalably manufactured from hESCs exhibit the normal functions of naturally occurring human dendritic cells found in the bloodstream. The data, published in Regenerative Medicine in July 2009, showed that immature hESC-derived dendritic cells are able to take up, process and present antigens, and then, following maturation in the manufacturing process, are able to migrate, produce pro-inflammatory cytokines and induce specific immune responses to both tumor and viral antigens in vitro.

Osteoblasts for Osteoporosis and Non-Union Bone Fractures. Osteoporosis, or loss of bone density, is a common condition associated with aging and hormonal changes in post-menopausal women, causing skeletal deformities, back pain and loss of height. According to the National Osteoporosis Foundation, the disease caused over 2.0 million fractures in the United States alone in 2005 and these fractures often occur after minimal trauma and if severe, as in hip fracture, carry mortality rates as high as 24% for patients age 50 and over. Nearly one in five hip fracture patients ends up in a nursing home. Total health care costs for osteoporosis and its complications are estimated at $18 billion per year in the United States.

The primary cause of the disease is metabolic bone loss (mediated by osteoclasts–cells which resorb bone) that is incompletely compensated by new bone formation (mediated by osteoblasts–cells which form new bone). Osteoblast activity declines over the human lifespan and fails to keep pace with the increasing activity of osteoclasts, resulting in progressive loss of bone density leading to fracture, pain and deformity.

Our collaborators have made osteoblasts from hESCs and conducted early tests in animals. Continued development of this cell type includes further testing to confirm cell engraftment and enhancement of derivation protocols to improve production yields.

Products for Research and Development

Immortalized Cells for Research. Scientists study specific cells from targeted tissues in order to understand their biological function. For these studies, cells are usually isolated from tissue and maintained in culture. The progressive changes in biological activity, morphology and proliferation as a result of normal cell aging in tissue culture potentially limit the utility of these cells in serial experiments and long-term research. Because of these limitations, most research laboratories utilize transformed cell lines for their studies. Cells can be transformed by using viruses which ultimately cause the cells to grow indefinitely in culture. However, such immortalized cell lines have abnormal characteristics compared to non-transformed cells. For this reason, they are not good models of normal tissue in the human body.

Telomerase-immortalized cells may be ideal for use in biological research because these cells proliferate indefinitely and function in culture in the same manner as the normal, mortal cells from which they were derived. Moreover, telomerase-immortalized cells can function in the body to form normal tissue and their capacity to differentiate into mature tissue is maintained. The ability of these cells to maintain normal physical and biological characteristics while retaining proliferative capacity allows them to be a constant source of cells for repeat and long-term studies of the function of cells both in culture and in the body. Telomerase-immortalized cells can be used to study any of the normal biological pathways in cells and can be used to screen for factors which influence the appropriate function of those cells. Moreover, cells taken from diseased tissues which are then telomerase-immortalized in culture can be used to explore the mechanism of the disease process and to develop interventions to prevent or treat that disease.

Through our licensees, we make telomerase-immortalized cell lines commercially available to the research market and to companies for basic research and for use in drug discovery and biologics production applications. We have granted royalty-bearing licenses to the American Type Culture Collection and Lonza Walkersville, Inc. (formerly Cambrex BioSciences) under which these organizations produce and sell telomerase-immortalized cells for both academic research and commercial drug discovery. We have also licensed the telomerase gene to a number of pharmaceutical and biotechnology companies for use in their internal research programs.

hESC-Derived Cells for Drug Discovery, Development and Toxicology. Three of the major hurdles of pharmaceutical drug development are: (i) identifying compounds with activity in diseased tissue; (ii) understanding the metabolism and biodistribution of the compound; and (iii) determining the potential

toxic side effects of the compound. Undesirable activity of a compound being evaluated as a drug candidate in any one of these areas can impact the development and commercialization of the drug. The earlier in development that a compound is found to have undesirable characteristics, the faster these characteristics can be potentially corrected. This potentially translates into reduced costs and time in drug development, and less harmful patient exposure in clinical trials.

While Geron's focus is on the development of hESC-derived cells for therapeutic application, each of the cell types we are developing could also be useful in drug discovery applications. In June 2009, we entered into a global exclusive license and alliance agreement with GE Healthcare UK Limited (GE Healthcare) to develop and commercialize cellular assay products derived from hESCs for use in drug discovery, development and toxicity screening.

Two particularly important cell types for use in in vitro cell-based assays for metabolism studies and toxicity screening are hepatocytes (liver cells) and cardiomyocytes (heart muscle cells).

Hepatocytes are responsible for metabolizing most compounds and can therefore be used to predict how drugs are metabolized, how they might interact with each other in the body, and to what extent they may be toxic to the liver. Another key step in drug development is to understand whether or not a drug will interrupt the normal function of cardiomyocytes in the heart. Cardiotoxicity and hepatotoxicity are the principal reasons clinical trials have been halted and approved drugs have been withdrawn from market.

Currently, animal models, primary human tissue and cell lines are used to assess drug metabolism and toxicities. However, these systems have certain limitations. Animal models have an important role in drug metabolism and toxicity studies, but they are not fully reliable predictors of human responses because of basic physiological differences between species. It is not uncommon for the development of a drug to be halted during clinical trials because animal systems did not predict the drug's metabolism or toxicity in humans. A humanin vitro system commonly used is fresh primary human liver tissue and cells, but access is very limited and the tissue can be variable depending on the donor or the methods used in processing or culturing the samples. Transformed human cell lines have been generated to address supply or variability, but the lines available today do not have the same attributes as their normal counterparts in the body. For example, human hepatocytes must be transformed (genetically altered) in order to maintain their proliferative capacity in culture, and cell lines used in cardiotoxicity studies are often non-cardiac cells modified to express particular ion channels and thus do not reflect the normal physiology of a cardiomyocyte.

In contrast, fully functional cells manufactured in bulk from hESCs could be a reliable, uniform and predictive new tool for pharmaceutical companies to perform in vitro metabolism, biodistribution, drug-drug interaction and toxicity testing of drug development candidates.

There is active interest in the development of predictive, robust and cost-effective in vitro assays from stem cells for drug research and development and it is expected that the pharmaceutical industry will embrace cell-based assays derived from hESCs when they become available. It has been reported that clinical safety and toxicology account for approximately 30% of drug attrition in the clinic. It is also important to highlight the health impact and possible risk to patients when toxicities are not detected early in development. The FDA has called for new and more predictive tools for early drug safety studies and may encourage widespread adoption of effective hESC-derived cellular assay products.

The first product being developed under the Geron-GE Healthcare alliance is human cardiomyocytes derived from hESCs. hESC-derived cardiomyocytes exhibit the normal electrophysiological function of human ventricular myocytes and respond appropriately when exposed to cardiac drugs, including drugs that block hERG channels. Robust sodium and calcium currents with the expected pharmacological responses are present and well-suited for screening assays. hESC-derived cardiomyocytes could, for the first time, allow the prediction of drug effects on the human heart.

Geron has been working with ChanTest, a leading provider of ion channel screening services, to confirm that hESC-derived cardiomyocytes display electrophysiological properties of normal human cardiomyocytes and contain the key voltage-gated ion channels operating in a normal cellular background.

Another cellular assay product to be developed under the Geron-GE Healthcare alliance is human hepatocytes derived from hESCs. hESC-derived hepatocytes show a number of metabolic functions of human hepatocytes, including expression of members of the cytochrome P450 family of enzymes, which are responsible for drug metabolism.

Nuclear Transfer: Agriculture/Biologics

Nuclear transfer is a method for producing animals (clones) whose nuclear genetic material is derived solely from a donor cell from an individual animal. In this process, the nucleus containing the chromosomal DNA is removed from the animal egg cell and subsequently replaced with a nucleus from a donor somatic (non-reproductive) cell. Fusion between the resulting egg cell and the donor somatic nucleus results in a new cell which gains a complete set of chromosomes derived entirely from the donor nucleus. Mitochondrial DNA, providing some of the genes for energy production, resides outside the nucleus and is provided by the egg. After a brief culture period that enables the reconstituted egg cell to initiate embryonic development, the early embryo is implanted into the uterus of a female animal, where it can fully develop and result in the live birth of a cloned offspring animal. The offspring is essentially a genetic clone of (genetically identical to) the animal from which the donor nucleus was obtained.

In early 1997, Dr. Ian Wilmut and his colleagues at the Roslin Institute were the first to demonstrate, with the birth of Dolly the sheep, that the nucleus of an adult cell can be transferred to an enucleated egg to create cloned offspring. The birth of Dolly was significant because it demonstrated the ability of egg cell cytoplasm, the portion of the egg outside of the nucleus, to reprogram an adult somatic nucleus. Reprogramming enables the adult somatic cell nucleus to express all the genes required for the full embryonic development of the animal. In addition to sheep, the technique has been used to clone mice, rats, goats, cattle, rabbits, cats, dogs and pigs from donor cells and enucleated eggs from each respective animal species. In 1999, we acquired Roslin Bio-Med Ltd., a commercial subsidiary of the Roslin Institute, and an exclusive license to the use of nuclear transfer technology for multiple applications in animal and human biology.

Agriculture. Our nuclear transfer technology can be used for applications in agriculture that could improve livestock by producing unlimited numbers of genetically identical animals with superior commercial qualities. Such applications can be extended to major agricultural sectors, such as beef, dairy, pork and poultry, to provide large numbers of animals with superior characteristics of disease resistance, longevity, growth rate or product quality. In January 2008, the FDA issued its final risk assessment concluding that meat and milk from healthy cloned animals and their offspring are as safe as those from ordinary animals, effectively removing the last U.S. regulatory barrier to the marketing of meat and milk from cloned cattle, pigs and goats.

Transgenic Animals. Our nuclear transfer technology can be applied to clone animals that have been genetically engineered to produce proteins for human therapeutic or industrial use. For example, herds which carry the genes to make human antibodies could be cloned, thereby allowing for the large-scale production of therapeutic antibodies or vaccines.

In previous years, we granted a number of licenses to our nuclear transfer technology to companies who are utilizing it for applications in agriculture and production of biologicals. In 2005, following successes in three patent interference proceedings, we formed a joint venture company, Start Licensing, Inc. (Start), with Exeter Life Sciences, Inc. (Exeter). In August 2008, Start merged with ViaGen, Inc. (ViaGen), a subsidiary of Exeter. The merger of Start and ViaGen combined the full breadth of intellectual property rights to nuclear transfer cloning technology, including that developed at the Roslin Institute for cloning Dolly the sheep, with in-house state-of-the-art breeding services and expertise in advanced reproductive technologies, particularly in cloning animals, to provide a one-stop licensing and operating company. We have retained all rights for use of nuclear transfer technology in human cells. We own a 28% equity interest in ViaGen.

Patents and Proprietary Technology

A broad intellectual property portfolio of issued patents and pending patent applications supports our internal product development, collaborations and licensing relationships. It is also the asset on which our out-licensing activities are based. As of December 31, 2009, we own or have licensed 184 issued or allowed United States patents, 367 granted or accepted foreign patents and 341 patent applications that are pending around the world.

Our policy is to seek appropriate patent protection for inventions in our principal technology platforms — telomerase and human embryonic stem cells — as well as ancillary technologies that support these platforms or otherwise provide a competitive advantage or commercial benefit to us. We achieve this by filing patent applications for discoveries made by our scientists, as well as those that we make in conjunction with our scientific collaborators and strategic partners. Typically, although not always, we file patent applications in the United States and in major markets around the world. We determine the jurisdictions in which to file a particular patent family based on factors including: the technology involved; projected market opportunity for our products; and other relevant commercial activities in the jurisdiction in question. A typical patent application family includes applications in the United States, Canada, Europe, Japan, China, India, Australia and South Korea. In addition, where appropriate, we obtain licenses from other organizations to patent filings that may be useful in advancing our scientific and product development programs or proprietary position in a technology. The jurisdictions in which those in-licensed patents are filed may have already been selected by the licensing organization from which we obtain the rights; often they are filed in fewer countries than our internal filings.

The development of biotechnology products, including ours, typically includes the early development of a platform technology base, followed by rounds of increasingly focused innovation around a product opportunity, including identification and definition of a specific product candidate, manufacturing processes, product formulation and administration methods. The result of this is that biotechnology products are often protected by several families of patent filings that are filed at different times during product development and cover different aspects of the product. Consequently, earlier filed, broad technology platform patents will usually expire ahead of patents covering later developments such as product formulations, so that patent expirations on a product may span several years. Patent coverage may also vary from country to country based on the scope of available patent protection. There are also limited opportunities to obtain extension of patent coverage for a product in certain countries, which add further complexity to the determination of patent life.

With the foregoing in mind, below we provide an overview of the patent protection for our major programs. It is important to note that all of our product candidates are still under development, so further innovation and associated patent filings may provide additional patent coverage. Furthermore, the patent expiration ranges given are for the U.S. only and only for patent families where patents have already issued (i.e., they do not account for recently filed patent families where the expiration date of patents yet to issue may be after the last expiration date given here). The stated expiration dates also do not account for potential patent extensions that may be available. The information provided here should be reviewed in the context of the section entitled “Risks Related to Protecting Our Intellectual Property” that begins on page 24.

We endeavor to monitor worldwide patent filings by third parties that are relevant to our business. Based on this monitoring, we may determine that an action is appropriate to protect our business interests. Such actions may include negotiating patent licenses where appropriate, filing oppositions or reexaminations against a patent, or filing a request for the declaration of an interference with a U.S. patent application or issued patent. Similarly, third parties may take similar actions against our patents. By way of example, in 2005 we were involved in interference proceedings that we had initiated at the U.S. Patent and Trademark Office involving patents and patent applications for nuclear transfer technology; judgments in those actions were entered in our favor. In 2009, we initiated a patent interference proceeding involving patent rights relating to the production of endoderm cells from hESCs, and that proceeding is currently ongoing. We are currently also involved in patent opposition proceedings before the European Patent Office and the Australian Patent Office both as the party holding the opposed patent, and in opposition to patents granted or proposed to be granted to another entity.

Telomerase

Our telomerase platform is the mainstay of our oncology program and it serves as the basis for other product opportunities. The table on page 4 describes the telomerase products currently in development by Geron and our partners. As of December 31, 2009, our patent portfolio includes 124 issued or allowed U.S. patents, 216 granted or accepted foreign patents and 114 patent applications pending worldwide relating to our telomerase-based product opportunities. These include patents covering the cloned genes that encode the RNA component (hTR) and the catalytic protein component (hTERT) of human telomerase. Related issued and pending patents cover cells that are immortalized by expression of recombinant hTERT, cancer diagnostics based on detecting the expression of telomerase in cancer cells, and telomerase inhibitors for use as cancer therapeutics. We also own patents covering novel amidate oligonucleotide chemistry that we employ in our telomerase inhibitor program, and methods of manufacturing these oligonucleotides.

Imetelstat (GRN163L): Our patent rights relevant to imetelstat include those covering the nucleic acid sequence of hTR on which imetelstat is based; amidate oligonucleotide chemistry employed in imetelstat; and manufacturing processes for the drug. These patents are wholly owned by Geron. The expiration dates on these patents range from 2014 to 2025.

GRNVAC1: Our patent rights relevant to GRNVAC1 include those covering hTERT; RNA-pulsed dendritic cells; and the LAMP sequence. We co-own the hTERT patents with the University of Colorado and hold an exclusive license to the Colorado rights. The patents covering the RNA-pulsed dendritic cell technology are owned by Duke University, and we hold co-exclusive license right to those patents from Argos, Inc. The patents covering the LAMP sequence are owned by Johns Hopkins University and we hold an exclusive license under those patents to use the LAMP sequence in conjunction with telomerase from Immunomic Therapeutics, Inc. The expiration dates on these patents range from 2014 to 2020.

Merck V934 / V935: We have licensed our hTERT patent rights to Merck for the development of this product. The relevant issued patents will expire in 2016.

Human Embryonic Stem Cells

Our human embryonic stem cell (hESC) platform serves as the basis for the development of product candidates that are listed in the table on page 8. As of December 31, 2009, our patent portfolio includes 39 issued or allowed United States patents, 100 granted or accepted foreign patents and 213 patent applications pending worldwide relating to our hESC-based product opportunities. This portfolio includes: foundational hESC patents licensed to us (exclusively and non-exclusively, varying by field of use) from the University of Wisconsin-Madison, or WARF; and patent families exclusively licensed to us by the University of California, the University of Oxford and the Robarts Research Institute of the University of Western Ontario. However, the majority of patent filings in this portfolio is owned by Geron and covers technologies that we have developed to enable scalable manufacturing of various cell types from hESCs.

By way of example, our hESC portfolio includes patents and patent applications covering technologies that we believe will facilitate the commercial-scale production of hESCs, such as methods for growing the cells without the need for cell feeder layers, and novel synthetic growth surfaces that we are developing in conjunction with Corning Life Sciences. We also own or have licensed patent rights covering cell types that can be made from hESCs, including hepatocytes (liver cells), cardiomyocytes (heart muscle cells), neural cells (nerve cells, including dopaminergic neurons and oligodendrocytes), chondrocytes (cartilage cells), pancreatic islet ß cells, osteoblasts (bone cells), hematopoietic cells (blood-forming cells) and dendritic cells.

GRNOPC1: Our patent rights relevant to GRNOPC1 include rights licensed from WARF and the University of California (both licensed exclusively for this product candidate), and various Geron-owned patent families covering the growth of hESCs and their differentiation into neural cells. The expiration dates on these patents range from 2015 to 2024.

GRNCM1: Our patent rights relevant to GRNCM1 include rights licensed from WARF (licensed exclusively for this product candidate), and various Geron-owned patent families covering the growth of hESCs and their differentiation into cardiomyocytes. The expiration dates on these patents range from 2015 to 2025.

GRNIC1: Our patent rights relevant to GRNIC1 include rights licensed from WARF (licensed exclusively for this product candidate), and various Geron-owned patent families covering the growth of hESCs and their differentiation into pancreatic islet cells. The expiration dates on these patents range from 2015 to 2023.

GRNVAC2: Our patent rights relevant to GRNVAC2 include rights licensed from WARF (licensed non-exclusively for this product candidate) and the University of Oxford and the Robarts Research Institute of the University of Western Ontario (both licensed exclusively for this product candidate), and various Geron-owned patent families covering the growth of hESCs and their differentiation into dendritic cells. The expiration dates on these patents range from 2015 to 2022.

GE Healthcare Product Candidates (Various): Our alliance agreement with GE Healthcare includes a license grant from Geron to GE Healthcare under Geron's hESC patents to commercialize any hESC-derived cell type for drug discovery applications. GE Healthcare plans to focus its initial product development efforts on hepatocytes and cardiomyocytes. Our patents on these particular cell types expire in the ranges of 2020 to 2023 and 2025 to 2026, respectively.

Nuclear Transfer

ViaGen, Inc.: A third technology platform, nuclear transfer, is protected by the patent rights that we purchased in 1999 with the acquisition of the U.K. company Roslin Bio-Med, which we now operate as Geron Bio-Med. We license these rights to ViaGen, Inc., in which we hold a 28% equity stake, for use in non-human animal cloning applications. As of December 31, 2009, 21 United States patents have now been issued or been allowed, and 51 foreign patents have been granted or accepted. In addition, we have 14 pending patent applications worldwide relating to nuclear transfer. The expiration dates of these patents are in 2016.

Government Regulation

Regulation by governmental authorities in the United States and other countries is a significant factor in the development, manufacture and marketing of our proposed products and in our ongoing research and product development activities. The nature and extent to which such regulation applies to us will vary depending on the nature of any products which may be developed by us. We anticipate that many, if not all, of our proposed products will require regulatory approval by governmental agencies prior to commercialization. In particular, human therapeutic products are subject to rigorous preclinical and clinical testing and other approval procedures of the FDA and similar regulatory authorities in European and other countries. Various governmental statutes and regulations also govern or influence testing, manufacturing, safety, labeling, storage and recordkeeping related to such products and their marketing. The process of obtaining these approvals and the subsequent compliance with appropriate statutes and regulations require the expenditure of substantial time and money, and there can be no guarantee that approvals will be granted.

FDA Approval Process

Prior to commencement of clinical studies involving humans, preclinical testing of new pharmaceutical products is generally conducted on animals in the laboratory to evaluate the potential efficacy and safety of the product candidate. The results of these studies are submitted to the FDA as part of an IND application, which must become effective before clinical testing in humans can begin. Typically, human clinical evaluation involves a time-consuming and costly three-phase process. In Phase I, clinical trials are conducted with a small number of people to assess safety and to evaluate the pattern of drug distribution and metabolism within the body. In Phase II, clinical trials are conducted with groups of patients afflicted with a specific disease in order to determine preliminary efficacy, optimal dosages and expanded evidence of safety. (In some cases, an initial trial is conducted in diseased patients to assess both preliminary efficacy and preliminary safety and patterns of drug metabolism and distribution, in which case it is referred to as a Phase I/II trial.) In Phase III, large-scale, multi-center, comparative trials are conducted with patients afflicted with a target disease in order to provide enough data to demonstrate the efficacy and safety required by the FDA. The FDA closely monitors the progress of each of the three phases of clinical testing and may, at its discretion, re-evaluate, alter, suspend, or terminate the testing

based upon the data which have been accumulated to that point and its assessment of the risk/benefit ratio to the patient. All adverse events must be reported to the FDA. Monitoring of all aspects of the study to minimize risks is a continuing process.

The results of the preclinical and clinical testing on non-biologic drugs and certain diagnostic drugs are submitted to the FDA in the form of a New Drug Application (NDA) for approval prior to commencement of commercial sales. In the case of vaccines or gene and cell therapies, the results of clinical trials are submitted as a Biologics License Application (BLA). In responding to an NDA/BLA submission, the FDA may grant marketing approval, may request additional information, may deny the application if it determines that the application does not provide an adequate basis for approval, and may also refuse to review an application that has been submitted if it determines that the application does not provide an adequate basis for filing and review. There can be no assurance that approvals will be granted on a timely basis, if at all, for any of our proposed products.

European and Other Regulatory Approval

Whether or not FDA approval has been obtained, approval of a product by comparable regulatory authorities in Europe and other countries will be necessary prior to commencement of marketing the product in such countries. The regulatory authorities in each country may impose their own requirements and may refuse to grant an approval, or may require additional data before granting it, even though the relevant product has been approved by the FDA or another authority. As with the FDA, the regulatory authorities in the European Union (EU) and other developed countries have lengthy approval processes for pharmaceutical products. The process for gaining approval in particular countries varies, but generally follows a similar sequence to that described for FDA approval. In Europe, the European Committee for Proprietary Medicinal Products provides a mechanism for EU-member states to exchange information on all aspects of product licensing. The EU has established a European agency for the evaluation of medical products, with both a centralized community procedure and a decentralized procedure, the latter being based on the principle of licensing within one member country followed by mutual recognition by the other member countries.

Other Regulations

We are also subject to various U.S. federal, state, local and international laws, regulations and recommendations relating to safe working conditions, laboratory and manufacturing practices and the use and disposal of hazardous or potentially hazardous substances, including radioactive compounds and infectious disease agents, used in connection with our business. We cannot accurately predict the extent of government regulation which might result from future legislation or administrative action.

Scientific Consultants

We have consulting agreements with a number of leading academic scientists and clinicians. These individuals serve as key consultants or as members of “clinical focus group panels” with respect to our product development programs and strategies. We use consultants to provide us with expert advice and consultation on our scientific programs and strategies, as well as on the ethical aspects of our work. They also serve as important contacts for us throughout the broader scientific community. They are distinguished scientists and clinicians with expertise in numerous scientific and medical fields, including embryonic stem cells, nuclear transfer and telomere and telomerase biology, developmental biology, cellular biology, molecular biology, oncology, spinal cord injury, heart disease and diabetes.

We retain each consultant according to the terms of a consulting agreement. Under such agreements, we pay them a consulting fee and reimburse them for out-of-pocket expenses incurred in performing their services for us. In addition, some consultants hold options to purchase our common stock and restricted stock awards, subject to the vesting requirements contained in the consulting agreements. Our consultants may be employed by institutions other than ours, and therefore may have commitments to, or consulting or advisory agreements with, other entities or academic institutions that may limit their availability to us.

Executive Officers of the Company

The following table sets forth certain information with respect to our executive officers:

Name	Age	Position
Thomas B. Okarma, Ph.D., M.D.	64	President, Chief Executive Officer and Director
David L. Greenwood	58	Executive Vice President, Chief Financial Officer, Treasurer and Secretary
Stephen M. Kelsey, M.D., F.R.C.P., F.R.C.Path.	49	Executive Vice President, Chief Medical Officer, Oncology
David J. Earp, J.D., Ph.D.	45	Senior Vice President, Business Development and Chief Patent Counsel
Melissa A. Kelly Behrs	46	Senior Vice President, Therapeutic Development, Oncology
Jane S. Lebkowski, Ph.D.	54	Senior Vice President, Chief Scientific Officer, Regenerative Medicine
Katharine E. Spink, Ph.D.	35	Vice President Operations, Regenerative Medicine Programs

Thomas B. Okarma, Ph.D., M.D., has served as our President, Chief Executive Officer and a member of our Board of Directors since July 1999. He is also a director of Geron Bio-Med Limited, a United Kingdom company and Geron's wholly-owned subsidiary, and TA Therapeutics, Ltd., a Hong Kong company and Geron's majority-owned subsidiary. From May 1998 until July 1999, Dr. Okarma was Vice President of Research and Development. From December 1997 until May 1998, Dr. Okarma was Vice President of Cell Therapies. Dr. Okarma currently serves on the Board of BIO and was Chairman of the Board of Overseers of Dartmouth Medical School from 2000 to 2007. In 1985, Dr. Okarma founded Applied Immune Sciences, Inc. and served initially as Vice President of Research and Development and then as chairman, chief executive officer and a director of Applied Immune Sciences, until 1995 when it was acquired by Rhone-Poulenc Rorer. Dr. Okarma was a Senior Vice President at Rhone-Poulenc Rorer from the time of the acquisition of Applied Immune Sciences until December 1996. From 1980 to 1992, Dr. Okarma was a member of the faculty of the Department of Medicine at Stanford University School of Medicine. Dr. Okarma holds a A.B. from Dartmouth College, a M.D. and Ph.D. from Stanford University and an executive M.B.A. from Stanford Graduate School of Business.

David L. Greenwood has served as our Chief Financial Officer, Treasurer and Secretary since August 1995 and our Executive Vice President since January 2004. He is also a director of our wholly-owned subsidiary, Geron Bio-Med Limited, our majority-owned subsidiary, TA Therapeutics, Ltd., ViaGen, Inc., an Arizona corporation, and Clone International, an Australian company. From August 1999 until January 2004, Mr. Greenwood also served as our Senior Vice President of Corporate Development. From April 1997 until August 1999, Mr. Greenwood served as our Vice President of Corporate Development. He also serves on the Board of Regents for Pacific Lutheran University. From 1979 until joining us, Mr. Greenwood held various positions with J.P. Morgan & Co. Incorporated, an international banking firm. Mr. Greenwood holds a B.A. from Pacific Lutheran University and a M.B.A. from Harvard Business School.

Stephen M. Kelsey, M.D., F.R.C.P., F.R.C.Path., has served as our as Executive Vice President and Chief Medical Officer, Oncology since April 2009. From June 2002 until April 2009, Dr. Kelsey held various positions at Genentech, Inc., most recently as vice president, clinical hematology/oncology. From June 2000 to June 2002, Dr. Kelsey was the director of clinical affairs at Pharmacia Corporation (SUGEN, Inc.) in South San Francisco and director of global clinical development (oncology) at Pharmacia Corporation in Milan, Italy. From July 1993 to June 2000, Dr. Kelsey served as a senior lecturer in hematology/oncology at St. Bartholomews and the Royal London School of Medicine and Dentistry and visiting fellow at Vancouver General Hospital and Terry Fox Laboratories. Dr. Kelsey earned his B.Sc. in Pharmacology, M.B., Ch.B., and Doctorate of Medicine (M.D.) degrees from the University of Birmingham in the United Kingdom.

David J. Earp, J.D., Ph.D., has served as our Senior Vice President of Business Development and Chief Patent Counsel since May 2004. He is also a director of our majority-owned subsidiary, TA Therapeutics, Ltd. and ViaGen, Inc., an Arizona corporation. From October 1999 until May 2004, Dr. Earp served as our Vice President of Intellectual Property. From 1992 until joining us in June 1999, Dr. Earp was with the intellectual property law firm of Klarquist Sparkman, LLP. Dr. Earp holds a B.Sc. in microbiology from the University of Leeds, England, a Ph.D. from the biochemistry department of The University of Cambridge, England, and conducted postdoctoral research at the University of California at Berkeley/U.S.D.A. Plant Gene Expression Center. He received his J.D. from the Northwestern School of Law of Lewis and Clark College in Portland, Oregon.

Melissa A. Kelly Behrs has served as our Senior Vice President, Therapeutic Development, Oncology since January 2007. Ms. Behrs served as our Vice President of Oncology from January 2003 until January 2007. From April 2002 until January 2003, Ms. Behrs served as our Vice President of Corporate Development. From April 2001 until April 2002, Ms. Behrs served as our General Manager of Research and Development Technologies. Ms. Behrs joined us in November 1998 as Director of Corporate Development. From 1990 to 1998, Ms. Behrs worked at Genetics Institute, Inc., serving initially as assistant treasurer and then as associate director of preclinical operations where she was responsible for all business development, regulatory, and project management activities for the preclinical development function. Ms. Behrs received a B.S. from Boston College and an M.B.A. from Babson College.

Jane S. Lebkowski, Ph.D., has served as our Senior Vice President, Chief Scientific Officer, Regenerative Medicine since February 2009 and Senior Vice President of Regenerative Medicine since January 2004. From August 1999 until January 2004, Dr. Lebkowski served as our Vice President of Regenerative Medicine. From April 1998 until August 1999, Dr. Lebkowski served as our Senior Director, Cell and Gene Therapies. From 1986 until joining us in 1998, Dr. Lebkowski served as vice president, research and development at Applied Immune Sciences. In 1995, Applied Immune Sciences was acquired by Rhone-Poulenc Rorer, at which time Dr. Lebkowski was appointed vice president, discovery & product development. Dr. Lebkowski received a B.S. in chemistry and biology from Syracuse University and received her Ph.D. from Princeton University.

Katharine E. Spink, Ph.D., has served as our Vice President of Operations, Regenerative Medicine Programs since February 2009. From January 2008 until February 2009, Dr. Spink served as our Senior Director of Regenerative Medicine Program Operations. From January 2007 until January 2008, Dr. Spink served as our Program Director for Cardiovascular Disease. Dr. Spink joined Geron in December 2003, and served various roles within our Corporate Development group until January 2007. Prior to Geron, Dr. Spink was with the global management consulting firm McKinsey & Company, where she advised clients in the biotechnology, pharmaceutical, and medical device industries on matters relating to R&D strategy, business development, and marketing. Dr. Spink holds a B.A. in biochemistry from Rice University and a Ph.D. in cancer biology from Stanford University.

Employees

As of December 31, 2009, we had 172 employees of whom 50 hold Ph.D. degrees and 44 hold other advanced degrees. Of our total workforce, 144 employees were engaged in, or directly support, our research and development activities and 28 employees were engaged in business development, legal, finance and administration. We also retain outside consultants. None of our employees are covered by a collective bargaining agreement, nor have we experienced work stoppages. We consider relations with our employees to be good.

ITEM 1A. RISK FACTORS

Our business is subject to various risks, including those described below. You should carefully consider these risk factors, together with all of the other information included in this Form 10-K. Any of these risks could materially adversely affect our business, operating results and financial condition.

RISKS RELATED TO OUR BUSINESS

Our business is at an early stage of development.

Our business is at an early stage of development, in that we do not yet have product candidates in late-stage clinical trials or on the market. We have sponsored six Phase I or I/II trials of our lead anti-cancer drug, imetelstat, in patients with chronic lymphoproliferative diseases, solid tumor malignancies, non-small cell lung cancer, breast cancer and multiple myeloma. Four of those trials have completed patient enrollment and the remaining two are expected to complete enrollment in 2010. We currently plan to advance imetelstat to Phase II trials in 2010 in four different malignancies. Patient enrollment for our telomerase cancer vaccine, GRNVAC1, in patients with acute myelogenous leukemia is now complete and we are awaiting the results from this Phase II trial. We have no other product candidates in clinical testing. Currently, the clinical trial of GRNOPC1, our human embryonic stem cell (hESC)-derived therapy targeted for the treatment of acute spinal cord injury, has been placed on clinical hold by the U.S. Food and Drug Administration (FDA). We are in discussions with the FDA to answer its questions and seek the release of the clinical hold to permit us to proceed with the clinical trial. Our ability to develop product candidates that progress to and through clinical trials is subject to our ability to, among other things:

- succeed in our research and development efforts;
- select therapeutic compounds or cell therapies for development;
- obtain required regulatory approvals, including release by the FDA of the clinical hold for GRNOPC1;
- manufacture product candidates; and
- collaborate successfully with clinical trial sites, academic institutions, physician investigators, clinical research organizations and other third parties.

Potential lead drug compounds or other product candidates and technologies require significant preclinical and clinical testing prior to regulatory approval in the United States and other countries. Our 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 commercial use. In addition, our product candidates may not prove to be more effective for treating disease or injury than current therapies. Accordingly, we may have to delay or abandon efforts to research, develop or obtain regulatory approvals to market our product candidates. In addition, we will need to determine whether any of our potential products can be manufactured in commercial quantities at an acceptable cost. Our research and development efforts may not result in a product that can be or will be approved by regulators or marketed successfully. Competitors may have proprietary rights which prevent us from developing and marketing our products or they may sell similar, superior or lower-cost products. Because of the significant scientific, regulatory and commercial milestones that must be reached for any of our development programs or product candidates to be successful, any program or product candidate may be abandoned, even after we have expended significant resources, such as our investments in telomerase technology, hESCs, imetelstat, GRNVAC1 and GRNOPC1, which could adversely affect our business and cause a sharp drop in our stock price.

The science and technology of telomere biology and telomerase and hESCs are relatively new. There is no precedent for the successful commercialization of therapeutic product candidates based on our technologies. These development programs are therefore particularly risky. In addition, we, our licensees or our collaborators must undertake significant research and development activities to develop product candidates based on our technologies, which will require additional funding and may take years to accomplish, if ever.

Restrictions on the use of hESCs, political commentary and the ethical and social implications of research involving hESCs could prevent us from developing or gaining acceptance for commercially viable products based upon such stem cells and adversely affect the market price of our common stock.

Some of our most important programs involve the use of stem cells that are derived from human embryos. The use of hESCs gives rise to ethical and social issues regarding the appropriate use of these cells. Our research related to hESCs may become the subject of adverse commentary or publicity, which could significantly harm the market price for our common stock.

Some political and religious groups have voiced opposition to our technology and practices. We use stem cells derived from human embryos that had been created for in vitro fertilization procedures but were no longer desired or suitable for that use and were donated with appropriate informed consent. 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 hESCs, thereby impairing our ability to conduct research in this field.

Furthermore, on March 9, 2009, President Obama issued Executive Order 13505, entitled "Removing Barriers to Responsible Scientific Research Involving Human Stem Cells" (the Executive Order). As a result, in July 2009 the Secretary of Health and Human Services, through the Director of the National Institutes of Health (NIH), issued new guidelines relating to human stem cell research. Under the new guidelines, federal funding is allowed for research using hESCs derived from embryos created by in vitro fertilization for reproductive purposes, but are no longer needed for that purpose. Strict ethics requirements must be followed to qualify new stem cell lines, including extensive documentation around consent forms and written policies and procedures. Certain states are considering enacting, or already have enacted, legislation relating to stem cell research, including California, whose voters approved Proposition 71 to provide state funds for stem cell research in November 2004. In the United Kingdom and other countries, the use of embryonic or fetal tissue in research (including the derivation of hESCs) is regulated by the government, whether or not the research involves government funding.

Government-imposed restrictions with respect to use of embryos or hESCs in research and development could have a material adverse effect on us, including:

- harming our ability to establish critical partnerships and collaborations;
- delaying or preventing progress in our research, product development or clinical testing;
- preventing commercialization of therapies derived from hESCs; and
- as a result of the potential adverse effects above, causing a decrease in the price of our stock.

RISKS RELATED TO OUR FINANCIAL POSITION AND NEED FOR ADDITIONAL FINANCING

We have a history of losses and anticipate future losses, and continued losses could impair our ability to sustain operations.

We have incurred operating losses every year since our operations began in 1990. As of December 31, 2009, our accumulated deficit was approximately $577.3 million. Losses have resulted principally from costs incurred in connection with our research and development activities and from general and administrative costs associated with our operations. We expect to incur additional operating losses and, as our development efforts and clinical testing activities continue, our operating losses may increase in size.

Substantially all of our revenues to date have been research support payments under collaboration agreements and revenues from our licensing arrangements. We may be unsuccessful in entering into any new corporate collaboration or license agreement that results in revenues. We do not expect that the revenues generated from these arrangements will be sufficient alone to continue or expand our research or development activities and otherwise sustain our operations.

While we receive royalty revenue from licenses, we do not currently expect to receive sufficient royalty revenues from these licenses to independently sustain our operations. Our ability to continue or expand our research and development activities and otherwise sustain our operations is dependent on our ability, alone or with others, to, among other things, manufacture and market therapeutic products.

We also expect to experience negative cash flow for the foreseeable future as we fund our operating losses and capital expenditures. This will result in decreases in our working capital, total assets and stockholders' equity, which may not be offset by future financings. We will need to generate significant revenues to achieve profitability. We may not be able to generate these revenues, and we may never achieve profitability. Our failure to achieve profitability could negatively impact the market price of our common stock. Even if we do become profitable, we cannot assure you that we would be able to sustain or increase profitability on a quarterly or annual basis.

We will need additional capital to conduct our operations and develop our product candidates, and our ability to obtain the necessary funding is uncertain.

We will require substantial capital resources in order to conduct our operations and develop our product candidates, and we cannot assure you that our existing capital resources, interest income and equipment financing arrangement will be sufficient to fund future planned operations. The timing and degree of any future capital requirements will depend on many factors, including:

- the accuracy of the assumptions underlying our estimates for our capital needs for the 2010 fiscal year and beyond;
- the magnitude and scope of our research and development programs;
- the progress we make in our research and development programs, preclinical development and clinical trials;
- our ability to establish, enforce and maintain strategic arrangements for research, development, clinical testing, manufacturing and marketing;
- the number and type of product candidates that we pursue;
- the time and costs involved in obtaining regulatory approvals and clearances; and
- the costs involved in preparing, filing, prosecuting, maintaining, defending and enforcing patent claims.

We do not have any committed sources of capital. Additional financing through strategic collaborations, public or private equity financings, capital lease transactions or other financing sources may not be available on acceptable terms, or at all. The receptivity of the public and private equity markets to proposed financings is substantially affected by the general economic, market and political climate and by other factors which are unpredictable and over which we have no control. Additional equity financings, if we obtain them, could result in significant dilution to stockholders. Further, in the event that 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 proposed products that we would otherwise seek to develop and commercialize ourselves. If sufficient capital is not available, we may be required to delay, reduce the scope of or eliminate one or more of our programs, any of which could have a material adverse effect on our business.

RISKS RELATED TO CLINICAL AND COMMERCIALIZATION ACTIVITIES

Delays in the commencement of clinical testing of our current and potential product candidates could result in increased costs to us and delay our ability to generate revenues.

The commencement of clinical trials can be delayed for a variety of reasons, including delays in:

- demonstrating sufficient safety and efficacy to obtain regulatory clearance to commence a clinical trial;
- manufacturing sufficient quantities or producing drugs meeting our quality standards of a product candidate;
- obtaining approval of an Investigational New Drug (IND) application or proposed trial design from the FDA;
- reaching agreement on acceptable terms with our collaborators on all aspects of the clinical trial, including the contract research organizations (CROs) and the trial sites; and
- obtaining institutional review board approval to conduct a clinical trial at a prospective site.

In addition, clinical trials may be delayed due to insufficient patient enrollment, which is a function of many factors, including the size and nature of the patient population, the nature of the protocol, the proximity of patients to clinical sites, the availability of effective treatments for the relevant disease, and the eligibility criteria for the clinical trial. Delays in commencing clinical testing of our product candidates could have a material adverse effect on our business.

22

We do not have experience as a company conducting large-scale clinical trials, or in other areas required for the successful commercialization and marketing of our product candidates.

We have no experience as a company in conducting large-scale, late stage clinical trials. We cannot be certain that planned clinical trials will begin or be completed on time, if at all. Large-scale trials would require either additional financial and management resources, or reliance on third-party clinical investigators, CROs or consultants. Relying on third-party clinical investigators or CROs may force us to encounter delays that are outside of our control. Any such delays could have a material adverse effect on our business.

We also do not currently have marketing and distribution capabilities for our product candidates. Developing an internal sales and distribution capability would be an expensive and time-consuming process. We may enter into agreements with third parties that would be responsible for marketing and distribution. However, these third parties may not be capable of successfully selling any of our product candidates. The inability to commercialize and market our product candidates could materially adversely affect our business.

Obtaining regulatory approvals to market our product candidates in the United States and other countries is a costly and lengthy process and we cannot predict whether or when we will be permitted to commercialize our product candidates.

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 and may prevent us from creating commercially viable products from our discoveries. The regulatory process, particularly for biopharmaceutical product candidates like ours, is uncertain, can take many years and requires the expenditure of substantial resources.

Our potential product candidates will require extensive preclinical and clinical testing prior to submission of any regulatory application to commence commercial sales. In particular, human pharmaceutical therapeutic product candidates are subject to rigorous requirements of the FDA in the United States and similar health authorities in other countries in order to demonstrate safety and efficacy. Data obtained from preclinical and clinical activities is susceptible to varying interpretations that could delay, limit or prevent regulatory agency approvals. In addition, delays or rejections may be encountered as a result of changes in regulatory agency policy during the period of product development and/or the period of review of any application for regulatory agency approval for a product candidate.

Any product candidate that we or our collaborators develop must receive all relevant regulatory agency approvals before it may be marketed in the United States or other countries. Obtaining regulatory approval is a lengthy, expensive and uncertain process. Because certain of our product candidates involve the application of new technologies or are based upon a new therapeutic approach, they may be subject to substantial additional review by various government regulatory authorities, and, as a result, the process of obtaining regulatory approvals for them may proceed more slowly than for product candidates based upon more conventional technologies.

Delays in obtaining regulatory agency approvals could:

- significantly harm the marketing of any products that we or our collaborators develop;
- impose costly procedures upon our activities or the activities of our collaborators;
- diminish any competitive advantages that we or our collaborators may attain; or
- adversely affect our ability to receive royalties and generate revenues and profits.

Even if we commit the necessary time and resources, the required regulatory agency approvals may not be obtained for any product candidates developed by us or in collaboration with us. If we obtain regulatory agency approval for a new product, this approval may entail limitations on the indicated uses for which it can be marketed that could limit the potential commercial use of the product.

Failure to achieve continued compliance with government regulation over approved products could delay or halt commercialization of our products.

Approved products and their manufacturers are subject to continual review, and discovery of previously unknown problems with a product or its manufacturer may result in restrictions on the product or manufacturer, including withdrawal of the product from the market. The sale by us or our collaborators of any commercially viable product will be subject to government regulation from several standpoints, including the processes of:

- manufacturing;
- advertising and promoting;
- selling and marketing;
- labeling; and
- distribution.

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.

Failure to comply with regulatory requirements can result in severe civil and criminal penalties, including but not limited to:

- recall or seizure of products;
- injunction against the manufacture, distribution and sales and marketing of products; and
- criminal prosecution.

The imposition of any of these penalties or other commercial limitations could significantly impair our business, financial condition and results of operations.

RISKS RELATED TO PROTECTING OUR INTELLECTUAL PROPERTY

Impairment of our intellectual property rights may adversely affect the value of our technologies and product candidates and limit our ability to pursue their development.

Protection of our proprietary technology is critically important to our business. Our success will depend in part on our ability to obtain and enforce our patents and maintain trade secrets, both in the United States and in other countries. Further, our patents may be challenged, invalidated or circumvented, and our patent rights may not provide proprietary protection or competitive advantages to us. In the event that we are unsuccessful in obtaining and enforcing patents, our business would be negatively impacted.

The patent positions of pharmaceutical and biopharmaceutical companies, including ours, are highly uncertain and involve complex legal and technical questions. In particular, legal principles for biotechnology patents in the United States and in other countries are evolving, and the extent to which we will be able to obtain patent coverage to protect our technology, or enforce issued patents, is uncertain. In the United States, recent court decisions in patent cases as well as proposed legislative changes to the patent system only exacerbate this uncertainty. Furthermore, significant amendments to the regulations governing the process of obtaining patents were proposed in a new rule package by the United States Patent and Trademark Office (the Patent Office) in 2007. The proposed new rules were widely regarded as detrimental to the interests of biotechnology and pharmaceutical companies. The implementation of the rule package was blocked by a court injunction requested by a pharmaceutical company. The Patent Office challenged the court decision through an appeal to the U.S. Court of Appeals for the Federal Circuit (CAFC), but the appeal was dismissed in November 2009, after the Patent Office changed course and rescinded the proposed new rules. At this point we do not know whether the Patent Office will attempt to introduce new rules to replace those that were recently withdrawn or whether any such new rules would also be challenged.

In Europe, the European Patent Convention prohibits the granting of European patents for inventions that concern “uses of human embryos for industrial or commercial purposes.” The European Patent Office (EPO) was earlier interpreting this prohibition broadly, and applying it to

reject claims in any patent application that pertained to hESCs. An early patent application filed by the Wisconsin Alumni Research

Foundation (WARF) with claims covering the original isolation of hESCs was appealed as a test case, and examination of other hESC patent applications was suspended while that case was heard. In November 2008, the EPO Enlarged Board of Appeals held that the claims in the WARF application were unpatentable. Geron holds a worldwide license under this patent family, and since the decision is not subject to further appeal, this WARF patent family will not afford protection to Geron's hESC-based product candidates in Europe. However, the reason given by the EPO for the decision was narrowly focused: the EPO found the claims objectionable on the basis that at the time that WARF filed the patent application it was necessary to use a human embryo to obtain hESCs since no cell lines were available. In contrast, the hESCs that we use, and which we employed in the technologies claimed in our own European patent applications, were sourced from established hESC lines. Consequently, the decision in the WARF case does not directly address the patentability of the subject matter in our filings. The EPO has recently restarted examination of hESC patent applications, but is being inconsistent in its application of the WARF decision to these later filed cases. At this time, we do not know whether or to what extent we will be able to obtain patent protection for our hESC technologies in Europe. If we are unable to protect our inventions related to hESCs in Europe, our business would be negatively impacted.

Challenges to our patent rights can result in costly and time-consuming legal proceedings that may prevent or limit development of our product candidates.

Publication of discoveries in scientific or patent literature tends to lag behind actual discoveries by at least several months and sometimes several years. Therefore, the persons or entities that we or our licensors name as inventors in our patents and patent applications may not have been the first to invent the inventions disclosed in the patent applications or patents, or the first to file patent applications for these inventions. As a result, we may not be able to obtain patents for discoveries that we otherwise would consider patentable and that we consider to be extremely significant to our future success.

Where several parties seek U.S. patent protection for the same technology, the Patent Office may declare an interference proceeding in order to ascertain the party to which the patent should be issued. Patent interferences are typically complex, highly contested legal proceedings, subject to appeal. They are usually expensive and prolonged, and can cause significant delay in the issuance of patents. Moreover, parties that receive an adverse decision in an interference can lose important patent rights. Our pending patent applications, or our issued patents, may be drawn into interference proceedings which may delay or prevent the issuance of patents, or result in the loss of issued patent rights. By way of example, we are currently a party to an interference proceeding that involves patent filings for making endoderm cells from hESCs. We requested that the Patent Office declare this interference after Novocell Inc. was granted patent claims that conflict with subject matter we filed in an earlier patent application. The interference proceeding will determine whether we or Novocell are entitled to such patent claims. Since this interference is still ongoing, we cannot predict what the outcome will be.

Outside of the United States, certain jurisdictions, such as Europe, New Zealand and Australia, permit oppositions to be filed against the granting of patents. Because our intent is to commercialize products internationally, securing both proprietary protection and freedom to operate outside of the United States is important to our business. We are involved in both opposing the grant of patents to others through such opposition proceedings and in defending our patent applications against oppositions filed by others. For example, we have been involved in two patent oppositions before the EPO with a Danish company, Pharmexa. Pharmexa (which acquired the Norwegian company GemVax in 2005) was developing a cancer vaccine that employs a short telomerase peptide to induce an immune response against telomerase and was conducting a Phase III clinical trial. Pharmexa obtained a European patent with broad claims to the use of telomerase vaccines for the treatment of cancer, and Geron opposed that patent in 2004. In 2005, the Opposition Division (OD) of the EPO revoked the claims originally granted to Pharmexa, but permitted Pharmexa to add new, narrower claims limited to five specific small peptide fragments of telomerase. The decision was appealed to the Technical Board of Appeals (TBA). In August 2007, the TBA ruled, consistent with the decision of the OD, that Pharmexa was not entitled to the originally granted broad claims but was only entitled to the narrow claims limited to the five small peptides.

In parallel, Pharmexa opposed a European patent held by Geron, the claims of which cover many facets of human telomerase, including the use of telomerase peptides in cancer vaccines. In June 2006, the OD of the EPO revoked three of the granted claims in Geron's patent, specifically the three claims covering telomerase

peptide cancer vaccines. We have appealed that decision to the TBA, and that appeal is still pending. Because this appeal is ongoing, the outcome cannot be determined at this time. We are also seeking to obtain patent coverage in Europe for telomerase peptides through a European divisional patent application. If and when those patent claims are issued, they too may be subject to an opposition proceeding. In late 2008, Pharmexa reported that it sold its telomerase vaccine program to a Korean company, KAEL Co. Ltd.

European opposition and appeal proceedings can take several years to reach final decision. The oppositions discussed above reflect the complexity of the patent landscape in which we operate, and illustrate the risks and uncertainties. We are also currently involved in other patent opposition proceedings in Europe and Australia.

Patent opposition proceedings are not currently available in the U.S. patent system, but legislation has been proposed to introduce them. However, issued U.S. patents can be reexamined by the Patent Office at the request of a third party. Patents owned or licensed by Geron may therefore be subject to reexamination. As in any legal proceeding, the outcome of patent reexaminations is uncertain, and a decision adverse to our interests could result in the loss of valuable patent rights.

In July 2006, requests were filed on behalf of the Foundation for Taxpayer and Consumer Rights (now renamed as “Consumer Watchdog”) for reexamination of three issued U.S. patents owned by WARF and relating to hESCs. These three patents (U.S. Patent Nos. 5,843,780, 6,200,806 and 7,029,913), which are the U.S. equivalents of the European WARF case discussed above, are licensed to Geron pursuant to a January 2002 license agreement with WARF. The license agreement conveys exclusive rights to Geron under the WARF patents for the development and commercialization of therapeutics based on neural cells, cardiomyocytes and pancreatic islet cells, derived from hESCs, as well as non-exclusive rights for other product opportunities. In October 2006, the Patent Office initiated the reexamination proceedings. After initially rejecting the patent claims, the Patent Office recently issued decisions in all three cases upholding the patentability of the claims. The decisions to uphold the 5,843,780 and 6,200,806 patents are final and not subject to further appeal. Consumer Watchdog appealed the decision on the 7,029,913 patent. We cooperated with WARF in these reexamination actions and expect that WARF will continue to vigorously defend its patent position in this appeal. While the decisions in these reexamination proceedings to date have all been favorable to our patent position, the outcome of the appeal or of any future reexamination proceedings cannot be determined at this time. Reduction or loss of claim scope in these WARF embryonic stem cell patents would negatively impact Geron’s proprietary position in this technology.

As more groups become engaged in scientific research and product development in the areas of telomerase biology and embryonic stem cells, the risk of our patents being challenged through patent interferences, oppositions, reexaminations or other means will likely increase. Challenges to our patents through these procedures can be extremely expensive and time-consuming, even if the outcome is favorable to us. An adverse outcome in a patent dispute could severely harm our business by:

- causing us to lose patent rights in the relevant jurisdiction(s);
- subjecting us to litigation, or otherwise preventing us from commercializing potential products in the relevant jurisdiction(s);
- requiring us to obtain licenses to the disputed patents;
- forcing us to cease using the disputed technology; or
- requiring us to develop or obtain alternative technologies.

Furthermore, if such challenges to our patent rights are not resolved promptly in our favor, our existing business relationships may be jeopardized and we could be delayed or prevented from entering into new collaborations or from commercializing certain products, which could materially harm our business.

If we fail to meet our obligations under license agreements, we may lose our rights to key technologies on which our business depends.

Our business depends on several critical technologies that are based in part on patents licensed from third parties. Those third-party license agreements impose obligations on us, such as payment obligations and obligations to diligently pursue development of commercial products under the licensed patents. If a

licensor believes that we have failed to meet our obligations under a license agreement, the licensor could seek to limit or terminate our license rights, which could lead to costly and time-consuming litigation and, potentially, a loss of the licensed rights. During the period of any such litigation our ability to carry out the development and commercialization of potential products could be significantly and negatively affected. If our license rights were restricted or ultimately lost, our ability to continue our business based on the affected technology would be severely adversely affected.

We may be 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.

We may be subject to infringement claims that are costly to defend, and which may limit our ability to use disputed technologies and prevent us from pursuing research and development or commercialization of potential products.

Our commercial success depends significantly on our ability to operate without infringing patents and the proprietary rights of others. Our technologies may infringe the patents or proprietary rights of others. In addition, we may become aware of discoveries and technology controlled by third parties that are advantageous to our programs. In the event our technologies infringe the rights of others or we require the use of discoveries and technology controlled by third parties, we may be prevented from pursuing research, development or commercialization of potential products or may be required to obtain licenses to those patents or other proprietary rights or develop or obtain alternative technologies. We have obtained licenses from several universities and companies for technologies that we anticipate incorporating into our potential products, and we initiate negotiation for licenses to other technologies as the need or opportunity arises. We may not be able to obtain a license to patented technology on commercially favorable terms, or at all. If we do not obtain a necessary license, we may need to redesign our technologies or obtain rights to alternate technologies, the research and adoption of which could cause delays in product development. In cases where we are unable to license necessary technologies, we could be prevented from developing certain potential products. Our failure to obtain alternative technologies or a license to any technology that we may require to research, develop or commercialize our product candidates would significantly and negatively affect our business.

Much of the information and know-how that is critical to our business is not patentable and we may not be able to prevent others from obtaining this information and establishing competitive enterprises.

We sometimes rely on trade secrets to protect our proprietary technology, especially in circumstances in which we believe patent protection is not appropriate or available. We attempt to protect our proprietary technology in part by confidentiality agreements with our employees, consultants, collaborators and contractors. We cannot assure you that these agreements will not be breached, that we would have adequate remedies for any breach, or that our trade secrets will not otherwise become known or be independently discovered by competitors, any of which would harm our business significantly.

RISKS RELATED TO OUR RELATIONSHIPS WITH THIRD PARTIES

We depend on other parties to help us develop, manufacture and test our product candidates, and our ability to develop and commercialize potential products may be impaired or delayed if collaborations are unsuccessful.

Our strategy for the development, clinical testing and commercialization of our product candidates 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. By way of examples: Merck is developing cancer vaccines targeted to telomerase other than dendritic cell-based vaccines; Sienna is developing cancer diagnostics using our telomerase technology; and GE Healthcare is developing cell-based assays using cells derived from our hESCs. 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 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.

Under agreements with other parties, we may rely significantly on them to, among other activities:

- conduct research and development activities in conjunction with us;
- design and conduct advanced clinical trials in the event that we reach clinical trials;
- fund research and development activities with us;
- manage and license certain patent rights;
- pay us fees upon the achievement of milestones; and
- market with us any commercial products that result from our collaborations.

The development and commercialization of potential products will be delayed if collaborators or other partners 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.

We also rely on other companies for certain process development, manufacturing or other technical scientific work, especially with respect to our imetelstat, GRNVAC1, GRNOPC1 and GRNCM1 programs. We have contracts with these companies that specify the work to be done and results to be achieved, but we do not have direct control over their personnel or operations. If these companies do not perform the work which they were assigned, our ability to develop or manufacture our product candidates could be significantly harmed.

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 product candidates.

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 who assist us in formulating our research and development and clinical 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, can expect only limited amounts of their time to be dedicated to our activities.

In addition, we have formed research collaborations with many academic and other research institutions throughout the world. These research facilities may have commitments to other commercial and noncommercial entities. We have limited control over the operations of these laboratories and can expect only limited amounts of their time to be dedicated to our research goals.

If any of these third parties are unable or refuse to contribute to projects on which we need their help, our ability to generate advances in our technologies and develop our product candidates could be significantly harmed.

RISKS RELATED TO COMPETITIVE FACTORS

The loss of key personnel could slow our ability to conduct research and develop product candidates.

Our future success depends to a significant extent on the skills, experience and efforts of our executive officers and key members of our scientific staff. We face intense competition for qualified individuals from numerous pharmaceutical, biopharmaceutical and biotechnology companies, as well as academic and other research institutions. We may be unable to retain our current personnel or attract or assimilate other highly qualified management and scientific personnel in the future on acceptable terms. The loss of any or all of these individuals could harm our business and might significantly delay or prevent the achievement of research, development or business objectives.

Our product candidates are likely to be expensive to manufacture, and they may not be profitable if we are unable to significantly reduce the costs to manufacture them.

Our telomerase inhibitor compound, imetelstat, our telomerase cancer vaccine, GRNVAC1, and our hESC-based products are likely to be more expensive to manufacture than most other drugs currently on the market today. Oligonucleotides are relatively large molecules with complex chemistry, and the cost of manufacturing an oligonucleotide like imetelstat is greater than the cost of making most small-molecule drugs. Our present manufacturing processes are conducted at a modest scale and we hope to substantially reduce manufacturing costs through process improvements, as well as through scale increases. If we are not able to do so, however, and, depending on the pricing of the potential product, the profit margin on the telomerase inhibitor may be significantly less than that of most drugs on the market today.

GRNVAC1 is an autologous therapy that is produced from a patient's blood using a unique process that generates highly activated dendritic cells that contain RNA coding for the protein component of telomerase. If we are unable to scalably produce dendritic cells at a lower manufacturing cost, the cost of GRNVAC1 may reduce the affordability of the therapy for patients and reduce our potential profitability.

Our manufacturing processes for differentiated cells from hESCs are conducted at a small scale and at a high cost per unit measure. The cell-based therapies we are developing based on hESCs will probably require large quantities of cells. We continue to develop processes to scale up production of the cells in a cost-effective way. We may not be able to charge a high enough price for any cell therapy product we develop, even if it is 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.

Some of our competitors may develop technologies that are superior to or more cost-effective than ours, which may impact the commercial viability of our technologies and which may significantly damage our ability to sustain operations.

The pharmaceutical and biotechnology industries are intensely competitive. Other pharmaceutical and biotechnology companies and research organizations currently engage in or have in the past engaged in efforts related to the biological mechanisms that are the focus of our programs in oncology and human embryonic stem cell therapies, including the study of telomeres, telomerase and hESCs. In addition, other products and therapies that could compete directly with the product candidates that we are seeking to develop and market currently exist or are being developed by pharmaceutical and biopharmaceutical companies and by academic and other research organizations.

Many companies are developing alternative therapies to treat cancer and, in this regard, are competitors of ours. According to public data from the FDA and NIH, there are more than 200 approved anti-cancer products on the market in the United States, and several thousand in clinical development.

Many of the pharmaceutical companies developing and marketing these competing products (including GlaxoSmithKline, Bristol-Myers Squibb Company and Novartis AG, among others) have significantly greater financial resources and expertise than we do in:

- research and development;
- manufacturing;
- preclinical and clinical testing;

- obtaining regulatory approvals; and
- marketing and distribution.

Smaller companies may also prove to be significant competitors, particularly through collaborative arrangements with large and established companies. Academic institutions, government agencies and other public and private research organizations may also conduct research, seek patent protection and establish collaborative arrangements for research, clinical development and marketing of products similar to ours. These companies and institutions compete with us in recruiting and retaining qualified scientific and management personnel as well as in acquiring technologies complementary to our programs.

In addition to the above factors, we expect to face competition in the following areas:

- product efficacy and safety;
- the timing and scope of regulatory consents;
- availability of resources;
- reimbursement coverage;
- price; and
- patent position, including potentially dominant patent positions of others.

As a result of the foregoing, our competitors may develop more effective or more affordable products, or achieve earlier patent protection or product commercialization than we do. Most significantly, competitive products may render any product candidates that we develop obsolete, which would negatively impact our business and ability to sustain operations.

To be successful, our product candidates must be accepted by the health care community, which can be very slow to adopt or unreceptive to new technologies and products.

Our product candidates and those developed by our collaborators, if approved for marketing, may not achieve market acceptance since hospitals, physicians, patients or the medical community in general may decide not to accept and utilize these products. The product candidates that we are attempting to develop represent substantial departures from established treatment methods and will compete with a number of conventional drugs and therapies manufactured and marketed by major pharmaceutical companies. The degree of market acceptance of any of our developed potential products will depend on a number of factors, including:

- our establishment and demonstration to the medical community of the clinical efficacy and safety of our product candidates;
- our ability to create products that are superior to alternatives currently on the market;
- our ability to establish in the medical community the potential advantage of our treatments over alternative treatment methods; and
- reimbursement policies of government and third-party payors.

If the health care community does not accept our potential products for any of the foregoing reasons, or for any other reason, our business would be materially harmed.

If we fail to obtain acceptable prices or adequate reimbursement for our product candidates, the use of our potential products could be severely limited.

Our ability to successfully commercialize our product candidates will depend significantly on our ability to obtain acceptable prices and the availability of reimbursement to the patient from third-party payors. Significant uncertainty exists as to the reimbursement status of

newly-approved health care products, including pharmaceuticals. If our potential products are not considered cost-effective or if we fail to generate adequate third-party reimbursement for the users of our potential products and treatments, then we may be unable to maintain price levels sufficient to realize an appropriate return on

our investment for potential products currently in development. In both U.S. and other markets, sales of our potential products, if any, will depend in part on the availability of reimbursement from third-party payors, examples of which include:

- government health administration authorities;
- private health insurers;
- health maintenance organizations; and
- pharmacy benefit management companies.

Both federal and state governments in the United States and governments in other countries continue to propose and pass legislation designed to contain or reduce the cost of health care. Legislation and regulations affecting the pricing of pharmaceuticals and other medical products may be adopted before any of our potential products are approved for marketing. Cost control initiatives could decrease the price that we receive for any product candidate we may develop in the future. In addition, third-party payors are increasingly challenging the price and cost-effectiveness of medical products and services and any of our potential products may ultimately not be considered cost-effective by these third parties. Any of these initiatives or developments could materially harm our business.

RISKS RELATED TO ENVIRONMENTAL AND PRODUCT LIABILITY

Our activities involve hazardous materials, and improper handling of these materials by our employees or agents could expose us to significant legal and financial penalties.

Our research and development activities involve the controlled use of hazardous materials, chemicals and various radioactive compounds. As a consequence, we are subject to numerous environmental and safety laws and regulations, including those governing laboratory procedures, exposure to blood-borne pathogens and the handling of biohazardous materials. We may be required to incur significant costs to comply with current or future environmental laws and regulations and may be adversely affected by the cost of compliance with these laws and regulations.

Although we believe that our safety procedures for using, handling, storing and disposing of hazardous materials comply with the standards prescribed by state and federal regulations, the risk of accidental contamination or injury from these materials cannot be eliminated. In the event of such an accident, state or federal authorities could curtail our use of these materials and we could be liable for any civil damages that result, the cost of which could be substantial. Further, any failure by us to control the use, disposal, removal or storage, or to adequately restrict the discharge, or assist in the clean up, of hazardous chemicals or hazardous, infectious or toxic substances could subject us to significant liabilities, including joint and several liability under certain statutes. Any such liability could exceed our resources and could have a material adverse effect on our business, financial condition and results of operations. Additionally, an accident could damage our research and manufacturing facilities and operations.

Additional federal, state and local laws and regulations affecting us may be adopted in the future. We may incur substantial costs to comply with these laws and regulations and substantial fines or penalties if we violate any of these laws or regulations, which would adversely affect our business.

We may not be able to obtain or maintain sufficient insurance on commercially reasonable terms or with adequate coverage against potential liabilities in order to protect ourselves against product liability claims.

Our business exposes us to potential product liability risks that are inherent in the testing, manufacturing and marketing of human therapeutic and diagnostic products. We may become subject to product liability claims if the use of our potential products is alleged to have injured subjects or patients. This risk exists for product candidates tested in human clinical trials as well as potential products that are sold commercially. We currently have limited clinical trial liability insurance and we may not be able to maintain this type of insurance for any of our clinical trials. In addition, product liability insurance is becoming increasingly expensive. Being unable to obtain or maintain product liability insurance in the future on acceptable terms or with adequate coverage against potential liabilities could have a material adverse effect on our business.

RISKS RELATED TO OUR COMMON STOCK AND FINANCIAL REPORTING

Our stock price has historically been very volatile.

Stock prices and trading volumes for many biopharmaceutical companies fluctuate widely for a number of reasons, including factors which may be unrelated to their businesses or results of operations such as media coverage, legislative and regulatory measures and the activities of various interest groups or organizations. 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.

Historically, our stock price has been extremely volatile. Between January 2000 and December 2009, our stock has traded as high as $75.88 per share and as low as $1.41 per share. Between January 1, 2007 and December 31, 2009, the price has ranged between a high of $9.85 per share and a low of $1.95 per share. The significant market price fluctuations of our common stock are due to a variety of factors, including:

- the demand in the market for our common stock;
- the experimental nature of our product candidates;
- fluctuations in our operating results;
- market conditions relating to the biopharmaceutical and pharmaceutical industries;
- announcements of technological innovations, new commercial products, or clinical progress or lack thereof by us, our collaborative partners or our competitors;
- announcements concerning regulatory developments, developments with respect to proprietary rights and our collaborations;
- comments by securities analysts;
- general market conditions;
- political developments related to hESC research;
- public concern with respect to our product candidates; or
- the issuance of common stock to partners, vendors or to investors to raise additional capital.

In addition, the stock market is subject to other factors outside our control that can cause extreme price and volume fluctuations. In the third and fourth quarters of 2008, as well as during 2009, broad distress in the financial markets and the economy have resulted in greatly increased market uncertainty and instability in both U.S. and international capital and credit markets. These conditions, combined with volatile oil prices, declining business and consumer confidence and increased unemployment have recently contributed to substantial market volatility, and if such market conditions persist, the price of our common stock may fluctuate or decline. Securities class action litigation has often been brought against companies, including many biotechnology companies, which experience volatility in the market price of their securities. Litigation brought against us could result in substantial costs and a diversion of management’s attention and resources, which could adversely affect our business.

The sale of a substantial number of shares may adversely affect the market price for our common stock.

The sale of a substantial number of shares of our common stock in the public market, or the perception that such sales could occur, could significantly and negatively affect the market price for our common stock. As of December 31, 2009, we had 200,000,000 shares of common stock authorized for issuance and 92,521,946 shares of common stock outstanding. In addition, as of December 31, 2009, we have reserved for future issuance approximately 25,070,022 shares of common stock for our stock plans, potential milestone payments and outstanding warrants.

In addition, we have issued common stock to certain parties, such as vendors and service providers, as payment for products and services. Under these arrangements, we typically agree to register the shares for resale soon after their issuance. We may continue to pay for certain goods and services in this manner, which would dilute your interest in us. Also, sales of the shares issued in this manner could negatively affect the market price for our common stock.

Our undesignated preferred stock may inhibit potential acquisition bids; this may adversely affect the market price for our common stock and the voting rights of holders of our common stock.

Our certificate of incorporation provides our Board of Directors with the authority to issue up to 3,000,000 shares of undesignated preferred stock and to determine or alter the rights, preferences, privileges and restrictions granted to or imported upon these shares without further vote or action by our stockholders. As of the date of this Form 10-K, 50,000 shares of preferred stock have been designated Series A Junior Participating Preferred Stock and the Board of Directors still has authority to designate and issue up to 2,950,000 shares of preferred stock in one or more classes or series. The issuance of shares of preferred stock may delay or prevent a change in control transaction without further action by our stockholders. As a result, the market price for our common stock may be adversely affected.

In addition, if we issue preferred stock in the future that has preference over our common stock with respect to the payment of dividends or upon our liquidation, dissolution or winding up, or if we issue preferred stock with voting rights that dilute the voting power of our common stock, the rights of holders of our common stock or the market price for our common stock could be adversely affected.

Provisions in our share purchase rights plan, charter and bylaws, and provisions of Delaware law, may inhibit potential acquisition bids for us, which may prevent holders of our common stock from benefiting from what they believe may be the positive aspects of acquisitions and takeovers.

Our Board of Directors has adopted a share purchase rights plan, commonly referred to as a “poison pill.” This plan entitles existing stockholders to rights, including the right to purchase shares of common stock, in the event of an acquisition of 15% or more of our outstanding common stock.

Our share purchase rights plan could prevent stockholders from profiting from an increase in the market value of their shares as a result of a change of control of us by delaying or preventing a change of control. In addition, our Board of Directors has the authority, without further action by our stockholders, to issue additional shares of common stock, and to fix the rights and preferences of one or more series of preferred stock.

In addition to our share purchase rights plan and the undesignated preferred stock, provisions of our charter documents and bylaws may make it substantially more difficult for a third party to acquire control of us and may prevent changes in our management, including provisions that:

- prevent stockholders from taking actions by written consent;
- divide the Board of Directors into separate classes with terms of office that are structured to prevent all of the directors from being elected in any one year; and
- set forth procedures for nominating directors and submitting proposals for consideration at stockholders’ meetings.

Provisions of Delaware law may also inhibit potential acquisition bids for us or prevent us from engaging in business combinations. In addition, we have severance agreements with several employees and a change of control severance plan which could require an acquiror to pay a higher price. Either collectively or individually, these provisions may prevent holders of our common stock from benefiting from what they may believe are the positive aspects of acquisitions and takeovers, including the potential realization of a higher rate of return on their investment from these types of transactions.

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

We do not anticipate paying 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 the Board of Directors. Furthermore, we may incur additional indebtedness that may severely restrict or prohibit the payment of dividends.

Failure to achieve and maintain effective internal controls in accordance with Section 404 of the Sarbanes-Oxley Act of 2002 could have a material adverse effect on our business and stock price.

Section 404 of the Sarbanes-Oxley Act of 2002 (the Sarbanes-Oxley Act) requires that we establish and maintain an adequate internal control structure and procedures for financial reporting. Our annual report on Form 10-K must contain an assessment by management of the effectiveness of our internal control over financial reporting and must include disclosure of any material weaknesses in internal control over financial reporting that we have identified. In addition, our independent registered public accounting firm must annually provide an opinion on the effectiveness of our internal control over financial reporting.

The requirements of Section 404 of the Sarbanes-Oxley Act are ongoing and also apply to future years. We expect that our internal control over financial reporting will continue to evolve as our business develops. Although we are committed to continue to improve our internal control processes and we will continue to diligently and vigorously review our internal control over financial reporting in order to ensure compliance with Section 404 requirements, any control system, regardless of how well designed, operated and evaluated, can provide only reasonable, not absolute, assurance that its objectives will be met. Therefore, we cannot be certain that in the future material weaknesses or significant deficiencies will not exist or otherwise be discovered. If material weaknesses or other significant deficiencies occur, these weaknesses or deficiencies could result in misstatements of our results of operations, restatements of our consolidated financial statements, a decline in our stock price, or other material adverse effects on our business, reputation, results of operations, financial condition or liquidity.

ITEM 1B. UNRESOLVED STAFF COMMENTS

None.

ITEM 2. PROPERTIES

We currently lease approximately 41,000 square feet of office space at 200 and 230 Constitution Drive, Menlo Park, California. The leases for 200 and 230 Constitution Drive expire in July 2012. We have an option to extend the leases for one additional period of four years. In March 2008, as payment of the total rent due for the premises at 200 and 230 Constitution Drive, we issued 742,158 shares of our common stock to the lessor of those premises. As a result, we have no cash rental obligation from August 1, 2008 through July 31, 2012. We also currently lease approximately 14,500 square feet of office space at 149 Commonwealth Drive, Menlo Park, California. The lease for 149 Commonwealth Drive expires in April 2010. In May 2007, as payment of the total rent due for the premises at 149 Commonwealth Drive, we issued 210,569 shares of our common stock to the lessor of those premises. As a result, we have no cash rental obligation from May 1, 2007 through April 30, 2010. In January 2010, we extended the lease for the premises at 149 Commonwealth Drive to July 31, 2012. In connection with that lease extension, we issued 94,741 shares of our common stock to the lessor of those premises as a first installment payment of the total rent due under the extended lease which pays for our cash rental obligation from May 1, 2010 through May 31, 2011. We believe that our existing facilities are adequate to meet our requirements for the near term.

ITEM 3. LEGAL PROCEEDINGS

None.

ITEM 4. SUBMISSION OF MATTERS TO A VOTE OF SECURITY HOLDERS

None.

PART II

ITEM 5. MARKET FOR THE REGISTRANT'S COMMON EQUITY, RELATED STOCKHOLDER MATTERS AND ISSUER PURCHASES OF EQUITY SECURITIES

Market Information

Our common stock is quoted on the Nasdaq Global Market under the symbol GERN. The high and low closing sales prices as reported by the Nasdaq Global Market of our common stock for each of the quarters in the years ended December 31, 2009 and 2008 are as follows:

	High	Low
Year ended December 31, 2009		
First quarter	$8.15	$3.79
Second quarter	$7.67	$4.41
Third quarter	$9.17	$6.48
Fourth quarter	$7.08	$5.19
Year ended December 31, 2008		
First quarter	$5.73	$4.04
Second quarter	$5.40	$3.45
Third quarter	$4.86	$3.17
Fourth quarter	$4.67	$2.23

As of February 23, 2010, there were approximately 796 stockholders of record. We are engaged in a highly dynamic industry, which often results in significant volatility of our common stock price. On February 23, 2010, the closing sales price for our common stock was $5.72 per share.

Dividend Policy

We have never paid cash dividends on our capital stock and do not anticipate paying cash dividends in the foreseeable future, but intend to retain our capital resources for reinvestment in our business. Any future determination to pay cash dividends will be at the discretion of the Board of Directors and will be dependent upon our financial condition, results of operations, capital requirements and other factors as the Board of Directors deems relevant.

Performance Measurement Comparison (1)

The following graph compares total stockholder returns of Geron Corporation for the last five fiscal years beginning December 31, 2004 to two indices: the Nasdaq CRSP Total Return Index for the Nasdaq Stock Market-U.S. Companies (the Nasdaq-US) and the Nasdaq Pharmaceutical Index (the Nasdaq-Pharmaceutical). The total return for our stock and for each index assumes the reinvestment of dividends, although we have never declared dividends on Geron stock, and is based on the returns of the component companies weighted according to their capitalizations as of the end of each quarterly period. The Nasdaq-US tracks the aggregate price performance of equity securities of U.S. companies traded on the Nasdaq Global Market (NGM). The Nasdaq-Pharmaceutical, which is calculated and supplied by Nasdaq, represents pharmaceutical companies, including biotechnology companies, trading on Nasdaq under the Standard Industrial Classification (SIC) Code No. 283 Drugs main category (2833 — Medicinals & Botanicals, 2834 — Pharmaceutical Preparations, 2835 — Diagnostic Substances, 2836 — Biological Products). Geron common stock trades on the NGM and is a component of both the Nasdaq-US and the Nasdaq-Pharmaceutical.

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(1) This Section is not "soliciting material," is not deemed "filed" with the SEC and is not to be incorporated by reference in any filing of the Company under the Securities Act, or the Exchange Act, whether made before or after the date hereof and irrespective of any general incorporation language in any such filing.

Comparison of Five Year Cumulative Total Return on Investment Among
Geron Corporation, the Nasdaq-US Index and the Nasdaq-Pharmaceutical Index(2)

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(2) Shows the cumulative total return on investment assuming an investment of $100 in each of Geron, the Nasdaq-US and the Nasdaq-Pharmaceutical on December 31, 2004. The cumulative total return on Geron stock has been computed based on a price of $7.97 per share, the price at which Geron's shares closed on December 31, 2004.

Recent Sales of Unregistered Securities

On November 10, 2009, we issued 55,545 shares of our common stock to Hongene Biotechnology Limited (Hongene) in a private placement as advance consideration related to an addendum agreement to a manufacturing agreement pursuant to which Hongene is making certain raw materials for us intended to be used for the manufacture of drug product for use in human clinical trials. The total fair value of the common stock was $304,000 which has been recorded as a prepaid asset and is being amortized to research and development expense on a pro-rata basis upon the proper receipt of materials which is expected to be within six months. As of December 31, 2009, $304,000 remained as a prepaid asset.

On November 10, 2009, we issued 93,244 shares of our common stock to Samchully Pharm. Co., Ltd. (Samchully) in a private placement as advance consideration related to an addendum agreement to a manufacturing agreement pursuant to which Samchully is performing certain services and manufacturing certain raw materials and products for us intended for use in human clinical trials. The total fair value of the common stock was $511,000 which has been recorded as a prepaid asset and is being amortized to research and development expense on a pro-rata basis upon the performance of services and the proper receipt of materials which is expected to be over six months. As of December 31, 2009, $461,000 remained as a prepaid asset.

On November 10, 2009, we issued 195,331 shares of our common stock to ReSearch Pharmaceutical Services, Inc. (RPS) as advance consideration related to a first project agreement to a master services agreement under which RPS is providing certain services in support of our clinical programs. The total fair value of the common stock was $1.1 million which has been recorded as a prepaid asset and is being amortized to research and development expense on a pro-rata basis as services are performed which is expected to be over two years. As of December 31, 2009, $963,000 remained as a prepaid asset.

We issued the above-described shares of common stock in reliance upon the exemption from registration provided by Section 4(2) of the Securities Act of 1933, as amended. Hongene, Samchully and RPS represented to us that they are accredited investors as defined in Rule 501(a) of the Securities Act of 1933, as amended, and that the securities issued pursuant thereto were being acquired for investment purposes.

Securities Authorized for Issuance under Equity Compensation Plans

The information required by this Item concerning our equity compensation plans is incorporated by reference from the section captioned "Equity Compensation Plans" contained in our Definitive Proxy Statement related to the annual meeting of stockholders to be held May 19, 2010, to be filed with the Securities and Exchange Commission.

ITEM 6. SELECTED FINANCIAL DATA

	Year Ended December 31,				
	2009	2008	2007	2006	2005
	(In thousands, except share and per share data)				
Consolidated Statements of Operations Data:					
Revenues from collaborative agreements	$ 450	$ 294	$ 672	$ 622	$ 290
License fees and royalties	1,276	2,509	6,950	2,655	5,868
Total revenues	1,726	2,803	7,622	3,277	6,158
Operating expenses:					
Research and development	57,617	53,664	54,624	41,234	35,080
General and administrative	14,343	16,183	15,837	9,403	8,788
Total operating expenses	71,960	69,847	70,461	50,637	43,868
Loss from operations	(70,234)	(67,044)	(62,839)	(47,360)	(37,710)
Unrealized gain (loss) on fair value of derivatives	157	418	15,453	7,421	(161)
Interest and other income	1,374	5,542	10,791	8,704	4,658
Equity in losses of joint venture	—	—	—	—	(12)
Losses recognized under equity method investment	(1,338)	(844)	—	—	—
Interest and other expense	(143)	(93)	(102)	(130)	(464)
Net loss	(70,184)	(62,021)	(36,697)	(31,365)	(33,689)
Deemed dividend on derivatives (1)	(190)	—	(9,081)	—	—
Net loss applicable to common stockholders	$ (70,374)	$ (62,021)	$ (45,778)	$ (31,365)	$ (33,689)
Basic and diluted net loss per share:					
Net loss per share applicable to common stockholders	$ (0.80)	$ (0.79)	$ (0.62)	$ (0.47)	$ (0.58)
Shares used in computing net loss per share applicable to common stockholders	88,078,557	78,187,795	74,206,249	66,057,367	57,879,725

(1) In April 2009 in connection with our continued collaboration with an investor and licensee and the data received under the collaboration relevant to Geron's therapeutic programs, we modified the terms of certain outstanding warrants held by this investor by extending the exercise term and reducing the exercise price. The exercise term of warrants to purchase 200,000 shares of common stock was extended to March 9, 2012 from March 9, 2010 and the exercise price was modified to $17.50 per share from $67.09 per share. The exercise term of warrants to purchase 100,000 shares of common stock was extended to March 9, 2012 from March 9, 2010 and the exercise price was unchanged at $12.50 per share. In connection with the modifications, we recognized a deemed dividend of approximately $190,000 in our consolidated statements of operations for the incremental fair value of the modified warrants.

In February 2007 in exchange for the exercise of certain warrants, we issued new warrants to the same institutional investors. The aggregate fair value of $3.7 million for the new warrants was recognized as a deemed dividend. In December 2007, we modified the terms of certain outstanding warrants by extending the exercise term and reducing the exercise price. In connection with the

modifications, we received $3.6 million in cash consideration from the institutional investors holding the outstanding warrants. We recognized a deemed dividend of $5.4 million for the incremental fair value of the modified warrants, net of the cash consideration received from the institutional investors for the modifications.

	December 31,				
	2009	2008	2007	2006	2005
	(In thousands)				
Consolidated Balance Sheet Data:					
Cash, restricted cash, cash equivalents and marketable securities	$ 167,070	$ 163,655	$ 208,444	$ 213,860	$ 191,003
Working capital	110,324	160,535	200,655	170,377	171,310
Total assets	180,382	176,218	218,896	220,800	201,243
Long-term obligations	—	—	427	—	—
Accumulated deficit	(577,267)	(506,893)	(444,872)	(399,094)	(367,729)
Total stockholders' equity	172,577	168,455	205,674	173,919	175,698

ITEM 7. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

Overview

The following discussion should be read in conjunction with the audited consolidated financial statements and notes thereto included in Part II, Item 8 of this annual report.

Geron is developing first-in-class biopharmaceuticals for the treatment of cancer and chronic degenerative diseases, including spinal cord injury, heart failure and diabetes. The company is advancing an anti-cancer drug and a cancer vaccine that target the enzyme telomerase through multiple clinical trials in different cancers.

Critical Accounting Policies and Estimates

Our consolidated financial statements have been prepared in accordance with accounting principles generally accepted in the United States of America. The preparation of these financial statements requires management to make estimates and assumptions that affect the reported amounts of assets, liabilities, revenues and expenses. Note 1 of Notes to Consolidated Financial Statements describes the significant accounting policies used in the preparation of the consolidated financial statements. Certain of these significant accounting policies are considered to be critical accounting policies, as defined below.

A critical accounting policy is defined as one that is both material to the presentation of our financial statements and requires management to make difficult, subjective or complex judgments that could have a material effect on our financial condition and results of operations. Specifically, critical accounting estimates have the following attributes: (i) we are required to make assumptions about matters that are highly uncertain at the time of the estimate; and (ii) different estimates we could reasonably have used, or changes in the estimate that are reasonably likely to occur, would have a material effect on our financial condition or results of operations.

Estimates and assumptions about future events and their effects cannot be determined with certainty. We base our estimates on historical experience and on various other assumptions believed to be applicable and reasonable under the circumstances. These estimates may change as new events occur, as additional information is obtained and as our operating environment changes. These changes have historically been minor and have been included in the consolidated financial statements as soon as they became known. Based on a critical assessment of our accounting policies and the underlying judgments and uncertainties affecting the application of those policies, management believes that our consolidated financial statements are fairly stated in accordance with accounting principles generally accepted in the United States, and meaningfully present our financial condition and results of operations.

We believe the following critical accounting policies reflect our more significant estimates and assumptions used in the preparation of our consolidated financial statements:

Revenue Recognition

Since our inception, a substantial portion of our revenues has been generated from research and licensing agreements. Revenue under such agreements typically includes upfront signing or license fees, cost reimbursements, milestone payments and royalties on future product sales.

We recognize nonrefundable signing, license or non-exclusive option fees as revenue when rights to use the intellectual property related to the license have been delivered and over the term of the agreement if we have continuing performance obligations. We recognize milestone payments, which are subject to substantive contingencies, upon completion of specified milestones, which represents the culmination of an earnings process, according to contract terms. Royalties are generally recognized as revenue upon the receipt of the related royalty payment. We recognize cost reimbursement revenue under collaborative agreements as the related research and development costs for services are rendered. We recognize related party revenue under collaborative agreements as the related party research and development costs for services are rendered and when the source of funds have not been derived from our contributions to the related party. Deferred revenue represents the portion of research or license payments received which have not been earned. When payments are received in equity securities, we do not recognize any revenue unless such securities are determined to be realizable in cash.

We estimate the projected future term of license agreements over which we recognize revenue. Our estimates are based on contractual terms, historical experience and general industry practice. Revisions in the estimated terms of these license agreements have the effect of increasing or decreasing license fee revenue in the period of revision. As of December 31, 2009, no revisions to the estimated future terms of license agreements have been made and we do not expect revisions to the currently active agreements in the future.

Valuation of Stock-Based Compensation

We measure and recognize compensation expense for all stock-based awards to our employees and directors, including employee stock options, restricted stock awards and employee stock purchases related to our Employee Stock Purchase Plan (ESPP) based on estimated fair values. We estimate the fair value of stock-based awards using the Black Scholes option-pricing model. Option-pricing model assumptions such as expected volatility, risk-free interest rate and expected term impact the fair value estimate. Further, the estimated forfeiture rate impacts the amount of aggregate compensation recognized during the period. The fair value of stock-based awards is amortized over the vesting period of the awards using a straight-line method.

Expected volatilities are based on historical volatilities of our stock since traded options on Geron stock do not correspond to option terms and trading volume of options is limited. The expected term of options represents the period of time that options granted are expected to be outstanding. In deriving this assumption, we reviewed actual historical exercise and cancellation data and the remaining outstanding options not yet exercised or cancelled. The expected term of employees' purchase rights, under our ESPP, is equal to the purchase period. The risk-free interest rate is based on the U.S. Zero Coupon Treasury Strip Yields for the expected term in effect on the date of grant. Forfeiture rate was estimated based on historical experience and will be adjusted over the requisite service period based on the extent to which actual forfeitures differ, or are expected to differ, from their estimate.

We annually evaluate the assumptions used in estimating fair values of our stock-based awards by reviewing current trends in comparison to historical data. We have not revised the method in which we derive assumptions in order to estimate fair values of our stock-based awards. If factors change and we employ different assumptions in future periods, the stock-based compensation expense that we record for awards to employees and directors may differ significantly from what we have recorded in the current period.

Non-cash compensation expense recognized for stock-based awards to employees and directors was $10.6 million, $11.5 million and $11.4 million for the years ended December 31, 2009, 2008 and 2007, respectively. As of December 31, 2009, total non-cash compensation cost related to unvested stock-based awards not yet recognized was $17.6 million, net of estimated forfeitures, which is expected to be recognized over the next 41 months on a weighted-average basis.

For our non-employee stock-based awards, the measurement date on which the fair value of the stock-based award is calculated is equal to the earlier of (i) the date at which a commitment for performance by the counterparty to earn the equity instrument is reached or (ii) the date at which the counterparty's performance is complete. We recognized non-cash stock-based compensation expense of $190,000, zero and $1.5 million for the fair value of the vested portion of non-employee options, restricted stock awards and warrants in our consolidated statements of operations for 2009, 2008 and 2007, respectively.

Fair Value of Financial Instruments

We categorize assets and liabilities recorded at fair value on our consolidated balance sheet based upon the level of judgment associated with inputs used to measure their fair value. The categories are as follows:

Level 1 – Inputs are unadjusted, quoted prices in active markets for identical assets or liabilities at the measurement date. An active market for the asset or liability is a market in which transactions for the asset or liability occur with sufficient frequency and volume to provide pricing information on an ongoing basis.

Level 2 – Inputs (other than quoted market prices included in Level 1) are either directly or indirectly observable for the asset or liability through correlation with market data at the measurement date and for the duration of the instrument's anticipated life.

Level 3 – Inputs reflect management's best estimate of what market participants would use in pricing the asset or liability at the measurement date. Consideration is given to the risk inherent in the valuation technique and the risk inherent in the inputs to the model.

A financial instrument's categorization is based upon the lowest level of input that is significant to the fair value measurement. Following is a description of the valuation methodologies used for instruments measured at fair value on our consolidated balance sheet, including the category for such instruments.

We classify inputs to derive fair values for marketable debt securities available-for-sale and marketable investments in licensees as Level 1 and 2. Instruments classified as Level 1 include U.S. Treasury securities, U.S. government-sponsored enterprise securities, money market funds and publicly traded equity securities in active markets, representing 64% of total financial assets measured at fair value as of December 31, 2009. Instruments classified as Level 2 include corporate notes, representing 36% of total financial assets measured at fair value as of December 31, 2009. The price for each security at the measurement date is derived from various sources. Periodically, we assess the reasonableness of these sourced prices by comparing them to the prices provided by our portfolio managers from broker quotes. Historically, we have not experienced significant deviation between the sourced prices and our portfolio manager's prices.

Warrants to purchase common stock and non-employee options are normally traded less actively, have trade activity that is one way, and/or traded in less-developed markets and are therefore valued based upon models with significant unobservable market parameters, resulting in Level 3 categorization. The fair value for these instruments is calculated using the Black Scholes option-pricing model. The model's inputs reflect assumptions that market participants would use in pricing the instrument in a current period transaction. Inputs to the model include stock volatility, dividend yields, expected term of the derivatives and risk-free interest rates. See the following discussion, "Fair Value of Derivatives," for information on derivation of inputs to the model. Changes to the model's inputs are not changes to valuation methodologies, but instead reflect direct or indirect impacts from changes in market conditions. Accordingly, results from the valuation model in one period may not be indicative of future period measurements. Instruments classified as Level 3 include derivative liabilities, representing all of total financial liabilities measured at fair value as of December 31, 2009.

For a further discussion regarding fair value measurements, see Note 2 on Fair Value Measurements of Notes to Consolidated Financial Statements.

Fair Value of Derivatives

For warrants and non-employee options classified as assets or liabilities, the fair value of these instruments is recorded on the consolidated balance sheet at inception of such classification and marked to fair value at each financial reporting date. The change in fair value of the warrants and non-employee options is recorded in the consolidated statements of operations as an unrealized gain (loss) on fair value of derivatives. The warrants and non-employee options continue to be reported as an asset or liability until such time as the instruments are exercised or expire or are otherwise modified to remove the provisions which require this treatment, at which time these instruments are marked to fair value and reclassified from assets or liabilities to stockholders' equity. For warrants and non-employee options classified as permanent equity, the fair value of the warrants and non-employee options is recorded in stockholders' equity and no further adjustments are made.

Fair value of warrants and non-employee options is estimated using the Black Scholes option-pricing model. Use of this model requires us to make assumptions regarding stock volatility, dividend yields, expected term of the warrants and non-employee options and risk-free interest rates. Expected volatilities are based on historical volatilities of our stock. The expected term of warrants and non-employee options represent the remaining contractual term of the instruments. The risk-free interest rate is based on the U.S. Zero Coupon Treasury Strip Yields for the remaining term of the instrument. If factors change and we employ different assumptions in future periods, the fair value of these warrants and non-employee options reflected as of each balance sheet date and the resulting change in fair value that we record may differ significantly from what we have recorded in previous periods. As of December 31, 2009, we have not revised the method in which we derive assumptions in order to estimate fair values of warrants and non-employee options classified as assets or liabilities, and we do not expect revisions in the future.

Results of Operations

Our results of operations have fluctuated from period to period and may continue to fluctuate in the future, based upon the progress of our research and development efforts and variations in the level of expenses related to developmental efforts during any given period. Results of operations for any period may be unrelated to results of operations for any other period. In addition, historical results should not be viewed as indicative of future operating results. We are subject to risks common to companies in our industry and at our stage of development, including risks inherent in our research and development efforts, reliance upon our collaborative partners, enforcement of our patent and proprietary rights, need for future capital, potential competition and uncertainty of preclinical and clinical trial results or regulatory approvals or clearances. In order for a product candidate to be commercialized based on our research, we and our collaborators must conduct preclinical tests and clinical trials, demonstrate the efficacy and safety of our product candidates, obtain regulatory approvals or clearances and enter into manufacturing, distribution and marketing arrangements, as well as obtain market acceptance. We do not expect to receive revenues or royalties based on therapeutic products for a period of years, if at all.

Revenues

We recognized $450,000 of revenues from collaborative agreements in 2009 compared to $294,000 in 2008 and $672,000 in 2007. Revenues in 2009 primarily reflected revenue recognized under our collaboration with GE Healthcare, Ltd. (GE Healthcare). Revenues in 2008 and 2007 primarily reflected related party reimbursements we received from our joint venture in Hong Kong, TA Therapeutics, Ltd. (TAT), for scientific research services and revenue recognized under our collaboration with Corning Life Sciences. Since June 16, 2007, we have been including TAT's results in our consolidated financial statements and have eliminated any related party revenue when the source of funds has been derived from our contributions to the related party. Prior to that date, related party revenue earned under the contract to perform scientific research services for TAT was recognized as revenue as the services were performed.

We have entered into license and option agreements with companies involved with oncology, diagnostics, research tools, agriculture and biologics production. In each of these agreements, we have granted certain rights to our technologies. In connection with the agreements, we are entitled to receive license fees, option

fees, milestone payments and royalties on future sales, or any combination thereof. We recognized license fee revenues of $1.1 million, $2.1 million and $6.7 million in 2009, 2008 and 2007, respectively, related to our various agreements. License fee revenue in 2009 primarily reflected revenue recognized from upfront license fee payments under our collaboration with GE Healthcare. License fee revenue in 2008 primarily reflected the receipt of a $1.5 million milestone payment from Exeter Life Sciences, Inc. as a result of the final Risk Assessment released by the U.S. Food and Drug Administration (FDA) addressing food products made from cloned animals or their progeny. License fee revenue in 2007 primarily reflected the receipt of $5.0 million in milestone payments in connection with the collaboration and license agreement with Merck & Co., Inc. (Merck). We expect to recognize revenue of $700,000 in 2010 and $350,000 in 2011 related to our existing deferred revenue. Current revenues may not be predictive of future revenues.

We recognized royalty revenues of $160,000, $403,000 and $211,000 in 2009, 2008 and 2007, respectively, on product sales of telomerase detection and telomere measurement kits to the research-use-only market, telomerase-based research products and agricultural products. License and royalty revenues are dependent upon additional agreements being signed and future product sales.

Research and Development Expenses

Research and development expenses were $57.6 million, $53.7 million and $54.6 million for the years ended December 31, 2009, 2008 and 2007, respectively. The increase in 2009 compared to 2008 was primarily the result of higher personnel related costs of $2.3 million in connection with additional clinical operations personnel and increased clinical trial costs of $846,000 as a result of increased patient enrollment for imetelstat and GRNVAC1 trials. The decrease in 2008 compared to 2007 was primarily the net result of decreased manufacturing costs of $1.1 million as a result of timing of drug purchases for imetelstat and lower scientific supplies of $1.6 million, partially offset by increased clinical trial costs of $2.0 million associated with imetelstat and GRNVAC1. Overall, we expect research and development expenses to increase as we incur expenses related to clinical trials for imetelstat along with continued development of our human embryonic stem cell (hESC) programs.

Our research and development activities have arisen from our two major technology platforms, telomerase and hESCs. The oncology programs focus on treating or diagnosing cancer by targeting or detecting the presence of telomerase, either inhibiting activity of the telomerase enzyme, diagnosing cancer by detecting the presence of telomerase, or using telomerase as a target for therapeutic vaccines. Our core knowledge base in telomerase and telomere biology supports all these approaches, and our scientists may contribute to any or all of these programs in a given period. The following table briefly describes our cancer therapeutic product candidates and their stage of development:

Product	Product Description	Application	Development Stage	Patient Enrollment Status
Imetelstat (GRN163L)	Telomerase Inhibitor	Chronic Lymphoproliferative Diseases	Phase I Trial (single agent)	Completed
Imetelstat (GRN163L)	Telomerase Inhibitor	Solid Tumors	Phase I Trial (single agent)	Open
Imetelstat (GRN163L)	Telomerase Inhibitor	Multiple Myeloma*	Phase I Trial (single agent)	Completed
Imetelstat (GRN163L)	Telomerase Inhibitor	Non-Small Cell Lung Cancer*	Phase I Trial (combination)	Completed
Imetelstat (GRN163L)	Telomerase Inhibitor	Breast Cancer*	Phase I/II Trial (combination)	Open
Imetelstat (GRN163L)	Telomerase Inhibitor	Multiple Myeloma	Phase I Trial (combination)	Completed
GRNVAC1	Telomerase Cancer Vaccine	Acute Myelogenous Leukemia (AML)	Phase II Trial	Completed

* Initiation of Phase II clinical trials in multiple myeloma, non-small cell lung cancer, breast cancer and essential thrombocythemia is planned for 2010.

Interim data from the Phase I single agent trial in patients with relapsed and refractory multiple myeloma has shown that imetelstat inhibits telomerase both in the bulk myeloma fraction as well as the stem-cell containing fraction in patients' bone marrow. Interim data from the trial in patients with refractory, advanced solid cancers has shown that with a modified dosing schedule, the exposures to imetelstat exceeded the levels associated with inhibiting tumor growth from several models of human cancers. From the above trials, we have obtained data to assess the safety, tolerability, pharmacokinetics and pharmacodynamics of imetelstat. With this information, we have established the single agent Phase II dose and dosing schedule and are planning to advance imetelstat to Phase II clinical trials in four different malignancies in 2010.

Taking the results from the Duke University clinical studies in prostate cancer, hematologic malignancies and renal cell carcinoma, we optimized the vaccine manufacturing process and transferred it to a contract manufacturer. We are conducting a Phase II clinical trial of our telomerase vaccine using the prime/boost vaccination protocol in patients with acute myelogenous leukemia in complete clinical remission. Twenty patients in the study have received vaccination with GRNVAC1. Recent data from the trial showed that GRNVAC1 was safe and generally well tolerated over multiple vaccinations. Of the 20 patients in the study, 14 remain in complete clinical remission. Positive overall immune responses were detected in 12 out of 20 patients. No correlation has been made between positive immune response and patient remission status. Continued follow-up of patients for an additional nine months is required to estimate the impact of vaccination on disease-free survival.

Our hESC therapy programs focus on treating injuries and degenerative diseases with cell therapies based on cells derived from hESCs. A core of knowledge of hESC biology, as well as a significant continuing effort in deriving, growing, maintaining, and differentiating hESCs, underlies all aspects of this group of programs. Many of our researchers are allocated to more than one hESC program, and the percentage allocations of time change as the resource needs of individual programs vary. In our hESC therapy programs, we have concentrated our resources on several specific cell types, including:

- GRNOPC1, hESC-derived oligodendrocyte progenitor cells, for the treatment of acute spinal cord injury;
- GRNCM1, hESC-derived cardiomyocytes, for toxicology drug testing and the treatment of myocardial disease;
- GRNIC1, hESC-derived pancreatic islet ß cells for the treatment of diabetes;
- hESC-derived chondrocytes for the treatment of osteoarthritis;
- hESC-derived hepatocytes for ADME drug testing;
- hESC-derived dendritic cells for cancer immunotherapy and to prevent immune rejection of the other cell types used in therapeutic applications; and
- hESC-derived osteoblasts for the treatment of osteoporosis.

We have developed proprietary methods to grow, maintain, and scale the culture of undifferentiated hESCs that use feeder cell-free and serum-free media with chemically defined components. We have also developed scalable processes to differentiate these cells into therapeutically relevant cells. Currently, the human clinical trial of GRNOPC1, our hESC-derived therapy targeted for the treatment of acute spinal cord injury, has been placed on clinical hold by the FDA. We are in discussions with the agency to answer its questions and proceed with the clinical trial.

Research and development expenses incurred under each of these programs are as follows (in thousands):

	Year Ended December 31,		
	2009	2008	2007
Oncology	$ 29,543	$ 30,259	$ 29,916
hESC Therapies	28,074	23,405	24,708
Total	$ 57,617	$ 53,664	$ 54,624

At this time, we cannot provide reliable estimates of how much time or investment will be necessary to commercialize products from the programs currently in progress. Drug development in the United States is a process that includes multiple steps defined by the FDA under applicable statutes, regulations and guidance documents. After the preclinical research process of identifying, selecting and testing in animals a potential pharmaceutical compound, the clinical development process begins with the filing of an Investigational New Drug (IND) application. Clinical development typically involves three phases of study: Phase I, II and III. The most significant costs associated with clinical development are incurred in Phase III trials, which tend to be the longest and largest studies conducted during the drug development process. After the completion of a successful preclinical and clinical development program, a New Drug Application (NDA) or Biologics License Application (BLA) must be filed with the FDA, which includes, among other things, very large amounts of preclinical and clinical data and results and manufacturing-related information necessary to support requested approval of the product. The NDA/BLA must be reviewed and approved by the FDA.

According to industry statistics, it generally takes 10 to 15 years to research, develop and bring to market a new prescription medicine in the United States. In light of the steps and complexities involved, the successful development of our potential products is highly uncertain. Actual timelines and costs to develop and commercialize a product are subject to enormous variability and are very difficult to predict. In addition, various statutes and regulations also govern or influence the manufacturing, safety reporting, labeling, storage, record keeping and marketing of each product.

The lengthy process of seeking these regulatory reviews and approvals, and the subsequent compliance with applicable statutes and regulations, require the expenditure of substantial resources. Any failure by us to obtain, or any delay in obtaining, regulatory approvals could materially adversely affect our business. In responding to an NDA/BLA submission, the FDA may grant marketing approval, may request additional information, may deny the application if it determines that the application does not provide an adequate basis for approval, and may also refuse to review an application that has been submitted if it determines that the application does not provide an adequate basis for filing and review. We cannot provide assurance that any approval required by the FDA will be obtained on a timely basis, if at all.

For a more complete discussion of the risks and uncertainties associated with completing development of potential products, see the sub-section titled “Delays in the commencement of clinical testing of our current and potential product candidates could result in increased costs to us and delay our ability to generate revenues” and “Obtaining regulatory approvals to market our product candidates in the United States and other countries is a costly and lengthy process and we cannot predict whether or when we will be permitted to commercialize our product candidates” in Part I, Item 1A entitled “Risk Factors” and elsewhere in this annual report.

General and Administrative Expenses

General and administrative expenses were $14.3 million, $16.2 million and $15.8 million for the years ended December 31, 2009, 2008 and 2007, respectively. The decrease in 2009 from 2008 was primarily due to reduced legal costs associated with our patents and lower audit fees and consulting costs. The increase in 2008 from 2007 was primarily due to increased compensation expense related to stock options and restricted stock awards to employees, partially offset by reduced consulting expense and lower audit fees.

Unrealized Gain (Loss) on Fair Value of Derivatives

Unrealized gain (loss) on fair value of derivatives reflects a non-cash adjustment for changes in fair value of warrants to purchase common stock and options held by non-employees that are classified as current liabilities. Derivatives classified as assets or liabilities are marked to fair value at each financial reporting date with any resulting unrealized gain (loss) recorded in the consolidated statements of operations. The derivatives continue to be reported as an asset or liability until such time as the instruments are exercised or expire or are otherwise modified to remove the provisions which require them to be recorded as assets or liabilities, at which time these instruments are marked to fair value and reclassified from assets or liabilities to stockholders’ equity. We incurred unrealized gains of $157,000, $418,000 and $15.5 million for the years ended December 31, 2009, 2008 and 2007, respectively.

Unrealized gains in 2009 and 2008 were due to the reduced fair values of derivatives resulting from shortening of their contractual terms, decreases in the market value of our stock and changes in other inputs factored into the estimate of their fair value such as the volatility of our stock. Unrealized gains for 2007 were primarily the result of amendments executed in March 2007 to certain warrant agreements to address the presumption of net-cash settlement in the event that registered shares were not available to settle the warrants enabling reclassification of the decreasing fair value of those warrants from current liabilities to stockholders' equity. See Note 2 on Fair Value Measurements of Notes to Consolidated Financial Statements of this Form 10-K for further discussion of the fair value of derivatives.

Interest and Other Income

Interest income was $1.4 million, $5.5 million and $10.9 million for the years ended December 31, 2009, 2008 and 2007, respectively. The decrease in 2009 compared to 2008 was primarily due to decreased interest rates. The decrease in 2008 compared to 2007 was primarily due to decreased interest rates and lower cash and investment balances. Interest earned in future periods will depend on the size of our securities portfolio and prevailing interest rates.

In 2009, net realized losses of $26,000 and in 2007, net realized gains of $1,000 from sales of investments in licensees have been included in interest and other income. No sales of investments in licensees occurred in 2008. Also included in interest and other income for the years ended December 31, 2009, 2008 and 2007, were recognized losses of zero, $43,000 and $106,000, respectively, related to other-than-temporary declines in fair value of our investments in licensees.

Losses Recognized Under Equity Method Investment

In August 2008, we exchanged our equity interest in the Start Licensing, Inc. (Start) joint venture for equity interest in ViaGen, Inc. (ViaGen). In September 2008, we provided a loan of $1.5 million to ViaGen in connection with ViaGen's acquisition of an interest in an unrelated company. The proceeds of the loan did not fund prior ViaGen losses and represented additional financial support to ViaGen.

In September 2009, we provided $3.6 million as a new equity investment in ViaGen and also received $1.6 million from ViaGen in repayment of our loan, resulting in a net investment of $2.0 million. The new investment in 2009 did not fund prior ViaGen losses and represented additional financial support to ViaGen. In accordance with the equity method of accounting, we recognized losses of $1.3 million and $844,000 for 2009 and 2008, respectively, for our proportionate share of ViaGen's losses since providing the loan in September 2008. Previously, we had suspended the equity method of accounting for Start and ViaGen since our proportionate share of net losses exceeded the value of our investment and we had no commitments to provide financial support to either company.

Interest and Other Expense

Interest and other expense was $143,000, $93,000 and $102,000 for the years ended December 31, 2009, 2008 and 2007, respectively. In 2009, 2008 and 2007, interest and other expense was primarily comprised of bank charges. The increase in interest and other expense for 2009 compared to 2008 was primarily due to higher bank charges. The decrease in interest and other expense for 2008 compared to 2007 was primarily due to reduced bank charges as a result of lower cash and investment balances.

Deemed Dividend on Derivatives

In April 2009, we modified the terms of certain outstanding warrants held by an investor by extending the exercise term and, for certain of these warrants, reducing the exercise price. In connection with the modifications, we recognized a deemed dividend of approximately $190,000 in the consolidated statements of operations for the incremental fair value of the modified warrants, as calculated using the Black Scholes option-pricing model as of the modification date.

In exchange for the exercise of warrants in February 2007, we issued warrants to purchase 1,125,000 shares of common stock, at a premium, exercisable from June 2007. The new warrants were substantially the same as the A Warrants issued in connection with a financing in December 2006. The aggregate fair value of $3.7 million for these new instruments, as calculated using the Black Scholes option-pricing model, was recognized as a deemed dividend in the consolidated statements of operations.

In December 2007, we modified the terms of certain outstanding warrants by extending the exercise term and reducing the exercise price. The exercise term of the 2004 A Warrants to purchase 2,295,082 shares of common stock was extended to November 2011 and the exercise price was modified to $7.50 per share. The exercise terms of the 2006 A Warrants to purchase 3,000,000 shares of common stock and 2007 D Warrants to purchase 1,125,000 shares of common stock were extended to December 2011 and the exercise prices were modified to $7.50 per share. In connection with the modifications, we received $3.6 million in cash consideration from the institutional investors holding the outstanding warrants. We recognized a deemed dividend of $5.4 million in the consolidated statements of operations for the incremental fair value of the modified warrants, as estimated using the Black Scholes option-pricing model as of the modification date, net of the cash consideration received from the institutional investors for the modifications.

Net Loss Applicable to Common Stockholders

Net loss applicable to common stockholders was $70.4 million, $62.0 million and $45.8 million for the years ended December 31, 2009, 2008 and 2007, respectively. Overall net loss for 2009 increased compared to 2008 primarily due to decreased interest income, reduced revenues from milestones, increased research and development expenses and increased losses recognized for an equity method investment. Overall net loss for 2008 increased compared to 2007 primarily due to reduced revenues from milestones, lower interest income and decreased unrealized gains on derivatives.

Liquidity and Capital Resources

Cash, restricted cash, cash equivalents and marketable securities at December 31, 2009 were $167.1 million, compared to $163.7 million at December 31, 2008 and $208.4 million at December 31, 2007. We have an investment policy to invest these funds in liquid, investment grade securities, such as interest-bearing money market funds, U.S. government and agency securities, corporate notes, commercial paper, asset-backed securities and municipal securities. Our investment portfolio does not contain securities with exposure to sub-prime mortgages, collateralized debt obligations or auction rate securities and we have not to date recognized an other-than-temporary impairment on our marketable securities or any significant changes in aggregate fair value that would impact our cash resources or liquidity. To date, we have not experienced lack of access to our invested cash and cash equivalents; however, we cannot provide assurances that access to our invested cash and cash equivalents will not be impacted by adverse conditions in the financial markets. The increase in cash, restricted cash, cash equivalents and marketable securities in 2009 was the net result of the receipt of $45.9 million in net proceeds in February 2009 from an underwritten public offering of our common stock partially offset by use of cash for operations. The decrease in cash, restricted cash, cash equivalents and marketable securities in 2008 was due to use of cash for operations.

We estimate that our existing capital resources, interest income and equipment financing facility will be sufficient to fund our current level of operations through at least December 2011. However, our future capital requirements will be substantial. Changes in our research and development plans or other changes affecting our operating expenses or cash balances may result in the expenditure of available resources before such time. Factors that may require us to use our available capital resources sooner than we anticipate include:

- continued clinical development of our product candidates, imetelstat, GRNVAC1 and GRNOPC1;
- our ability to meaningfully reduce manufacturing costs of current product candidates;
- future clinical trial results;

- progress of product and preclinical development of our other product candidates, such as GRNCM1, GRNIC1 and GRNCHND1;
- cost and timing of regulatory approvals; and
- filing, maintenance, prosecution, defense and enforcement of patent claims and other intellectual property rights.

If our capital resources are insufficient to meet future capital requirements, we will need to raise additional capital to fund our operations. We intend to seek additional funding through strategic collaborations, public or private equity financings, equipment loans or other financing sources that may be available. However, we may be unable to raise sufficient additional capital when we need it, on favorable terms or at all. If we are unable to obtain adequate funds on reasonable terms, we may be required to curtail operations significantly or obtain funds by entering into financing, supply or collaboration agreements on unattractive terms or we may be required to relinquish rights to technology or product candidates or to grant licenses on terms that are unfavorable to us.

Cash Flows from Operating Activities

Net cash used in operations was $43.4 million, $42.0 million and $26.6 million in 2009, 2008 and 2007, respectively. The increase in net cash used for operations in 2009 compared to 2008 was primarily the result of increased research and development expenses associated with our clinical operations and reduced interest income. The increase in net cash used for operations in 2008 compared to 2007 was primarily the result of reduced interest income, payments to Biotechnology Research Corporation, our joint venture partner in TA Therapeutics, Ltd. for scientific research services and increased clinical trial expenses.

Cash Flows from Investing Activities

Net cash used in investing activities was $83.0 million for 2009. Net cash provided by investing activities was $5.5 million and $16.0 million in 2008 and 2007, respectively. The decrease in cash provided by investing activities in 2009 compared to 2008 primarily reflected increased marketable securities purchases. The decrease in net cash provided by investing activities in 2008 compared to 2007 primarily reflected reduced maturities of marketable securities.

For the three years ended December 31, 2009, we have purchased approximately $6.8 million in property and equipment, net of disposals, none of which was financed through equipment financing arrangements. As of December 31, 2009, no payments were due under our equipment financing facility. As of December 31, 2009, we had approximately $500,000 available for borrowing under our equipment financing facility. We intend to renew the commitment for a new equipment financing facility in 2010 to further fund equipment purchases. If we are unable to renew the commitment, we will use our cash resources for capital expenditures.

Cash Flows from Financing Activities

Net cash provided by financing activities in 2009 and 2007 was $51.6 million and $20.7 million, respectively. Net cash used in financing activities in 2008 was $162,000. Net cash provided by financing activities in 2009 primarily reflected receipt of approximately $45.9 million in net proceeds from a public offering of 7.25 million shares of our common stock at a public offering price of $6.60 per share after deducting underwriting discounts and commissions and offering expenses and receipt of net proceeds of $3.6 million from the sale of 550,000 shares of Geron common stock and warrants to purchase an additional 150,000 shares of common stock with an exercise price of $9.00 per share to certain institutional investors. Net cash used in financing activities in 2008 primarily reflected the repurchase of vested stock from certain employees to provide funds for minimum payroll tax withholding requirements. Net cash provided by financing activities in 2007 included $15.0 million in proceeds from the exercise of warrants issued to institutional investors in connection with a financing in December 2006 and $3.6 million in cash consideration from the modification of certain outstanding warrants in December 2007.

Contractual Obligations

As of December 31, 2009 our contractual obligations for the next five years, and thereafter were as follows:

	Principal Payments Due by Period				
Contractual Obligations (1)	Total	Less Than 1 Year	1-3 Years	4-5 Years	After 5 Years
	(In thousands)				
Equipment lease	$ 6	$ 6	$ —	$ —	$ —
Operating leases (2)	—	—	—	—	—
Research funding (3)	1,766	493	389	374	510
Total contractual cash obligations	$ 1,772	$ 499	$ 389	$ 374	$ 510

(1) This table does not include any milestone payments under research collaborations or license agreements as the timing and likelihood of such payments are not known. In addition, this table does not include payments under our severance plan if there were a change in control of the Company or severance payments to key employees under involuntary termination.

(2) In March 2008, we issued 742,158 shares of our common stock to the lessor of our premises at 200 and 230 Constitution Drive in payment of our monthly rental obligation from August 1, 2008 through July 31, 2012. In May 2007, we issued 210,569 shares of our common stock to the lessor of our premises at 149 Commonwealth Drive in payment of our monthly rental obligation from May 1, 2007 through April 30, 2010. The fair value of the common stock issuances has been recorded as a prepaid asset and is being amortized to rent expense on a straight-line basis over the lease periods. Future minimum payments under non-cancelable operating leases are zero through July 31, 2012, as a result of the prepayments of rent with our common stock.

(3) Research funding is comprised of sponsored research commitments at various laboratories around the world.

Recent Accounting Pronouncements

See Note 1 of Notes to Consolidated Financial Statements for a description of recent accounting pronouncements.

Off-Balance Sheet Arrangements

None.

ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

The following discussion about our market risk disclosures contains forward-looking statements. Actual results could differ materially from those projected in the forward-looking statements. We are exposed to market risk related to changes in interest rates and foreign currency exchange rates. We do not use derivative financial instruments for speculative or trading purposes.

Credit Risk. We place our cash, restricted cash, cash equivalents and marketable securities with six financial institutions in the United States. Deposits with banks may exceed the amount of insurance provided on such deposits. While we monitor the cash balances in our operating accounts and adjust the cash balances as appropriate, these cash balances could be impacted if the underlying financial institutions fail or could be subject to other adverse conditions in the financial markets. Financial instruments that potentially subject us to concentrations of credit risk consist primarily of marketable securities. Marketable securities currently consist of U.S. Treasury securities, U.S. government-sponsored enterprise securities and corporate notes. Our investment policy, approved by our Board of Directors, limits the amount we may invest in any one type of investment issuer, thereby reducing credit risk concentrations. We limit our credit and liquidity risks through our investment policy and through regular reviews of our portfolio against our policy. To date, we have not experienced any loss or lack of access to cash in our operating accounts or to our cash equivalents and marketable securities in our investment portfolios.

Interest Rate Risk. The primary objective of our investment activities is to manage our marketable securities portfolio to preserve principal and liquidity while maximizing the return on the investment portfolio through the full investment of available funds without significantly increasing risk. To achieve this objective, we invest in widely diversified investments consisting of both fixed rate and floating rate interest earning instruments, and both carry a degree of interest rate risk. Fixed rate securities may have their fair value adversely impacted due to a rise in interest rates, while floating rate securities may produce less income than expected if interest rates fall. Due in part to these factors, our future investment income may fall short of expectations due to changes in market conditions and in interest rates or we may suffer losses in principal if forced to sell securities which may have declined in fair value due to changes in interest rates.

The fair value of our cash equivalents and marketable securities at December 31, 2009 was $165.1 million. These investments include $33.4 million of cash equivalents which are due in less than 90 days, $77.0 million of short-term investments which are due in less than one year and $54.7 million of long-term investments which are due in one to two years. We primarily invest our marketable securities portfolio in short-term securities with at least an investment grade rating to minimize interest rate and credit risk as well as to provide for an immediate source of funds. Although changes in interest rates may affect the fair value of the marketable securities portfolio and cause unrealized gains or losses, such gains or losses would not be realized unless the investments are sold. Due to the nature of our investments, which are primarily U.S. Treasury securities, U.S. government-sponsored enterprise securities, corporate notes and money market funds, we have concluded that there is no material market risk exposure.

Foreign Currency Exchange Risk. Because we translate foreign currencies into United States dollars for reporting purposes, currency fluctuations can have an impact, though generally immaterial, on our results. We believe that our exposure to currency exchange fluctuation risk is insignificant primarily because our wholly-owned international subsidiary, Geron Bio-Med Ltd., satisfies its financial obligations almost exclusively in its local currency. As of December 31, 2009, there was an immaterial currency exchange impact from our intercompany transactions. As of December 31, 2009, we did not engage in foreign currency hedging activities.

ITEM 8. CONSOLIDATED FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

The following consolidated financial statements and the related notes thereto, of Geron Corporation and the Report of Independent Registered Public Accounting Firm, Ernst & Young LLP, are filed as a part of this Form 10-K.

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

The Board of Directors and Stockholders of Geron Corporation

We have audited the accompanying consolidated balance sheets of Geron Corporation as of December 31, 2009 and 2008, and the related consolidated statements of operations, stockholders' equity, and cash flows for each of the three years in the period ended December 31, 2009. 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 the 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 financial statements referred to above present fairly, in all material respects, the consolidated financial position of Geron Corporation at December 31, 2009 and 2008, and the consolidated results of its operations and its cash flows for each of the three years in the period ended December 31, 2009, in conformity with U.S. generally accepted accounting principles.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), Geron Corporation's internal control over financial reporting as of December 31, 2009, based on criteria established in Internal Control-Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission and our report dated February 26, 2010 expressed an unqualified opinion thereon.

/s/ Ernst & Young LLP

Palo Alto, California
February 26, 2010

GERON CORPORATION

CONSOLIDATED BALANCE SHEETS

	December 31, 2009	2008
	(In thousands, except share and per share data)	
ASSETS		
Current assets:		
Cash and cash equivalents	$ 34,601	$ 109,348
Restricted cash	791	816
Current portion of marketable securities	77,009	53,491
Interest and other receivables	1,318	882
Current portion of prepaid assets	4,060	3,709
Total current assets	117,779	168,246
Noncurrent portion of marketable securities	54,669	—
Noncurrent portion of prepaid assets	2,372	2,236
Investments in licensees	1,328	657
Property and equipment, net	3,938	4,386
Deposits and other assets	296	693
	$ 180,382	$ 176,218
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Accounts payable	$ 2,176	$ 2,414
Accrued compensation	1,757	1,398
Accrued liabilities (including amounts for related parties: 2009-none, 2008-$270)	1,925	2,248
Current portion of deferred revenue	700	27
Current portion of advance payment from related party for research and development, net	—	440
Fair value of derivatives	897	1,184
Total current liabilities	7,455	7,711
Noncurrent portion of deferred revenue	350	52
Commitments and contingencies		
Stockholders' equity:		
Preferred stock, $0.001 par value; 3,000,000 shares authorized; no shares issued and outstanding at December 31, 2009 and 2008	—	—
Common stock, $0.001 par value; 200,000,000 shares authorized; 92,521,946 and 81,070,464 shares issued and outstanding at December 31, 2009 and 2008, respectively	92	81
Additional paid-in capital	750,158	675,227
Accumulated deficit	(577,267)	(506,893)
Accumulated other comprehensive (loss) income	(406)	40
Total stockholders' equity	172,577	168,455
	$ 180,382	$ 176,218

See accompanying notes.

GERON CORPORATION

CONSOLIDATED STATEMENTS OF OPERATIONS

	Year Ended December 31,		
	2009	2008	2007
	(In thousands, except share and per share data)		
Revenues from collaborative agreements (including amounts from related parties: 2009-none, 2008-$79, 2007-$487)	$ 450	$ 294	$ 672
License fees and royalties (including amounts from related parties: 2009-none, 2008-$1,500, 2007-none)	1,276	2,509	6,950
Total revenues	1,726	2,803	7,622
Operating expenses:			
Research and development (including amounts for related parties: 2009-$1,755, 2008-$794, 2007-$941)	57,617	53,664	54,624
General and administrative	14,343	16,183	15,837
Total operating expenses	71,960	69,847	70,461
Loss from operations	(70,234)	(67,044)	(62,839)
Unrealized gain on fair value of derivatives	157	418	15,453
Interest and other income	1,374	5,542	10,791
Losses recognized under equity method investment	(1,338)	(844)	—
Interest and other expense	(143)	(93)	(102)
Net loss	(70,184)	(62,021)	(36,697)
Deemed dividend on derivatives	(190)	—	(9,081)
Net loss applicable to common stockholders	$ (70,374)	$ (62,021)	$ (45,778)
Basic and diluted net loss per share applicable to common stockholders:			
Net loss per share applicable to common stockholders	$ (0.80)	$ (0.79)	$ (0.62)
Shares used in computing net loss per share applicable to common stockholders	88,078,557	78,187,795	74,206,249

See accompanying notes.

GERON CORPORATION

CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY

	Common Stock		Additional Paid-In	Accumu-lated	Accumu-lated Other Comprehensive	Total Stockholders'
	Shares	Amount	Capital	Deficit	Income (Loss)	Equity
	(In thousands, except share data)					
Balances at December 31, 2006	70,449,058	$ 70	$ 573,156	$ (399,094)	$ (213)	$ 173,919
Net loss	—	—	—	(36,697)	—	(36,697)
Net change in unrealized gain (loss) on marketable securities and investments in licensees	—	—	—	—	235	235
Cumulative translation adjustment	—	—	—	—	11	11
Comprehensive loss						(36,451)
Reclassification of fair value of derivatives, net	—	—	21,974	—	—	21,974
Deemed dividend in connection with warrants to purchase common stock, including cash consideration	—	—	12,711	(9,081)	—	3,630
Stock-based compensation related to issuance of common stock and options in exchange for services	1,169,823	1	10,149	—	—	10,150
Issuance of common stock upon exercise of warrants	3,470,204	4	15,147	—	—	15,151
Issuance of common stock under employee stock plans, net	881,985	1	4,870	—	—	4,871
Stock-based compensation for equity-based awards to employees and directors	—	—	11,367	—	—	11,367
401(k) contribution	91,369	—	1,063	—	—	1,063
Balances at December 31, 2007	76,062,439	76	650,437	(444,872)	33	205,674
Net loss	—	—	—	(62,021)	—	(62,021)
Net change in unrealized gain (loss) on marketable securities and investments in licensees	—	—	—	—	16	16
Cumulative translation adjustment	—	—	—	—	(9)	(9)
Comprehensive loss						(62,014)
Stock-based compensation related to issuance of common stock in exchange for services	2,294,685	2	9,789	—	—	9,791
Issuance of common stock under employee stock plans, net	2,506,424	3	2,463	—	—	2,466
Stock-based compensation for equity-based awards to employees and directors	—	—	11,493	—	—	11,493
401(k) contribution	206,916	—	1,045	—	—	1,045
Balances at December 31, 2008	81,070,464	81	675,227	(506,893)	40	168,455
Net loss	—	—	—	(70,184)	—	(70,184)
Net change in unrealized gain (loss) on marketable securities and investments in licensees	—	—	—	—	(445)	(445)
Cumulative translation adjustment	—	—	—	—	(1)	(1)
Comprehensive loss						(70,630)
Issuance of common stock in connection with public offering, net of issuance costs of $1,916	7,250,000	7	45,926	—	—	45,933
Issuance of common stock in connection with private offering, net of issuance costs of $18	550,000	1	3,584	—	—	3,585
Reclassification of fair value of derivatives, net	—	—	130	—	—	130
Deemed dividend in connection with amendments to warrants to purchase common stock	—	—	190	(190)	—	—
Stock-based compensation related to issuance of common stock and options in exchange for services	1,272,438	1	8,114	—	—	8,115
Issuance of common stock under employee stock plans, net	2,110,418	2	5,253	—	—	5,255
Stock-based compensation for equity-based awards to employees and directors	—	—	10,575	—	—	10,575
401(k) contribution	268,626	—	1,159	—	—	1,159
Balances at December 31, 2009	92,521,946	$ 92	$ 750,158	$ (577,267)	$ (406)	$ 172,577

See accompanying notes.

53

GERON CORPORATION

CONSOLIDATED STATEMENTS OF CASH FLOWS

	Year Ended December 31,		
	2009	2008	2007
	(In thousands)		
Cash flows from operating activities			
Net loss	$ (70,184)	$ (62,021)	$ (36,697)
Adjustments to reconcile net loss to net cash used in operating activities:			
Depreciation and amortization	1,753	2,017	1,667
Accretion and amortization on investments, net	926	(1,153)	(3,227)
Loss (gain) on retirement/sale of property and equipment	130	(6)	—
Issuance of common stock and warrants in exchange for services by non-employees	4,866	2,068	5,674
Stock-based compensation for employees and directors	10,575	11,493	11,367
Amortization related to 401(k) contributions	494	405	263
Loss on investments in licensees	1,364	887	106
Unrealized gain on fair value of derivatives	(157)	(418)	(15,453)
Changes in assets and liabilities:			
Interest and other receivables	(436)	(94)	487
Prepaid assets	3,019	6,394	2,583
Investments in licensees	—	—	5
Deposits and other assets	(99)	2	(371)
Accounts payable	(56)	(443)	898
Accrued compensation	4,166	2,332	2,855
Accrued liabilities	(265)	(1,912)	2,418
Deferred revenue	971	(240)	(945)
Advance payment from related party for research and development	(440)	(1,287)	1,727
Translation adjustment	(1)	(9)	11
Net cash used in operating activities	(43,374)	(41,985)	(26,632)
Cash flows from investing activities			
Restricted cash transfer	25	1,624	(1,910)
Loan to related party	—	(1,500)	—
Investment in licensee, net	(2,009)	—	—
Proceeds from sale of property and equipment	—	15	—
Purchases of property and equipment	(1,435)	(2,337)	(2,990)
Purchases of marketable securities	(200,109)	(78,332)	(154,876)
Proceeds from maturities of marketable securities	120,524	86,000	175,816
Proceeds from sale of investment in licensees	1	—	—
Net cash (used in) provided by investing activities	(83,003)	5,470	16,040
Cash flows from financing activities			
Repurchase of common stock	—	(455)	—
Proceeds from issuance of common stock and warrants, net of issuance costs	51,630	293	20,735
Net cash provided by (used in) financing activities	51,630	(162)	20,735
Net (decrease) increase in cash and cash equivalents	(74,747)	(36,677)	10,143
Cash and cash equivalents, at beginning of year	109,348	146,025	135,882
Cash and cash equivalents, at end of year	$ 34,601	$ 109,348	$ 146,025

See accompanying notes.

GERON CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

1. ORGANIZATION AND SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Organization

Geron Corporation (“we” or “Geron”) was incorporated in the State of Delaware on November 29, 1990. We are a biopharmaceutical company that is developing first-in-class biopharmaceuticals for the treatment of cancer and chronic degenerative diseases, including spinal cord injury, heart failure and diabetes. We are advancing an anti-cancer drug and a cancer vaccine that target the enzyme telomerase through multiple clinical trials in different cancers. The products are based on our core expertise in telomerase and human embryonic stem cells. 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 our management to obtain additional financing as required.

Principles of Consolidation

The consolidated financial statements include the accounts of Geron, our wholly-owned subsidiary, Geron Bio-Med Ltd. (Geron Bio-Med), a United Kingdom company, and our majority-owned subsidiary, TA Therapeutics, Ltd. (TAT), a Hong Kong company. We have eliminated intercompany accounts and transactions. We prepare the financial statements of Geron Bio-Med using the local currency as the functional currency. We translate the assets and liabilities of Geron Bio-Med at rates of exchange at the balance sheet date and translate income and expense items at average monthly rates of exchange. The resultant translation adjustments are included in accumulated other comprehensive income (loss), a separate component of stockholders’ equity. The functional currency for TAT is U.S. dollars.

Net Loss Per Share

Basic earnings (loss) per share is calculated based on the weighted average number of shares of common stock outstanding during the period. Diluted earnings (loss) per share is calculated based on the weighted average number of shares of common stock and dilutive securities outstanding during the period. Potential dilutive securities primarily consist of outstanding employee stock options, restricted stock and warrants to purchase common stock and have been determined using the treasury stock method at an average market price during the period.

Because we were in a net loss position, diluted earnings per share excludes the effects of potential dilutive securities. Had we been in a net income position, diluted earnings per share would have included the shares used in the computation of basic net loss per share as well as an additional 1,260,417, 300,011 and 2,063,459 shares for 2009, 2008 and 2007, respectively, related to outstanding options, restricted stock and warrants (as determined using the treasury stock method at the estimated average market value).

Use of Estimates

The preparation of financial statements in conformity with accounting principles generally accepted in the United States requires us to make estimates and assumptions that affect the amounts reported in the financial statements and accompanying notes. On a regular basis, management evaluates these estimates and assumptions. Actual results could differ from those estimates.

Fair Value of Financial Instruments

Cash Equivalents and Marketable Securities

We consider all highly liquid investments with an original maturity of three months or less to be cash equivalents. We are subject to credit risk related to our cash equivalents and marketable securities. We place our cash and cash equivalents in money market funds. Our investments include U.S. Treasury securities, U.S. government-sponsored enterprise securities and corporate notes with original maturities ranging from four to 24 months.

GERON CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

We classify our marketable debt securities as available-for-sale. We record available-for-sale securities at fair value with unrealized gains and losses reported in accumulated other comprehensive income (loss) in stockholders' equity. Realized gains and losses are included in interest and other income and are derived using the specific identification method for determining the cost of securities sold and have been insignificant to date. Dividend and interest income are recognized when earned and included in interest and other income in our consolidated statements of operations. We recognize a charge when the declines in the fair values of our available-for-sale securities below the amortized cost basis are judged to be other-than-temporary. We consider various factors in determining whether to recognize an other-than-temporary charge, including whether we intend to sell the security or whether it is more likely than not that we would be required to sell the security. Declines in market value associated with credit losses judged as other-than-temporary result in a charge to interest and other income. Other-than-temporary charges not related to credit losses are included in accumulated other comprehensive income (loss) in stockholders' equity. No other-than-temporary impairment charges were recorded for our available-for-sale securities for the years ended December 31, 2009, 2008 and 2007. See Note 2 on Fair Value Measurements.

Marketable and Non-Marketable Investments in Licensees

Investments in non-marketable nonpublic companies, in which we own less than 20% of the outstanding voting stock and do not otherwise have the ability to exert significant influence over the investees, are carried at cost, as adjusted for other-than-temporary impairments. Investments in marketable equity securities are carried at fair value as of the balance sheet date with unrealized gains and losses reported in accumulated other comprehensive income (loss) in stockholders' equity. Realized gains or losses are included in interest and other income and are derived using the specific identification method.

We apply the equity method of accounting for investments in licensees in which we own more than 20% of the outstanding voting stock or otherwise have the ability to exert significant influence over the investees. Under this method, we increase (decrease) the carrying value of our investment by a proportionate share of the investee's earnings (losses). If losses exceed the carrying value of the investment, losses are then applied against any advances to the investee, including any commitment to provide financial support, until those amounts are reduced to zero. The equity method is then suspended until the investee has earnings. Any proportionate share of investee earnings is first applied to the share of accumulated losses not recognized during the period the equity method was suspended.

We monitor our investments in licensees for impairment on a quarterly basis and make appropriate reductions in carrying values when such impairments are determined to be other-than-temporary. Other-than-temporary charges are included in interest and other income. Factors used in determining whether an other-than-temporary charge should be recognized include, but are not limited to, the current business environment including competition and uncertainty of financial condition; going concern considerations such as the rate at which the investee company utilizes cash, and the investee company's ability to obtain additional private financing to fulfill its stated business plan; the need for changes to the investee company's existing business model due to changing business environments and its ability to successfully implement necessary changes; and the general progress toward product development, including clinical trial results. See Note 2 on Fair Value Measurements.

Fair Value of Derivatives

For warrants and non-employee options classified as assets or liabilities, the fair value of these instruments is recorded on the consolidated balance sheet at inception of such classification and adjusted to fair value at each financial reporting date. The change in fair value of the warrants and non-employee options is recorded in the consolidated statements of operations as unrealized gain (loss) on fair value of derivatives. Fair value of warrants and non-employee options is estimated using the Black Scholes option-pricing model. The warrants and non-employee options continue to be reported as an asset or liability until such time as the instruments are exercised or expire or are otherwise modified to remove the provisions which require this treatment, at which time these instruments are marked to fair value and reclassified from assets or liabilities to stockholders' equity. For warrants and non-employee options classified as permanent equity, the fair value of the warrants and non-employee options is recorded in stockholders' equity and no further adjustments are made. See Note 2 on Fair Value Measurements.

GERON CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

Revenue Recognition

We have several license agreements with various oncology, diagnostics, research tools, agriculture and biologics production companies. With certain of these agreements, we receive nonrefundable license payments in cash or equity securities, option payments in cash or equity securities, royalties on future sales of products, milestone payments, or any combination of these items. Upfront nonrefundable signing, license or non-exclusive option fees are recognized as revenue when rights to use the intellectual property related to the license have been delivered and over the term of the agreement if we have continuing performance obligations. Milestone payments, which are subject to substantive contingencies, are recognized upon completion of specified milestones, representing the culmination of the earnings process, according to contract terms. Royalties are generally recognized upon receipt of the related royalty payment. Deferred revenue represents the portion of research and license payments received which has not been earned. When payments are received in equity securities, we do not recognize any revenue unless such securities are determined to be realizable in cash.

We recognize revenue under collaborative agreements as the related research and development costs for services are rendered. We recognize related party revenue under collaborative agreements as the related research and development costs for services are rendered and when the source of funds have not been derived from our contributions to the related party.

Restricted Cash

The components of restricted cash are as follows:

	December 31,	
	2009	2008
	(In thousands)	
Certificate of deposit for unused equipment line of credit	$ 530	$ 530
Certificate of deposit for credit card purchases	261	258
Funds held in trust for creditors of TA Therapeutics, Ltd.	—	28
	$ 791	$ 816

Research and Development Expenses

All research and development costs are expensed as incurred. The value of acquired in-process research and development is charged to research and development expense on the date of acquisition, if not acquired in connection with a business combination. Research and development expenses include, but are not limited to, acquired in-process technology deemed to have no alternative future use, payroll and personnel expense, lab supplies, preclinical studies, raw materials to manufacture clinical trial drugs, manufacturing costs for research and clinical trial materials, sponsored research at other labs, consulting, costs to maintain technology licenses and research-related overhead.

Depreciation and Amortization

We record property and equipment at cost and calculate depreciation using the straight-line method over the estimated useful lives of the assets, generally four years. Leasehold improvements are amortized over the shorter of the estimated useful life or remaining term of the lease.

Stock-Based Compensation

Geron maintains various stock incentive plans under which stock options and restricted stock awards are granted to employees, non-employee members of the Board of Directors and consultants. We also have an employee stock purchase plan for all eligible employees. We recognize compensation expense on a straight-line basis for stock-based awards granted after January 1, 2006, plus unvested awards granted prior to January 1, 2006 based on the grant-date fair value estimated using accounting guidance in effect at that time and following the straight-line attribution method.

GERON CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

We use the Black Scholes option-pricing valuation model to estimate the grant-date fair value of our stock-based awards. For additional information, see Note 8 on Stockholders' Equity. The determination of fair value for stock-based awards on the date of grant using an option-pricing model is affected by our stock price as well as assumptions regarding a number of complex and subjective variables. These variables include, but are not limited to, our expected stock price volatility over the term of the awards and actual and projected employee exercise behaviors. The stock-based compensation expense related to restricted stock awards is determined using the fair value of Geron common stock on the date of grant and reduced for estimated forfeitures as applicable. The fair value is amortized as compensation expense over the service period of the award on a straight-line basis.

For our non-employee stock-based awards, the measurement date on which the fair value of the stock-based award is calculated is equal to the earlier of (i) the date at which a commitment for performance by the counterparty to earn the equity instrument is reached or (ii) the date at which the counterparty's performance is complete. We recognize stock-based compensation expense for the fair value of the vested portion of non-employee awards in our consolidated statements of operations.

Comprehensive Loss

Comprehensive loss is comprised of net loss and other comprehensive income (loss). Other comprehensive income (loss) includes certain changes in stockholders' equity which are excluded from net loss.

The components of accumulated other comprehensive income (loss) are as follows:

	December 31,	
	2009	2008
	(In thousands)	
Unrealized (loss) gain on available-for-sale securities and marketable investments in licensees	$ (234)	$ 211
Foreign currency translation adjustments	(172)	(171)
	$ (406)	$ 40

In 2009 and 2008, we recognized other-than-temporary impairment charges of none and $43,000, respectively, related to our investments in licensees. In addition, $26,000 and none of previously unrecognized unrealized loss was eliminated from accumulated other comprehensive income (loss) in 2009 and 2008, respectively. See Note 2 on Fair Value Measurements.

Income Taxes

We maintain deferred tax assets and liabilities that reflect the net tax effects of temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and the amounts used for income tax purposes and are subject to tests of recoverability. Our deferred tax assets include net operating loss carryforwards, research credits and capitalized research and development. Deferred tax assets and liabilities are measured using enacted tax rates expected to apply to taxable income in the years in which those temporary differences are expected to be recovered or settled. Our net deferred tax asset has been fully offset by a valuation allowance because of our history of losses. Any potential accrued interest and penalties related to unrecognized tax benefits within operations would be recorded as income tax expense. To date, there have been no interest or penalties charged to us related to the underpayment of income taxes.

Concentrations of Customers and Suppliers

The majority of our revenues was earned in the United States. One new customer accounted for 46% of our 2009 revenues. One related party customer accounted for approximately 54% of our 2008 revenues. One existing customer accounted for 79% of our 2007 revenues.

We contract third-party manufacturers to produce GMP-grade drugs and vaccines for preclinical and clinical studies. We also contract for raw materials to supply those manufacturers. Certain development and clinical activities may be delayed if we are unable to obtain sufficient quantities of raw materials or GMP-grade drugs and vaccines from our third-party sources or other third-party sources.

GERON CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

Recent Accounting Pronouncement

In October 2009, the Financial Accounting Standards Board issued authoritative guidance addressing revenue arrangements with multiple deliverables. The guidance eliminates the criterion for objective and reliable evidence of fair value for the undelivered products or services. Instead, revenue arrangements with multiple deliverables should be divided into separate units provided the deliverables meet certain criteria. This guidance also eliminates the use of the residual method of allocation and requires that the arrangement consideration be allocated at the inception of the arrangement to all deliverables based on their relative selling price. The guidance also provides a hierarchy for estimating the selling price of each of the deliverables. The new guidance is applicable prospectively for any arrangements we enter into after January 1, 2011. We are evaluating the potential impact, if any, of this new guidance on our consolidated financial statements.

2. FAIR VALUE MEASUREMENTS

We categorize assets and liabilities recorded at fair value on our consolidated balance sheet based upon the level of judgment associated with inputs used to measure their fair value. The categories are as follows:

Level 1	Inputs are unadjusted, quoted prices in active markets for identical assets or liabilities at the measurement date. An active market for the asset or liability is a market in which transactions for the asset or liability occur with sufficient frequency and volume to provide pricing information on an ongoing basis.
Level 2	Inputs (other than quoted market prices included in Level 1) are either directly or indirectly observable for the asset or liability through correlation with market data at the measurement date and for the duration of the instrument’s anticipated life.
Level 3	Inputs reflect management’s best estimate of what market participants would use in pricing the asset or liability at the measurement date. Consideration is given to the risk inherent in the valuation technique and the risk inherent in the inputs to the model.

A financial instrument’s categorization within the valuation hierarchy is based upon the lowest level of input that is significant to the fair value measurement. Following is a description of the valuation methodologies used for instruments measured at fair value on our consolidated balance sheet, including the category for such instruments.

Cash Equivalents and Marketable Securities Available-for-Sale

Where quoted prices are available in an active market, securities are categorized as Level 1. Examples of such Level 1 securities include highly liquid U.S. Treasury securities, U.S. government-sponsored enterprise securities and money market funds. If quoted market prices are not available for the specific security, then fair values are estimated by using pricing models, quoted prices of securities with similar characteristics or discounted cash flows. Examples of such Level 2 instruments include corporate notes, asset-backed securities and commercial paper.

GERON CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

Marketable securities by security type at December 31, 2009 were as follows:

	Cost	Gross Unrealized Gains	Gross Unrealized Losses	Estimated Fair Value
	(In thousands)			
Included in cash and cash equivalents:				
Money market funds	$ 33,395	$ —	$ —	$ 33,395
Restricted cash:				
Certificates of deposit	$ 791	$ —	$ —	$ 791
Marketable securities:				
U.S. Treasury securities (due in less than 1 year)	$ 58,146	$ 20	$ (7)	$ 58,159
Government-sponsored enterprise securities (due in 1 to 2 years)	14,058	—	(37)	14,021
Corporate notes (due in less than 1 year)	18,847	11	(8)	18,850
Corporate notes (due in 1 to 2 years)	40,861	—	(213)	40,648
	$ 131,912	$ 31	$ (265)	$ 131,678

Marketable securities by security type at December 31, 2008 were as follows:

	Cost	Gross Unrealized Gains	Gross Unrealized Losses	Estimated Fair Value
	(In thousands)			
Included in cash and cash equivalents:				
Money market funds	$ 106,046	$ —	$ —	$ 106,046
U.S. Treasury securities	1,254	—	—	1,254
	$ 107,300	$ —	$ —	$ 107,300
Restricted cash:				
Certificates of deposit	$ 788	$ —	$ —	$ 788
Money market funds	28	—	—	28
	$ 816	$ —	$ —	$ 816
Marketable securities:				
U.S. Treasury securities (due in less than 1 year)	$ 10,314	$ 55	$ —	$ 10,369
Government-sponsored enterprise securities (due in less than 1 year)	25,764	87	—	25,851
Commercial paper (due in less than 1 year)	17,176	95	—	17,271
Investments in licensees	27	—	(26)	1
	$ 53,281	$ 237	$ (26)	$ 53,492

Marketable securities with unrealized losses at December 31, 2009 and 2008 were as follows:

	Less Than 12 Months		12 Months or Greater		Total	
	Estimated Fair Value	Gross Unrealized Losses	Estimated Fair Value	Gross Unrealized Losses	Estimated Fair Value	Gross Unrealized Losses
	(In thousands)					
As of December 31, 2009:						
U.S. Treasury securities (due in less than 1 year)	$ 18,859	$ (7)	$ —	$ —	$ 18,859	$ (7)
Government-sponsored enterprise						

securities (due in 1 to 2 years)	14,021	(37)	—	—	14,021	(37)
Corporate notes (due in less than 1 year)	7,524	(8)	—	—	7,524	(8)
Corporate notes (due in 1 to 2 years)	40,648	(213)	—	—	40,648	(213)
	$ 81,052	$ (265)	$ —	$ —	$ 81,052	$ (265)
As of December 31, 2008:						
Investments in licensees	$ —	$ —	$ 1	$ (26)	$ 1	$ (26)

GERON CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

The gross unrealized losses related to U.S Treasury securities, government-sponsored enterprise securities and corporate notes as of December 31, 2009 were due to changes in interest rates. The gross unrealized losses related to investments in licensees as of December 31, 2008 were a result of declining valuations for those biopharmaceutical companies. We determined that the gross unrealized losses on our marketable securities as of December 31, 2009 and 2008 were temporary in nature. We review our investments quarterly to identify and evaluate whether any investments have indications of possible impairment. Factors considered in determining whether a loss is temporary include the length of time and extent to which the fair value has been less than the cost basis, the financial condition and near-term prospects of the investee, and whether we intend to sell the security or whether it is more likely than not that we would be required to sell the security.

Marketable and Non-Marketable Investments in Licensees

Where quoted prices are available in an active market, securities are categorized as Level 1. Level 1 securities include publicly traded equities. Significant investments in licensees accounted for using the equity method of accounting or equity securities in non-marketable companies are not measured at fair value and are not assigned a category level.

We recognized charges of none, $43,000 and $106,000 in 2009, 2008 and 2007, respectively, related to other-than-temporary declines in the fair values of certain of our investments in licensees. As of December 31, 2009 and 2008, the carrying values of our investments in non-marketable nonpublic companies were $1,328,000 and $656,000, respectively. We recognized net realized losses of $26,000 for 2009 and net realized gains of $1,000 for 2007 related to sales of investments in licensees. In connection with the sales, $26,000 of previously unrecognized unrealized loss and $2,000 of previously unrecognized unrealized gain was eliminated from accumulated other comprehensive income (loss) for 2009 and 2007, respectively. No sales of investments in licensees occurred in 2008. See Note 3 on Joint Venture and Related Party Transactions for further discussion of investments in licensees.

Derivatives

Warrants to purchase common stock and non-employee options are normally traded less actively, have trade activity that is one way, and/or traded in less-developed markets and are therefore valued based upon models with significant unobservable market parameters, resulting in Level 3 categorization.

The fair value of derivatives has been calculated at each reporting date using the Black Scholes option-pricing model with the following assumptions:

	December 31,	
	2009	2008
Dividend yield	None	None
Expected volatility range	0.607 to 0.632	0.749 to 0.758
Risk-free interest rate range	0.06% to 2.69%	0.57% to 1.71%
Expected term	4 mos to 5 yrs	1 yr to 6 yrs

The expected volatility range is based on historical volatilities of our stock since traded options on Geron stock do not correspond to derivatives' terms and trading volume of Geron options is limited. The expected term of derivatives is equal to the remaining contractual term of the instrument. The risk-free interest rate range is based on the U.S. Zero Coupon Treasury Strip Yields for the expected term in effect on the reporting date. Dividend yield is based on historical cash dividend payments, which have been none to date.

As of December 31, 2009 and 2008, the following warrants and non-employee options to purchase common stock were considered derivatives and classified as current liabilities:

		Number of Shares at December 31,				Fair Value at December 31,	
Issuance Date	Exercise Price	2009	2008	Exercisable Date	Expiration Date	2009	2008
						(In thousands)	
April 2005	$ 7.95	351,852	351,852	April 2005	April 2010	$ 58	$ 295
March 2005	$ 6.39	284,600	310,000	January 2007	March 2015	839	889
		636,452	661,852			$ 897	$ 1,184

61

GERON CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

We have issued certain warrants to purchase shares of our common stock in connection with equity financings pursuant to effective shelf registration statements, and the holders of such warrants have the right to exercise them for cash and to receive registered shares upon such exercise. In connection with the issuance of these warrants, we agreed to file timely any reports required under the Securities Exchange Act of 1934, as amended, to enable the delivery of registered shares upon exercise of these warrants.

In March and July 2007, we amended certain warrant agreements to address the presumption of net-cash settlement in the event that registered shares are not available to settle the warrants. The amendments enable the settlement of such warrants to be within our control. In particular, the amendments: (i) preclude the warrant holders from exercising the warrants or require the warrant holders to exercise the warrants on a net-share settled basis to enable the issuance of shares that qualify for an exemption from registration under Section 3(a)(9) of the Securities Act of 1933, as amended, when there is no registration statement in effect with respect to the shares underlying the warrants; (ii) provide an explicit clarification that the warrants are not to be settled in cash; and (iii) provide that we shall use reasonable best efforts to maintain currently effective shelf registration statements, instead of requiring a commitment to maintain the effectiveness of currently effective shelf registration statements. On the effective date of these amendments, the change in fair value from the most recent reporting date to the effective date of the amendments was recorded in the consolidated statements of operations and the then-current fair value for the warrants of $23,862,000 was reclassified from liabilities to equity. Any changes in fair value subsequent to these reclassifications shall not be recognized as long as the warrants continue to be classified as equity. There were no reclassifications from liabilities to equity for warrants in 2009 or 2008.

Non-employee options whose performance obligations are complete are classified as derivative liabilities on our consolidated balance sheet. Upon the exercise of these options, the instruments are marked to fair value and reclassified from derivative liabilities to stockholders' equity. In 2009, reclassification of $130,000 from liabilities to equity has been included on our consolidated balance sheet for such non-employee option exercises. In 2007, net reclassification of $1,888,000 from equity to liabilities has been included on our consolidated balance sheet to reflect completion of performance obligations for certain non-employee options. No reclassifications were made in 2008 for non-employee options.

Fair Value on a Recurring Basis

The following table presents information about our financial assets and liabilities that are measured at fair value on a recurring basis as of December 31, 2009, and indicates the fair value category assigned.

	Fair Value Measurements at Reporting Date Using			
(In thousands)	Quoted Prices in Active Markets for Identical Assets Level 1	Significant Other Observable Inputs Level 2	Significant Unobservable Inputs Level 3	Total
Assets				
Money market funds (1)	$ 33,395	$ —	$ —	$ 33,395
U.S. Treasury securities (2)	58,159	—	—	58,159
Government-sponsored enterprise securities (2)	14,021	—	—	14,021
Corporate notes (2)	—	59,498	—	59,498
Total	$ 105,575	$ 59,498	$ —	$ 165,073
Liabilities				
Derivatives (3)	$ —	$ —	$ 897	$ 897

(1) Included in cash and cash equivalents on our consolidated balance sheet.

(2) Included in marketable securities on our consolidated balance sheet.

(3) Included in fair value of derivatives on our consolidated balance sheet.

GERON CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

Changes in Level 3 Recurring Fair Value Measurements

The table below includes a rollforward of the balance sheet amounts for the year ended December 31, 2009 (including the change in fair value), for financial instruments in the Level 3 category. When a determination is made to classify a financial instrument within Level 3, the determination is based upon the significance of the unobservable parameters to the overall fair value measurement. However, Level 3 financial instruments typically include, in addition to the unobservable components, observable components (that is, components that are actively quoted and can be validated to external sources). Accordingly, the gains and losses in the table below include changes in fair value due in part to observable factors that are part of the methodology.

	Fair Value Measurements Using Significant Unobservable Inputs (Level 3) Year Ended December 31, 2009					
(In thousands)	Fair Value at December 31, 2008	Total Unrealized Gains Included in Earnings, net (1)	Purchases, Sales, Issuances, Settlements, net	Transfers In and/or Out of Level 3	Fair Value at December 31, 2009	Change in Unrealized Gains Related to Financial Instruments Held at December 31, 2009 (1)
Derivative liabilities	$1,184	$(157)	$—	$(130)	$897	$(215)

(1) Reported as unrealized gain on fair value of derivatives in our consolidated statements of operations.

Credit Risk

We place our cash, restricted cash, cash equivalents and marketable securities with six financial institutions in the United States. Generally, these deposits may be redeemed upon demand and therefore, bear minimal risk. Deposits with banks may exceed the amount of insurance provided on such deposits. Financial instruments that potentially subject us to concentrations of credit risk consist primarily of marketable securities. Marketable securities currently consist of investment grade U.S. Treasury securities, U.S. government-sponsored enterprise securities and corporate notes. Our investment policy, approved by the Board of Directors, limits the amount we may invest in any one type of investment issuer, thereby reducing credit risk concentrations.

3. JOINT VENTURE AND RELATED PARTY TRANSACTIONS

TA Therapeutics, Ltd.

In March 2005, we and the Biotechnology Research Corporation (BRC), a subsidiary of Hong Kong University of Science and Technology, established a joint venture company in Hong Kong called TA Therapeutics, Ltd. (TAT). TAT conducts research and was established to commercially develop products that utilize telomerase activator drugs to restore the regenerative and functional capacity of cells in various organ systems that have been impacted by senescence, injury or chronic disease. On June 15, 2007, we and BRC entered into an agreement to restructure the TAT joint venture. Under the amended agreements, we direct the preclinical and drug development activities, own a 75% voting interest and exercise control over the company. Upon any winding up of TAT, all intellectual property of TAT is assigned to us and BRC is entitled to royalties on sales of future products developed from TAT's efforts up to a fixed amount based on BRC's cash contributions. Upon a winding up of TAT, if the assets available for distribution, other than the intellectual property, are insufficient to repay the whole of the paid-up capital, such assets shall be distributed so that the losses shall be borne by the shareholders in proportion to the cash contributed by both parties.

As a result of our obtaining control over TAT, we have included the results of TAT in our consolidated financial statements beginning June 16, 2007. Based on consideration of the relevant rights described above, we have determined that BRC's 25% equity interest in TAT is not substantive. The amended arrangement represents, in substance, a research and development arrangement between us and BRC. Therefore, this arrangement is being accounted for as a research and development arrangement.

GERON CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

Contributions from BRC represent its share of funding for future research and development activities that will be performed principally by BRC and partly by us. Accordingly, BRC's net contributions have been recorded as an advance payment for research and development on our consolidated balance sheet. The advance payment from BRC has been recognized as either a reduction of research and development expenses or revenues from collaborative agreements depending upon who performs the related research and development activity. The advance payment from BRC has been recorded as a reduction of research and development expenses in our consolidated statements of operations in the period when BRC performs the underlying research activity on behalf of TAT. The advance payment from BRC has been recognized as revenues from collaborative agreements in our consolidated statements of operations in the period when we perform research activity on behalf of TAT and the source of funds has not been derived from our cash contributions to TAT. For the years ended December 31, 2009, 2008 and 2007, we recognized related party revenue of none, $79,000 and $487,000, respectively. We incurred related party research and development costs of $1,755,000, $794,000 and $941,000 for the years ended December 31, 2009, 2008 and 2007, respectively. As of December 31, 2009 and 2008, the net balance of the advance payment from BRC was zero and $440,000, respectively.

Start Licensing and ViaGen, Inc.

In April 2005, Geron and Exeter Life Sciences, Inc. (Exeter) established Start Licensing, Inc. (Start), a joint venture to manage and license a broad portfolio of intellectual property rights related to animal reproductive technologies. We and Exeter owned 49.9% and 50.1% of Start, respectively. In connection with the establishment of Start, we granted a worldwide, exclusive, non-transferable license to our patent rights to nuclear transfer technology for use in animal cloning, with the right to sublicense such patent rights. Since there was no net book value associated with the patent rights at the execution of the joint venture, no initial value was recognized for our investment in Start. We suspended the equity method of accounting since our proportionate share of net losses in Start exceeded our original carrying value of the investment and we had no commitments to provide financial support or obligations to perform services or other activities for Start.

In August 2008, Geron and Exeter entered into Contribution Agreements whereby we and Exeter exchanged our equity interests in Start for equity interests in ViaGen, Inc. (ViaGen). As a result of the exchange, Start became a wholly-owned subsidiary of ViaGen. Ownership of ViaGen immediately following the transaction was as follows: Exeter – 69%; Geron – 27%; and Smithfield Foods – 4%. Since no value had been recorded for our investment in Start, the same zero carrying value was applied to our investment in ViaGen. Geron's share of equity method losses from Start that were not recognized during the period the equity method was suspended was carried over to the investment in ViaGen.

In September 2008, Geron provided a $1,500,000 loan to ViaGen in connection with ViaGen's acquisition of an interest in an unrelated company. The loan bore an interest rate of 6% per annum and was convertible into ViaGen equity at Geron's option at the then current market value. Since the proceeds of the loan did not fund prior ViaGen losses and represented additional financial support to ViaGen, we applied the equity method of accounting to the basis of the loan and recognized losses for our proportionate share of ViaGen's operating losses. The loan basis was reduced to zero as of March 31, 2009, and since we had no commitments to provide financial support or obligations to perform services or other activities for ViaGen, we suspended the equity method of accounting.

In September 2009, Geron purchased $3,603,000 in equity from ViaGen and simultaneously Exeter converted its outstanding debt with ViaGen into equity. The new equity purchase did not fund prior ViaGen losses and represented additional financial support to ViaGen. Ownership of ViaGen upon consummation of the transactions and at December 31, 2009 was as follows: Exeter – 70%; Geron – 28%; and Smithfield Foods – 2%. Subsequent to our equity purchase, Geron received $1,593,000 from ViaGen in repayment of the 2008 loan, including accrued interest. As the source of funds to repay the loan and accrued interest was derived from our equity purchase, the equity investment in ViaGen was recorded net of the loan and interest payment. We have no commitments to provide financial support or obligations to perform services or other activities for ViaGen.

GERON CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

With the new investment in 2009, we resumed applying the equity method of accounting by increasing (decreasing) the carrying value of our investment by our proportionate share of ViaGen's earnings (losses). If equity method losses exceed the carrying value of the investment, losses will be applied against any advances to ViaGen, including any commitments to provide financial support until those amounts are reduced to zero. The equity method of accounting shall then be suspended until income is subsequently reported. If income is reported, Geron's proportionate share of income shall first be applied to recognize the equity method losses accumulated during the time the equity method was suspended.

For the years ended December 31, 2009 and 2008, we recognized $1,338,000 and $844,000, respectively, for our proportionate share of ViaGen's operating losses. Our share of losses is recorded in the consolidated statements of operations under losses recognized under equity method investment. The adjusted basis of our investment in ViaGen at December 31, 2009 and 2008 was $1,328,000 and $656,000, respectively, which is reflected under investments in licensees on our consolidated balance sheet.

4. PROPERTY AND EQUIPMENT

Property and equipment, stated at cost, is comprised of the following:

	December 31,	
	2009	2008
	(In thousands)	
Furniture and computer equipment	$ 4,298	$ 4,232
Lab equipment	10,616	10,124
Leasehold improvements	7,497	7,315
	22,411	21,671
Less accumulated depreciation and amortization	(18,473)	(17,285)
	$ 3,938	$ 4,386

5. EQUIPMENT LINE

In 2009, we renewed our equipment financing facility and had approximately $500,000 available for borrowing as of December 31, 2009. This facility is secured by a certificate of deposit. Any outstanding principal balance bears a fixed interest rate equal to one and one-half percentage point above the Prime Rate. No amounts were due under this facility as of December 31, 2009 and 2008.

6. ACCRUED LIABILITIES

Accrued liabilities consist of the following:

	December 31,	
	2009	2008
	(In thousands)	
Sponsored research agreements	$ 107	$ 178
Service provider obligations	274	237
Clinical trials	698	649
Related party payable	—	270
Other	846	914
	$ 1,925	$ 2,248

7. COMMITMENTS AND CONTINGENCIES

Operating Lease Commitment

In March 2008, as payment of the total rent due for our premises at 200 Constitution Drive and 230 Constitution Drive in Menlo Park, California, for the period from August 1, 2008 through July 31, 2012, we issued to the lessor of those premises 742,158 shares of our common stock. The fair value of the common stock of $3,191,000 was recorded as a prepaid asset and is being amortized to rent expense on a

straight-line basis over the lease period.

GERON CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

In May 2007, as payment of the total rent due for our premises at 149 Commonwealth Drive in Menlo Park, California, for the period from May 1, 2007 through April 30, 2010, we issued 210,569 shares of our common stock to the lessor of those premises. The fair value of the common stock of $1,573,000 was recorded as a prepaid asset and is being amortized to rent expense on a straight-line basis over the lease period.

Future minimum payments under non-cancelable operating leases are zero through July 31, 2012, as a result of the prepayments of rent with our common stock. Rent expense under operating leases was approximately $1,324,000, $1,259,000 and $1,029,000 for the years ended December 31, 2009, 2008 and 2007, respectively.

Severance Plan

We have a Change of Control Severance Plan (the Severance Plan) that applies to all employees, and provides for each employee to receive a severance payment upon a triggering event following a change of control. A triggering event is defined as an event where: (i) an employee is terminated by us without cause in connection with a change of control or within 12 months following a change of control; or (ii) an employee is not offered comparable employment (new or continuing) by us or our successor or acquirer within 30 days after the change of control or any employment offer is rejected; or (iii) after accepting (or continuing) employment with us after a change of control, an employee resigns within six months following a change of control due to a material change in the terms of employment. Severance payments range from two to 18 months of base salary, depending on the employee's position with us, payable in a lump sum payment. We have not made any payments under our Severance Plan.

Indemnifications to Officers and Directors

Our corporate bylaws require that we indemnify our officers and directors, as well as those who act as directors and officers of other entities at our request, against expenses, judgments, fines, settlements and other amounts actually and reasonably incurred in connection with any proceedings arising out of their services to Geron. In addition, we have entered into separate indemnification agreements with each of our directors which provide for indemnification of these directors under similar circumstances and under additional circumstances. The indemnification obligations are more fully described in our bylaws and the indemnification agreements. We purchase standard insurance to cover claims or a portion of the claims made against our directors and officers. Since a maximum obligation is not explicitly stated in our bylaws or in our indemnification agreements and will depend on the facts and circumstances that arise out of any future claims, the overall maximum amount of the obligations cannot be reasonably estimated. Historically, we have not made payments related to these obligations, and the fair value of these obligations was zero on our consolidated balance sheets as of December 31, 2009 and 2008.

8. STOCKHOLDERS' EQUITY

Warrants

As of December 31, 2009, the following warrants to purchase our common stock were outstanding and classified as equity:

Issuance Date	Exercise Price	Number of Shares	Exercisable Date	Expiration Date
September 2009	$ 9.00	150,000	September 2009	September 2014
October 2007	$ 7.42	25,000	October 2007	October 2012
September 2007	$ 7.19	100,000	September 2007	September 2012
February 2007	$ 6.80	1,125,000	June 2007	December 2011
December 2006	$ 6.80	3,000,000	June 2007	December 2011
April 2005	$ 3.75	470,000	April 2005	April 2015
November 2004	$ 6.80	2,295,082	May 2005	November 2011
September 2001	$ 9.07	5,000	September 2001	September 2011
August 2001	$ 14.60	100,000	August 2001	August 2011
August 2000	$ 31.69	5,000	August 2000	August 2010
July 2000	$ 6.75	25,000	July 2000	July 2010
March 2000	$ 17.50	200,000	March 2000	March 2012
March 2000	$ 12.50	100,000	March 2000	March 2012
		7,600,082		

66

GERON CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

In April 2009 in connection with our continued collaboration with an investor and licensee and the data received under the collaboration relevant to Geron's therapeutic programs, we modified the terms of certain outstanding warrants held by this investor by extending the exercise term and reducing the exercise price. The exercise term of warrants to purchase 200,000 shares of common stock was extended to March 9, 2012 from March 9, 2010 and the exercise price was modified to $17.50 per share from $67.09 per share. The exercise term of warrants to purchase 100,000 shares of common stock was extended to March 9, 2012 from March 9, 2010 and the exercise price was unchanged at $12.50 per share. In connection with the modifications, we recognized a deemed dividend of approximately $190,000 in our consolidated statements of operations for the incremental fair value of the modified warrants, as calculated using the Black Scholes option-pricing model as of the modification date.

In February 2007 in exchange for the exercise of warrants to purchase 1,875,000 shares of common stock, we issued warrants to purchase 1,125,000 shares of common stock, at a premium, exercisable from June 2007. The new warrants (2007 D Warrants) were substantially the same as the 2006 A Warrants issued in the December 2006 financing and were issued to the same institutional investors who held the 2006 A Warrants. The aggregate fair value of $3,661,000 for the 2007 D Warrants, as calculated using the Black Scholes option-pricing model, was recognized as a deemed dividend in our consolidated statements of operations.

In December 2007, we modified the terms of certain outstanding warrants by extending the exercise term and reducing the exercise price. The exercise term of the 2004 A Warrants to purchase 2,295,082 shares of common stock was extended to November 2011 and the exercise price was modified to $7.50 per share. The exercise terms of the 2006 A Warrants to purchase 3,000,000 shares of common stock and 2007 D Warrants to purchase 1,125,000 shares of common stock were extended to December 2011 and the exercise prices were modified to $7.50 per share. In connection with the modifications, we received $3,630,000 in cash consideration from the institutional investors holding the outstanding warrants. We recognized a deemed dividend of $5,420,000 in our consolidated statements of operations for the incremental fair value of the modified warrants, as calculated using the Black Scholes option-pricing model as of the modification date, net of the cash consideration received from the institutional investors for the modifications. As of December 15, 2009, the exercise price for each of these warrants was reset to $6.80 per share in accordance with the terms of the modified warrant agreements.

1992 Stock Option Plan

The 1992 Stock Option Plan (1992 Plan) expired in August 2002 and no further option grants can be made from the 1992 Plan. The options granted under the 1992 Plan were either incentive stock options or nonstatutory stock options. Options granted under the 1992 Plan expired no later than ten years from the date of grant. For incentive stock options and nonstatutory stock options, the option exercise price was at least 100% and 85%, respectively, of the fair market value of the underlying common stock on the date of grant. Options to purchase shares of common stock generally vested over a period of four or five years from the date of the option grant, with a portion vesting after six months and the remainder vesting ratably over the remaining period.

2002 Equity Incentive Plan

In May 2002, our stockholders approved the adoption of the 2002 Equity Incentive Plan (2002 Plan) to replace the 1992 Plan. Our Board of Directors administers the 2002 Plan. The 2002 Plan provides for grants to employees of us or of our subsidiary (including officers and employee directors) of either incentive stock or nonstatutory stock options and stock purchase rights to employees (including officers and employee directors) and consultants (including non-employee directors) of us or of our subsidiary. As of December 31, 2009, we had reserved 17,579,603 shares of common stock for issuance under the 2002 Plan. Options granted under the 2002 Plan expire no later than ten years from the date of grant. For incentive stock options, the exercise price shall be equal to 100% of the fair market value of the underlying common stock on the date of grant. Exercise prices for all other stock options are determined by the administrator. If, at the time we grant an option, the optionee directly or by attribution owns stock possessing more than 10% of the total combined voting power of all classes of our stock, the option price shall be at least 110% of the fair market value of the underlying common stock and shall not be exercisable more than five years after the date of grant.

Options to purchase shares of common stock generally vest over a period of four years from the date of the option grant, with a portion vesting after six months and the remainder vesting ratably over the remaining period. Stock purchase rights (restricted stock awards and restricted stock units) have variable vesting schedules and purchase prices as determined by the Board of Directors on the date of grant.

GERON CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

Under certain circumstances, options may be exercised prior to vesting, subject to our right to repurchase shares subject to such option at the exercise price paid per share. Our repurchase rights would generally terminate on a vesting schedule identical to the vesting schedule of the exercised option. In 2009 and 2008, we repurchased none and 114,914 shares, respectively, related to restricted stock awards for payroll tax withholdings. As of December 31, 2009, no shares outstanding were subject to repurchase.

1996 Directors' Stock Option Plan

The 1996 Directors' Stock Option Plan (1996 Directors Plan) expired in July 2006 and no further option grants can be made from the 1996 Directors Plan. The options granted under the 1996 Directors Plan were nonstatutory stock options and expired no later than ten years from the date of grant. The option exercise price was equal to the fair market value of the underlying common stock on the date of grant. Options to purchase shares of common stock generally were 100% vested upon grant, except for options granted upon first appointment to the Board of Directors (First Option). The First Option vested annually over three years upon each anniversary date of appointment to the Board. The options issued pursuant to the 1996 Directors Plan remain exercisable for up to 90 days following the optionee's termination of service as our director, unless such termination is a result of death or permanent and total disability, in which case the options (both those already exercisable and those that would have become exercisable had the director remained on the Board of Directors for an additional 36 months) remain exercisable for up to a 24 month period.

2006 Directors' Stock Option Plan

In May 2006, our stockholders approved the adoption of the 2006 Directors' Stock Option Plan (2006 Directors Plan) to replace the 1996 Directors Plan. As of December 31, 2009, we had reserved an aggregate of 2,500,000 shares of common stock for issuance under the 2006 Directors Plan. The 2006 Directors Plan provides for the automatic grant of the following types of equity awards.

First Option. Each person who becomes a non-employee director, whether by election of the stockholders of the Company or by appointment by the Board of Directors to fill a vacancy, will automatically be granted an option to purchase 45,000 shares of common stock on the date on such person first becomes a non-employee director (the First Option).

Subsequent Awards. Each non-employee director (other than the Chairman of the Board of Directors and any director receiving a First Option on the date of the annual meeting) will automatically be granted a subsequent option on the date of the Annual Meeting of Stockholders in each year during such director's service on the Board (a Subsequent Option) to purchase 10,000 shares of common stock and a restricted stock award (a Subsequent Stock Award) of 5,000 shares of common stock. In the case of the Chairman of the Board, the Subsequent Option will be for 20,000 shares of common stock and the Subsequent Stock Award shall be for 10,000 shares of common stock.

Committee Chair Service Awards. On the date of each Annual Meeting of Stockholders, the Chairman of the Audit Committee receives an option to purchase 5,000 shares of common stock (a Committee Chair Service Option), and a restricted stock award (a Committee Chair Service Stock Award) of 2,500 shares of common stock. The Committee Chair Service Option for the Compensation Committee Chairman and the Nominating Committee Chairman shall be for 2,500 shares of common stock and the Committee Chair Service Stock Award shall be for 1,250 shares of common stock.

Committee Service Awards. Upon each non-employee director's appointment to the AuditCommittee, Compensation Committee or Nominating Committee of the Board of Directors, the director will receive an option to purchase 2,500 shares of common stock (a First Committee Service Option). Thereafter, an option to purchase 1,250 shares of common stock (a Subsequent Committee Service Option) and a restricted stock award of 625 shares of common stock (a Subsequent Committee Service Stock Award) shall be granted to each non-employee director on the date of each Annual Meeting during the director's service on such committee, other than the Chairman of such committee. There is currently no stock option grant or restricted stock award contemplated for participation on other committees.

The 2006 Directors Plan provides that each First Option vests annually over three years upon each anniversary date of appointment to the Board. Each Subsequent Option, Committee Chair Service Option, First Committee Service Option and Subsequent Committee Service Option is fully vested

GERON CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

on the date of its grant. Each Subsequent Stock Award, Committee Chair Service Stock Award and Subsequent Committee Service Stock Award vests annually in four equal installments over four years commencing on the date of grant and no payment shall be required from the non-employee director in order to receive the award. Options under the 2006 Directors Plan remain exercisable for up to 90 days following the optionee's termination of service as our director, unless such termination is a result of death or permanent and total disability, in which case the options (both those already exercisable and those that would have become exercisable had the director remained on the Board of Directors for an additional 36 months) remain exercisable for up to a 24 month period or unless there is a death of an optionee within 3 months following his or her termination of service, in which case the options will remain exercisable for an additional six month period from the date of death. Upon termination of service as our director, any unvested options and restricted stock awards shall return to the 2006 Directors Plan, unless such termination is a result of death or permanent and total disability, in which case any unvested options and restricted stock awards shall immediately vest.

The exercise price of all options granted under the 2006 Directors Plan is equal to 100% of the fair market value of the underlying common stock on the date of grant. Options granted under the 2006 Directors Plan have a term of ten years.

Aggregate option activity for the 1992 Plan, 2002 Plan, 1996 Directors Plan and 2006 Directors Plan is as follows:

		Outstanding Options			
	Shares Available For Grant	Number of Shares	Weighted Average Exercise Price Per Share	Weighted Average Remaining Contractual Life (In years)	Aggregate Intrinsic Value (In thousands)
Balance at December 31, 2006	7,726,616	9,006,446	$ 7.77		$ 18,290
Additional shares authorized	2,000,000	—	$ —		
Options granted	(1,674,759)	1,674,759	$ 8.29		
Awards granted	(2,170,882)	—	$ —		
Options exercised	—	(282,597)	$ 5.95		
Options canceled/forfeited	387,872	(387,872)	$ 9.15		
Awards canceled/repurchased	19,900	—	$ —		
1992 Plan and 1996 Directors Plan options expired	(129,892)	—	$ 11.75		
Balance at December 31, 2007	6,158,855	10,010,736	$ 7.86		$ 2,596
Additional shares authorized	2,000,000	—	$ —		
Options granted	(2,060,025)	2,060,025	$ 3.99		
Awards granted	(1,227,522)	—	$ —		
Options exercised	—	(146)	$ 3.97		
Options canceled/forfeited	1,584,685	(1,584,685)	$ 6.19		
Awards canceled/repurchased	209,929	—	$ —		
1992 Plan and 1996 Directors Plan options expired	(844,474)	—	$ 5.54		
Balance at December 31, 2008	5,821,448	10,485,930	$ 7.35		$ 2,071
Additional shares authorized	2,000,000	—	$ —		
Options granted	(2,767,879)	2,767,879	$ 6.49		
Awards granted	(1,916,772)	—	$ —		
Options exercised	—	(320,876)	$ 5.59		
Options canceled/forfeited	1,171,538	(1,171,538)	$ 10.03		
Awards canceled/repurchased	73,069	—	$ —		
1992 Plan and 1996 Directors Plan options expired	(913,967)	—	$ 10.97		
Balance at December 31, 2009	3,467,437	11,761,395	$ 6.93	6.37	$ 4,553
Options exercisable at December 31, 2009		8,003,110	$ 7.33	5.21	$ 3,010
Options fully vested and expected to vest at December 31, 2009		11,318,051	$ 6.96	6.27	$ 4,398

69

GERON CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

The aggregate intrinsic value in the preceding table represents the total intrinsic value, based on Geron's closing stock price of $5.55 per share as of December 31, 2009, which would have been received by the option holders had all the option holders exercised their options as of that date.

There were no options granted with an exercise price below fair market value of our common stock on the date of grant for 2009, 2008 and 2007. There were no options granted with an exercise price greater than grant date fair market value in 2009 or 2008. There were 6,000 options granted to employees with an exercise price greater than grant date fair market value with a weighted average exercise price of $7.48 per share in 2007. As of December 31, 2009, 2008 and 2007, there were 8,003,110, 7,483,714 and 7,308,554 exercisable options outstanding at weighted average exercise prices per share of $7.33, $8.05 and $7.98, respectively.

The total pretax intrinsic value of stock options exercised during 2009, 2008 and 2007 was $747,000, none and $741,000, respectively. Cash received from the exercise of options in 2009, 2008 and 2007 totaled approximately $1,793,000, $1,000 and $1,681,000, respectively. No income tax benefit was realized from stock options exercised in 2009 since we reported an operating loss.

Information about stock options outstanding as of December 31, 2009 is as follows:

	Options Outstanding		
Exercise Price Range	Number of Shares	Weighted Average Exercise Price Per Share	Weighted Average Remaining Contractual Life (In years)
$ 1.83–$ 4.97	2,607,481	$ 3.91	6.86
$ 4.97–$ 6.40	2,089,092	$ 5.96	5.29
$ 6.40–$ 6.95	3,514,739	$ 6.58	8.44
$ 6.95–$ 41.13	3,550,083	$ 10.06	4.61
$ 1.83–$ 41.13	11,761,395	$ 6.93	6.37

Aggregate restricted stock activity for the 2002 Plan and 2006 Directors Plan is as follows:

	Number of Shares	Weighted Average Grant Date Fair Value Per Share	Weighted Average Remaining Contractual Term (In years)
Non-vested restricted stock at December 31, 2006	40,000	$ 7.57	1.54
Granted	2,170,882	$ 8.64	—
Vested	(642,903)	$ 7.49	—
Canceled/forfeited	(16,325)	$ 9.32	—
Non-vested restricted stock at December 31, 2007	1,551,654	$ 9.08	1.05
Granted	1,227,522	$ 4.21	—
Vested	(1,427,626)	$ 6.54	—
Canceled/forfeited	(95,015)	$ 7.63	—
Non-vested restricted stock at December 31, 2008	1,256,535	$ 7.32	2.42
Granted	1,916,772	$ 6.14	—
Vested	(1,427,654)	$ 7.11	—
Canceled/forfeited	(73,069)	$ 6.11	—
Non-vested restricted stock at December 31, 2009	1,672,584	$ 6.20	3.32

The total fair value of restricted stock that vested during 2009, 2008 and 2007 was $8,633,000, $6,184,000 and $4,820,000, respectively.

Employee Stock Purchase Plan

In July 1996, we adopted the 1996 Employee Stock Purchase Plan (Purchase Plan) and as of December 31, 2009, we had reserved an aggregate of 1,200,000 shares of common stock for issuance under the Purchase Plan. Approximately 572,000 and 479,000 shares have been issued under the Purchase Plan as of December 31, 2009 and 2008, respectively. As of December 31, 2009, 627,951 shares were available for issuance under the Purchase Plan.

GERON CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

Under the terms of the Purchase Plan, employees can choose to have up to 10% of their annual salary withheld to purchase our common stock. An employee may not make additional payments into such account or increase the withholding percentage during the offering period.

The Purchase Plan is comprised of a series of offering periods, each with a maximum duration (not to exceed 12 months) with new offering periods commencing on January 1 and July 1 of each year. The date an employee enters the offering period will be designated his or her entry date for purposes of that offering period. An employee may only participate in one offering period at a time. Each offering period consists of two consecutive purchase periods of six months' duration, with the last day of such period designated a purchase date.

The purchase price per share at which common stock is purchased by the employee on each purchase date within the offering period is equal to 85% of the lower of (i) the fair market value per share of Geron common stock on the employee's entry date into that offering period or (ii) the fair market value per share of common stock on that purchase date. If the fair market value of Geron common stock on the purchase date is less than the fair market value at the beginning of the offering period, a new 12 month offering period will automatically begin on the first business day following the purchase date with a new fair market value.

Effective for the offering period beginning July 1, 2009 and subsequent offering periods, shares purchased under the Purchase Plan shall be registered and available for trading in an open market transaction one year from the date of purchase, and certificates evidencing such shares shall bear a restrictive legend.

Stock-Based Compensation Expense

We measure and recognize compensation expense for all share-based payment awards made to employees and directors, including employee stock options, restricted stock awards and employee stock purchases related to the Purchase Plan, based on estimated grant-date fair values.

The following table summarizes the stock-based compensation expense related to share-based payment awards for the years ended December 31, 2009, 2008 and 2007 which was allocated as follows:

	Year Ended December 31,		
	2009	2008	2007
	(In thousands)		
Research and development	$ 5,339	$ 5,492	$ 6,064
General and administrative	5,236	6,001	5,303
Stock-based compensation expense included in operating expenses	$ 10,575	$ 11,493	$ 11,367

The fair value of options granted in fiscal years 2009, 2008 and 2007 reported above has been estimated at the date of grant using the Black Scholes option-pricing model with the following assumptions:

	2009	2008	2007
Dividend yield	0%	0%	0%
Expected volatility range	0.630 to 0.633	0.527 to 0.596	0.737 to 0.774
Risk-free interest rate range	1.54% to 2.52%	2.08% to 3.57%	3.40% to 5.05%
Expected term	5 yrs	5 yrs	5 yrs

The fair value of employee stock purchases in fiscal years 2009, 2008 and 2007 under the Purchase Plan has been estimated using the Black Scholes option-pricing model with the following assumptions:

	2009	2008	2007
Dividend yield	0%	0%	0%
Expected volatility range	0.536 to 1.016	0.458 to 0.593	0.419 to 0.471
Risk-free interest rate range	0.28% to 2.38%	2.13% to 4.97%	4.97% to 5.26%
Expected term	6 mos to 12 mos	6 mos to 12 mos	6 mos to 12 mos

GERON CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

Dividend yield is based on historical cash dividend payments, which have been none to date. Expected volatility range is based on historical volatilities of our stock since traded options on Geron stock do not correspond to option terms and trading volume of options is limited. The risk-free interest rate range is based on the U.S. Zero Coupon Treasury Strip Yields for the expected term in effect on the date of grant for an award. The expected term of options is derived from actual historical exercise data and represents the period of time that options granted are expected to be outstanding. The expected term of employees' purchase rights under the Purchase Plan is equal to the purchase period. We grant options under our equity plans to employees, non-employee directors, and consultants for whom the vesting period is generally four years.

As stock-based compensation expense recognized in the consolidated statements of operations for the years ended December 31, 2009, 2008 and 2007 is based on awards ultimately expected to vest, it has been reduced for estimated forfeitures but at a minimum, reflects the grant-date fair value of those awards that actually vested in the period. Forfeitures have been estimated at the time of grant and revised, if necessary, in subsequent periods if actual forfeitures differ from those estimates. Forfeitures were estimated based on historical experience.

Based on the Black Scholes option-pricing model, the weighted average estimated fair value of employee stock options granted during the years ended December 31, 2009, 2008 and 2007 was $3.55, $2.06 and $5.37 per share, respectively. The weighted average estimated fair value of purchase rights under our Purchase Plan for the years ended December 31, 2009, 2008 and 2007 was $3.17, $1.40 and $2.34 per share, respectively. As of December 31, 2009, total compensation cost related to unvested stock awards not yet recognized was $17,583,000, net of estimated forfeitures, which is expected to be recognized over the next 41 months on a weighted-average basis.

Stock-Based Compensation to Service Providers

We grant options, restricted stock and warrants to purchase common stock to consultants from time to time in exchange for services performed for us. In general, the options and restricted stock vest over the contractual period of the consulting arrangement and warrants are fully vested on the grant date. No options or warrants were granted to consultants in 2009 or 2008. We granted options and warrants to consultants to purchase 125,000 shares of our common stock in 2007. In September 2009, our Chief Scientific Officer for Telomerase Technologies retired and became an advisor to the Company. In connection with his advisory function, the options and restricted stock awards previously granted to him as an employee continue to vest under the same schedule as he provides services to the Company, and such awards are accounted for as consultant awards. The fair value of options, restricted stock awards and warrants granted to consultants is being amortized to expense over the vesting term of the respective equity award. In addition, we will record any additional increase in the fair value of the options, restricted stock awards or warrants as the respective equity award vests. We recorded stock-based compensation expense of $190,000, none and $1,466,000 for the vested portion of the fair value of options, restricted stock awards and warrants to consultants in 2009, 2008 and 2007, respectively.

We also grant common stock to consultants, vendors and research institutions in exchange for services either performed or to be performed for us. In 2009, 2008 and 2007, we issued 1,272,438, 2,294,685 and 1,169,823 shares of common stock, respectively, in exchange for goods or services. For these stock grants, we record a prepaid asset equal to the fair market value of the granted shares on the date of grant and amortize to expense on a pro-rata basis as services are performed or goods are received. In 2009, 2008 and 2007, we recognized approximately $7,230,000, $8,723,000 and $6,304,000, respectively, of expense in connection with stock grants to consultants, vendors and research institutions. As of December 31, 2009, $3,109,000 related to vendor stock grants remained as a prepaid asset which is being amortized to research and development expense on a pro-rata basis as services are incurred or goods are received. Also, we have prepaid our rental obligation for our facilities with common stock and as of December 31, 2009, have a prepaid balance of $2,236,000 which is being amortized to rent expense on a straight-line basis over the term of the leases until July 31, 2012.

GERON CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

Common Stock Reserved for Future Issuance

Common stock reserved for future issuance as of December 31, 2009 is as follows:

Outstanding stock options	11,761,395
Options and awards available for grant	3,467,437
Employee stock purchase plan	627,951
Warrants outstanding	7,951,934
Total	23,808,717

Share Purchase Rights Plan

On July 20, 2001, our Board of Directors adopted a share purchase rights plan and declared a dividend distribution of one right for each outstanding share of common stock to stockholders of record as of July 31, 2001. Each right entitles the holder to purchase one unit consisting of one one-thousandth of a share of Series A Junior Participating Preferred Stock for $100 per unit. Under certain circumstances, if a person or group acquires 15% or more of our outstanding common stock, holders of the rights (other than the person or group triggering their exercise) will be able to purchase, in exchange for the $100 exercise price, shares of our common stock, par value $0.001 per share, or of any company into which we are merged having a value of $200. The rights expire on July 31, 2011 unless extended by our Board of Directors. As of December 31, 2009, no rights were exercisable into any shares of common stock.

401(k) Plan

We sponsor a defined-contribution savings plan under Section 401(k) of the Internal Revenue Code covering all full-time U.S. employees (Geron 401K Plan). Participating employees may contribute up to the annual Internal Revenue Service contribution limit. The Geron 401K Plan also permits us to provide discretionary matching and profit sharing contributions. The Geron 401K Plan is intended to qualify under Section 401 of the Internal Revenue Code so that contributions by employees or by us, and income earned on the contributions, are not taxable to employees until withdrawn from the Geron 401K Plan. Our contributions, if any, will be deductible by us when made. At the direction of each participant, the assets of the Geron 401K Plan are invested in any of 14 different investment options.

In December 2009, 2008 and 2007, our Board of Directors approved a matching contribution equal to 100% of each employee’s 2009, 2008 and 2007 contributions, respectively. The matching contributions are invested in our common stock and vest ratably over four years for each year of service completed by the employee, commencing from the date of hire, until it is fully vested when the employee has completed four years of service. We provided the matching contribution in the month following Board approval.

For the vested portion of the 2009 match under this plan, we recorded $790,000 as research and development expense and $182,000 as general and administrative expense. For the vested portion of the 2008 match under this plan, we recorded $631,000 as research and development expense and $134,000 as general and administrative expense. For the vested portion of the 2007 match under this plan, we recorded $570,000 as research and development expense and $70,000 as general and administrative expense. As of December 31, 2009, approximately $517,000 remained unvested for the 2008, 2007 and 2006 matches.

Public Offering

On February 19, 2009, we completed an underwritten public offering of 7,250,000 shares of our common stock at a public offering price of $6.60 per share, resulting in net cash proceeds of approximately $45,933,000 after deducting underwriting discounts and commissions and offering expenses.

Offering of Common Stock and Warrants

In September 2009, we sold 550,000 shares of Geron common stock (Shares) and warrants to purchase an additional 150,000 shares of common stock with an exercise price of $9.00 per share (Warrants) to certain institutional investors for total gross proceeds of $3,603,000. The Shares, Warrants and shares of common stock underlying the warrants (Warrant Shares) were issued through a prospectus supplement to an effective shelf

73

GERON CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

registration statement. The Warrants are immediately exercisable for a period of five years from the date of issuance. A lock-up agreement limits the sale or other disposition of the Shares, the Warrants and the Warrant Shares by the investors for a period of one year beginning on September 9, 2009.

9. COLLABORATIVE AGREEMENT

In June 2009, we entered into a worldwide exclusive license and alliance agreement with GE Healthcare UK, Limited (GEHC) to develop and commercialize cellular assay products derived from human embryonic stem cells (hESCs) for use in drug discovery, development and toxicity screening. Under the terms of the agreement, GEHC has been granted an exclusive license under Geron's intellectual property portfolio covering the growth and differentiation of hESCs, as well as a sublicense under Geron's rights to the hESC patents held by the Wisconsin Alumni Research Foundation. We have established a multi-year alliance program with GEHC under which scientists from both companies will work to develop hESC-based products for drug discovery.

In connection with the agreement, we received upfront non-refundable license payments under the exclusive license and sublicense and can receive milestone payments upon achievement of certain commercial development and product sales events and royalties on future product sales. Under the alliance program, GEHC is responsible for all costs incurred by GEHC and all costs incurred by Geron for activities undertaken at Geron, including the funding of Geron scientists working on the alliance program. An Alliance Steering Committee, with representatives from each company, coordinates and manages the alliance program.

License payments under the GEHC agreement were recorded as deferred revenue upon receipt and are being recognized ratably as revenue over the alliance program period as a result of our continuing involvement with the collaboration. Funding received for Geron's efforts under the alliance program is being recognized as revenue as costs are incurred, which approximates our level of effort over the period of the alliance program. Since the milestone payments are subject to substantive contingencies, any such payments will be recognized upon completion of the specified milestones. Royalties received under the agreement will generally be recognized as revenue upon receipt of the related royalty payment. For the year ended December 31, 2009, we recognized $450,000 as revenues from collaborative agreements and $350,000 in license fee revenue in connection with this agreement.

10. INCOME TAXES

Deferred income taxes reflect the net tax effects of temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and the amounts used for income tax purposes. Significant components of our deferred tax assets as of December 31 are as follows:

	2009	2008
	(In thousands)	
Net operating loss carryforwards	$ 179,800	$ 157,600
Purchased technology	11,400	12,600
Research credits	21,900	22,600
Capitalized research and development	15,600	14,600
License fees	1,900	2,200
Other — net	8,800	10,900
Total deferred tax assets	239,400	220,500
Valuation allowance for deferred tax assets	(239,400)	(220,500)
Net deferred tax assets	$ —	$ —

We record net deferred tax assets to the extent we believe these assets will more likely than not be realized. In making such determination, we consider all available positive and negative evidence, including scheduled reversals of deferred tax liabilities, projected future taxable income, tax planning strategies and recent financial performance. Forming a conclusion that a valuation allowance is not required is difficult when there is negative evidence such as cumulative losses in recent years. Because

GERON CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

of our history of losses, the net deferred tax assets have been fully offset by a valuation allowance. The valuation allowance increased by $18,900,000, $21,000,000 and $22,900,000 during the years ended December 31, 2009, 2008 and 2007, respectively. Approximately $5,500,000 of the valuation allowance for deferred tax assets relates to benefits of stock option deductions which, when recognized, will be allocated directly to contributed capital.

As of December 31, 2009, we had domestic federal net operating loss carryforwards of approximately $467,800,000 expiring at various dates beginning in 2010 through 2029, and state net operating loss carryforwards of approximately $187,700,000 expiring at various dates beginning in 2012 through 2029, if not utilized. Our foreign net operating loss carryforwards of approximately $41,300,000 carry forward indefinitely. We also had federal research and development tax credit carryforwards of approximately $14,100,000 expiring at various dates beginning in 2010 through 2029, if not utilized. Our state research and development tax credit carryforwards of approximately $11,800,000 carry forward indefinitely.

Due to the change of ownership provisions of the Tax Reform Act of 1986, utilization of a portion of our domestic net operating loss and tax credit carryforwards may be limited in future periods. Further, a portion of the carryforwards may expire before being applied to reduce future income tax liabilities.

We do not currently expect any significant changes to unrecognized tax benefits during the fiscal year ended December 31, 2010. In certain cases, our uncertain tax positions are related to tax years that remain subject to examination by the relevant tax authorities. Tax years for which we have carryforward net operating loss and credit attributes remain subject to examination by federal and most state tax authorities. In significant foreign jurisdictions, primarily Scotland and Hong Kong, the 2003 through 2008 tax years generally remain subject to examination by their respective tax authorities.

11. SEGMENT INFORMATION

Our executive management team represents our chief decision maker. To date, we have viewed our operations as one segment, the discovery and development of therapeutic and diagnostic products for oncology and human embryonic stem cell therapies. As a result, the financial information disclosed herein materially represents all of the financial information related to our principal operating segment.

12. CONSOLIDATED STATEMENTS OF CASH FLOWS DATA

	Year Ended December 31,		
	2009	2008	2007
	(In thousands)		
Supplemental operating activities:			
Cash in transit	$ —	$ —	$ 7
Issuance of common stock and warrants to purchase common stock for services rendered to date or to be received in future periods	$ 3,350	$ 7,854	$ 5,121
Unrealized gain (loss) on investments in licensees	$ 27	$ (11)	$ (9)
Reclassification between derivative liabilities and equity, net	$ 130	$ —	$ 21,974
Issuance of common stock for 401(k) contributions and year-end bonuses	$ 3,707	$ 3,137	$ 3,590
Reclassification of deposits to other current assets	$ 496	$ —	$ —
Supplemental investing activities:			
Net unrealized (loss) gain on available-for-sale securities	$ (472)	$ 27	$ 244
Supplemental financing activities:			
Deemed dividend on derivatives	$ 190	$ —	$ 9,081

There was no interest expense for the years ended December 31, 2009, 2008 and 2007.

GERON CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

13. SELECTED QUARTERLY FINANCIAL INFORMATION (UNAUDITED)

	First Quarter	Second Quarter	Third Quarter	Fourth Quarter
	(In thousands, except per share amounts)			
Year Ended December 31, 2009				
Revenues	$ 444	$ 183	$ 494	$ 605
Operating expenses	17,149	18,940	16,894	18,977
Net loss	(16,811)	(19,758)	(15,224)	(18,391)
Deemed dividend on derivatives	—	(190)	—	—
Net loss applicable to common stockholders	(16,811)	(19,948)	(15,224)	(18,391)
Basic and diluted net loss per share applicable to common stockholders	$ (0.20)	$ (0.23)	$ (0.17)	$ (0.20)
Year Ended December 31, 2008				
Revenues	$ 1,694	$ 198	$ 367	$ 544
Operating expenses	17,643	15,656	18,301	18,247
Net loss applicable to common stockholders	(13,674)	(13,564)	(17,151)	(17,632)
Basic and diluted net loss per share applicable to common stockholders	$ (0.18)	$ (0.17)	$ (0.22)	$ (0.22)

Basic and diluted net losses per share are computed independently for each of the quarters presented. Therefore, the sum of the quarters may not be equal to the full year net loss per share amounts.

14. SUBSEQUENT EVENTS

We have evaluated events occurring from January 1, 2010 to February 26, 2010, the filing date of this Form 10-K, and have determined the following events to be disclosed.

Vendor Stock Issuances

In January 2010, we issued 133,357 shares of our common stock to MPI Research, Inc. (MPI) in a private placement as advance consideration under an amendment to a master services agreement under which MPI has provided and will continue to provide certain preclinical services in support of our clinical programs. The total fair value of the common stock was $829,000 which has been recorded as a prepaid asset and is being amortized to research and development expense on a pro-rata basis as services are performed, which is expected to be approximately six months.

In January 2010, we issued 94,741 shares of our common stock to Exponent, Inc. (Exponent), the lessor of the premises at 149 Commonwealth Drive, as a first installment payment of rent due under the extended lease agreement for the period from May 1, 2010 through July 31, 2012. The fair value of the common stock was $589,000 which has been recorded as a prepaid asset and will be amortized to rent expense on a pro-rata basis over the lease term.

In January 2010, we issued 287,401 shares of our common stock to Samchully Pharm Co. Ltd. (Samchully) in a private placement as advance consideration related to an addendum agreement to a manufacturing agreement pursuant to which Samchully is performing certain services and manufacturing certain raw materials and products for us intended for use in human clinical trials. The total fair value of the common stock was $1,704,000 which has been recorded as a prepaid asset and is being amortized to research and development expense on a pro-rata basis upon the performance of services and the proper receipt of materials, which is expected to be over nine months.

Warrant Exchange and Direct Equity Issuance

On January 14, 2010, we exchanged outstanding warrants to purchase 5,559,426 shares of common stock held by certain institutional investors for 2,700,000 shares of common stock. In connection with the exchange, we sold an additional 1,481,481 shares of common stock to the investors at a premium to the market price for gross proceeds of $10,000,000, and issued warrants to the investors to purchase an additional

740,741 shares of common stock. The warrants are immediately exercisable, expire on October 31, 2010 and have an exercise price of $6.75 per share of common stock. A number of shares of common stock equal to those issued in exchange for the outstanding warrants cannot be sold during the 12 month period from the date of issuance unless the sales are at prices in excess of $9.11 per share.

ITEM 9. CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE

Not Applicable.

ITEM 9A. CONTROLS AND PROCEDURES

(I) Evaluation of Disclosure Controls and Procedures

We maintain disclosure controls and procedures to ensure that information we are required to disclose in reports that we file or submit under the Securities Exchange Act of 1934, as amended, (Exchange Act) is recorded, processed, summarized and reported within the time periods specified in Securities and Exchange Commission's (SEC) rules and forms. Our management evaluated, with the participation of our chief executive officer (CEO) and our chief financial officer (CFO), the effectiveness of our disclosure controls and procedures, as such term is defined under Rule 13a-15(e) under the Exchange Act. Based on that evaluation, our CEO and CFO concluded that our disclosure controls and procedures were effective, at a reasonable assurance level, as of December 31, 2009 and as of the date of this filing.

There have been no significant changes in Geron's internal control over financial reporting that have materially affected, or are reasonably likely to materially affect internal control over financial reporting during the fiscal quarter ended December 31, 2009.

(II) Management's Report on Internal Control over Financial Reporting

Internal control over financial reporting refers to the process designed by, or under the supervision of, our CEO and CFO, and effected by our Board of Directors, management and other personnel, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles, and includes those policies and procedures that:

(1)	Pertain to the maintenance of records that in reasonable detail accurately and fairly reflect the transactions and dispositions of the assets of the Company;
(2)	Provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the Company are being made only in accordance with authorizations of management and directors of the Company; and
(3)	Provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of the Company's assets that could have a material effect on the financial statements.

Management is responsible for establishing and maintaining an adequate internal control over financial reporting for the Company. Internal control over financial reporting cannot provide absolute assurance of achieving financial reporting objectives because of its inherent limitations. Internal control over financial reporting is a process that involves human diligence and compliance and is subject to lapses in judgment and breakdowns resulting from human failures. Internal control over financial reporting also can be circumvented by collusion or improper management override. Because of such limitations, there is a risk that material misstatements may not be prevented or detected on a timely basis by internal control over financial reporting. However, these inherent limitations are known features of the financial reporting process. Therefore, it is possible to design into the process safeguards to reduce, though not eliminate, this risk.

Under the supervision and with the participation of our management, including our principal executive officer and principal financial officer, we conducted an evaluation of the effectiveness of our internal control over financial reporting based on the framework set forth in "Internal Control — Integrated Framework" issued by the Committee of Sponsoring Organizations of the Treadway Commission. Based on our evaluation

under the framework set forth in "Internal Control — Integrated Framework," our management concluded that our internal control over financial reporting was effective as of December 31, 2009. The effectiveness of our internal control over financial reporting as of December 31, 2009 has been audited by Ernst & Young LLP, an independent registered public accounting firm, as stated in their report which is included herein.

THOMAS B. OKARMA
President and Chief Executive Officer

DAVID L. GREENWOOD
Executive Vice President
Chief Financial Officer

(III) Report of Independent Registered Public Accounting Firm

The Board of Directors and Stockholders of Geron Corporation

We have audited Geron Corporation's internal control over financial reporting as of December 31, 2009, based on criteria established in Internal Control—Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (the COSO criteria). Geron Corporation's management is responsible for maintaining effective internal control over financial reporting, and for its assessment of the effectiveness of internal control over financial reporting included in the accompanying Management's Report on Internal Control Over Financial Reporting. Our responsibility is to express an opinion on the company's internal control over financial reporting based on our audit.

We conducted our audit in accordance with the 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 effective internal control over financial reporting was maintained in all material respects. Our audit included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, testing and evaluating the design and operating effectiveness of internal control based on the assessed risk, and performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

In our opinion, Geron Corporation maintained, in all material respects, effective internal control over financial reporting as of December 31, 2009, based on the COSO criteria.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), the consolidated balance sheets of Geron Corporation as of December 31, 2009 and 2008, and the related consolidated statements of operations, stockholders' equity, and cash flows for each of the three years in the period ended December 31, 2009 of Geron Corporation and our report dated February 26, 2010 expressed an unqualified opinion thereon.

/s/ Ernst & Young LLP

Palo Alto, California
February 26, 2010

ITEM 9B. OTHER INFORMATION

Not Applicable.

PART III

ITEM 10. DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE

Identification of Directors

The information required by this Item concerning our directors is incorporated by reference from the section captioned "Proposal 1: Election of Directors" contained in our Definitive Proxy Statement related to the Annual Meeting of Stockholders to be held May 19, 2010, to be filed with the Securities and Exchange Commission (the Proxy Statement).

Identification of Executive Officers

The information required by this Item concerning our executive officers is set forth in Part I of this Report.

Code of Ethics

We have adopted a Code of Conduct with which every person who works for Geron is expected to comply. The Code of Conduct is publicly available on our website under the Investor Relations section at www.geron.com. This website address is intended to be an inactive, textual reference only; none of the material on this website is part of this Report. If any substantive amendments are made to the Code of Conduct or any waiver granted, including any implicit waiver, from a provision of the Code to our Chief Executive Officer, Chief Financial Officer or Corporate Controller, we will disclose the nature of such amendment or waiver on that website or in a report on Form 8-K.

Copies of the Code of Conduct will be furnished without charge to any person who submits a written request directed to the attention of our Secretary, at our offices located at 230 Constitution Drive, Menlo Park, California, 94025.

Section 16(a) Compliance

Information concerning Section 16(a) beneficial ownership reporting compliance is incorporated by reference from the section captioned "Section 16(a) Beneficial Ownership Reporting Compliance" contained in the Proxy Statement.

Audit Committee Report

The information required by this Item is incorporated by reference from the section captioned "Audit Committee Report" contained in the Proxy Statement.

ITEM 11. EXECUTIVE COMPENSATION

The information required by this Item is incorporated by reference from the sections captioned "Certain Transactions," "Compensation Discussion and Analysis," "Executive Compensation" and "Compensation Committee Report" contained in the Proxy Statement.

ITEM 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDER MATTERS

The information required by this Item is incorporated by reference from the sections captioned "Security Ownership of Certain Beneficial Owners and Management" and "Equity Compensation Plans" contained in the Proxy Statement.

ITEM 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS, AND DIRECTOR INDEPENDENCE

The information required by this Item is incorporated by reference from the sections captioned “Proposal 1: Election of Directors,” “Certain Transactions” and “Executive Compensation” contained in the Proxy Statement.

ITEM 14. PRINCIPAL ACCOUNTING FEES AND SERVICES

The information required by this Item is incorporated by reference from the section captioned “Principal Accountant Fees and Services” contained in the Proxy Statement.

PART IV

ITEM 15. EXHIBITS, FINANCIAL STATEMENT SCHEDULES

(a) (1) Consolidated Financial Statements

Included in Part II, Item 8 of this Report:

(2) Financial Statement Schedules

Financial statement schedules are omitted because they are not required or the information is disclosed in the financial statements listed in Item 15(a)(1) above.

(3) Exhibits

See Exhibit Index.

(b) Reports on Form 8-K

None.

(c) Index to Exhibits

See Exhibits listed under Item 15(a)(3) above.

(d) Financial Statements and Schedules

The financial statement schedules required by this Item are listed under Item 15(a)(1) and (2) above.

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the Registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

GERON CORPORATION

Date: February 26, 2010 By: /S/ THOMAS B. OKARMA
THOMAS B. OKARMA
President and Chief Executive Officer

POWER OF ATTORNEY

KNOW BY ALL PERSONS BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints, jointly and severally, Thomas B. Okarma and David L. Greenwood, and each one of them, attorneys-in-fact for the undersigned, each with the power of substitution, for the undersigned in any and all capacities, to sign any and all amendments to this annual report on Form 10-K, and to file the same, with exhibits thereto and other documents in connection therewith, with the Securities and Exchange Commission, hereby ratifying and confirming all that each of said attorneys-in-fact, or his substitutes, may do or cause to be done by virtue hereof.

IN WITNESS WHEREOF, each of the undersigned has executed this Power of Attorney as of the date indicated opposite his/her name.

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of the Registrant and in the capacities and on the dates indicated.

Signature	Title	Date
/S/ THOMAS B. OKARMA THOMAS B. OKARMA	President, Chief Executive Officer and Director (Principal Executive Officer)	February 26, 2010
/S/ DAVID L. GREENWOOD DAVID L. GREENWOOD	Executive Vice President, Chief Financial Officer, Treasurer and Secretary (Principal Financial and Accounting Officer)	February 26, 2010
/S/ ALEXANDER E. BARKAS ALEXANDER E. BARKAS	Director	February 26, 2010
/S/ KARIN EASTHAM KARIN EASTHAM	Director	February 26, 2010
/S/ EDWARD V. FRITZKY EDWARD V. FRITZKY	Director	February 26, 2010
/S/ CHARLES J. HOMCY CHARLES J. HOMCY	Director	February 26, 2010
/S/ THOMAS D. KILEY THOMAS D. KILEY	Director	February 26, 2010
/S/ PATRICK J. ZENNER PATRICK J. ZENNER	Director	February 26, 2010

EXHIBIT INDEX

Exhibit Number	Description	Incorporation by Reference Exhibit Number	Filing	Filing Date
3.1	Amended and Restated Certificate of Incorporation of the Registrant	3.1	S-1	June 12, 1996
3.2	Certificate of Amendment of Restated Certificate of Incorporation of the Registrant	3.1	10-Q	July 31, 2006
3.3	Bylaws of Registrant	3.3	10-K	March 13, 2000
4.1	Form of Common Stock Certificate	4.1	S-1	June 12, 1996
4.2	Rights Agreement, dated as of July 20, 2001, by and between the Registrant and U.S. Stock Transfer Corporation, as Rights Agent, which includes the form of Certification of Designations of the Series A Junior Participating Preferred Stock of the Registrant as Exhibit A, the form of Right Certificate as Exhibit B and the Summary of Rights to Purchase Preferred Shares as Exhibit C	4.1	8-K	July 23, 2001
4.3	Form of Senior Indenture, between the Registrant and one or more trustees to be named	4.5	S-3	July 9, 2009
4.4	Form of Subordinated Indenture, between the Registrant and one or more trustees to be named	4.6	S-3	July 9, 2009
4.5	Amended and Restated Warrant to purchase 100,000 shares of common stock issued by Registrant to private investor, Eve M. Patton dated April 13, 2009	4.1	10-Q	July 31, 2009
4.6	Amended and Restated Warrant to purchase 200,000 shares of common stock issued by Registrant to private investor, Eve M. Patton dated April 13, 2009	4.2	10-Q	July 31, 2009
4.7	Common Stock Warrant Agreement issued by the Registrant to University Technology Corporation, dated as of August 30, 2001	4.3	S-3	September 27, 2001
4.8	Form of Warrant, issued by the Registrant to certain Purchasers, dated April 22, 2005	4.2	8-K	April 25, 2005
4.9	Form of A Warrant, Amended and Restated, dated December 21, 2007 issued by the Registrant to certain Purchasers	4.12	10-K	February 28, 2008
4.10	Form of A Warrant, Amended and Restated, dated December 21, 2007 issued by the Registrant to certain Purchasers	4.13	10-K	February 28, 2008
4.11	Form of D Warrant, Amended and Restated, dated December 21, 2007 issued by the Registrant to certain Purchasers	4.14	10-K	February 28, 2008
4.12	Form of Common Stock Purchase Warrant issued by Registrant to certain Purchasers, dated September 9, 2009	4.2	8-K	September 10, 2009
4.13	Form of Lock-Up Agreement issued by Registrant to certain Investors, dated September 9, 2009	4.3	8-K	September 10, 2009
10.1	Form of Indemnification Agreement	10.1	S-1	June 12, 1996
10.2	1992 Stock Option Plan, as amended	Appendix A	Def 14A	April 9, 2001
10.3	Amended and Restated 1996 Employee Stock Purchase Plan	10.2	10-Q	July 31, 2009
10.4	1996 Directors' Stock Option Plan, as amended	Appendix B	Def 14A	April 15, 2003
10.5	Amended and Restated 2002 Equity Incentive Plan	10.1	10-Q	April 30, 2007
10.6	Amended and Restated 2006 Directors' Stock Option Plan	10.1	10-Q	July 31, 2009
10.7†	Patent License Agreement dated September 8, 1992 between the Registrant and University of Texas Southwestern Medical Center at Dallas	10.7	S-1	June 12, 1996

10.8†	Intellectual Property License Agreement dated December 9, 1996 between the Registrant and University Technology Corporation	10.30	10-Q	May 13, 1997
10.9†	Exclusive License Agreement dated February 2, 1994 between the Registrant and the Regents of the University of California	10.9	S-1	June 12, 1996
10.10†	License Agreement dated August 1, 1997 between the Registrant and The Johns Hopkins University	10.35	10-Q	November 14, 1997
10.11†	License Agreement dated May 3, 1999, among the Registrant, Roslin Bio-Med Ltd. and the Roslin Institute	10.43	8-K	May 18, 1999
10.12†	First Amendment to Intellectual Property License Agreement dated July 23, 2001, by and among the Registrant and University Technology Corporation	4.1	S-3	September 27, 2001
10.13†	License Agreement dated as of January 8, 2002, by and between the Registrant and Wisconsin Alumni Research Foundation	10.1	8-K	January 18, 2002
10.14†	License Amendment Agreement between the Registrant and Transgenomic, Inc., dated June 2, 2003	10.1	10-Q	July 30, 2003
10.15†	License Agreement dated as of March 6, 2004 by and between the Registrant and Merix Bioscience, Inc.	10.4	10-Q	July 30, 2004
10.16†	Research, Development and Commercialization License Agreement dated July 15, 2005 between the Registrant and Merck & Co., Inc.	10.1	10-Q	August 5, 2005
10.17	Restructuring Agreement between Biotechnology Research Corporation and Registrant, dated June 15, 2007	10.1	10-Q	July 31, 2007
10.18	Amended and Restated Joint Venture Agreement between Biotechnology Research Corporation, Registrant and TA Therapeutics, Ltd., dated June 15, 2007	10.2	10-Q	July 31, 2007
10.19	Contribution Agreement between Registrant and ViaGen, Inc. dated August 8, 2008	10.1	8-K	August 12, 2008
10.20†	Exclusive License and Alliance Agreement by and between Registrant and GE Healthcare UK Limited, dated June 29, 2009	10.1	8-K	July 2, 2009
10.21	Series A Preferred Stock Purchase Agreement by and between ViaGen, Inc. and Registrant, dated September 16, 2009	10.1	10-Q	October 30, 2009
10.22	Employment agreement between Registrant and Thomas Okarma, dated January 21, 2003	10.1	10-Q	April 30, 2003
10.23	Employment agreement between Registrant and David Greenwood, dated January 21, 2003	10.2	10-Q	April 30, 2003
10.24	Employment agreement between Registrant and David Earp, dated January 21, 2003	10.3	10-Q	April 30, 2003
10.25	Employment agreement between Registrant and Melissa Kelly, dated January 21, 2003	10.5	10-Q	April 30, 2003
10.26	Employment agreement between Registrant and Jane Lebkowski, dated January 21, 2003	10.6	10-Q	April 30, 2003
10.27	Amendment to employment agreement between Registrant and Thomas Okarma, dated December 19, 2008	10.21	10-K	February 27, 2009
10.28	Amendment to employment agreement between Registrant and David Greenwood, dated December 19, 2008	10.22	10-K	February 27, 2009
10.29	Amendment to employment agreement between Registrant and David Earp, dated December 19, 2008	10.23	10-K	February 27, 2009

10.30	Amendment to employment agreement between Registrant and Melissa Kelly Behrs, dated December 19, 2008	10.25	10-K	February 27, 2009
10.31	Amendment to employment agreement between Registrant and Jane Lebkowski, dated December 19, 2008	10.26	10-K	February 27, 2009
10.32	Offer letter agreement between Registrant and Stephen Kelsey, dated April 8, 2009	10.3	10-Q	July 31, 2009
10.33	Amended and Restated Severance Plan, effective December 19, 2008	10.27	10-K	February 27, 2009
10.34	Fifth Amendment to Lease by and between the Registrant and David D. Bohannon Organization, dated March 19, 2008	10.1	10-Q	April 30, 2008
10.35	Second Amendment to Lease by and between the Registrant and David D. Bohannon Organization, dated March 19, 2008	10.2	10-Q	April 30, 2008
14.1	Code of Conduct	14.1	10-K	February 27, 2004
21.1	List of Subsidiaries	21.1	10-K	February 28, 2008
23.1	Consent of Independent Registered Public Accounting Firm			
24.1	Power of Attorney (see signature page)			
31.1	Certification of Chief Executive Officer pursuant to Form of Rule 13a-14(a), as Adopted Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002, dated February 26, 2010			
31.2	Certification of Chief Financial Officer pursuant to Form of Rule 13a-14(a), as Adopted Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002, dated February 26, 2010			
32.1	Certification of Chief Executive Officer pursuant to 18 U.S.C. Section 1350, as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, dated February 26, 2010			
32.2	Certification of Chief Financial Officer pursuant to 18 U.S.C. Section 1350, as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, dated February 26, 2010			

† Certain portions of this Exhibit have been omitted for which confidential treatment has been requested and filed separately with the Securities and Exchange Commission.