GERON CORP
Form 424B5
January 30, 2014

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PROSPECTUS SUPPLEMENT
(To Prospectus dated October 11, 2012)

22,500,000 Shares

Common Stock

We are selling 22,500,000 shares of our common stock.

Our common stock is listed on the NASDAQ Global Select Market under the symbol "GERN." On January 29, 2014, the last reported sale price of our common stock as reported on the NASDAQ Global Select Market was $4.33 per share.

Investing in our common stock involves significant risks. See "Risk Factors" beginning on page S-16 of this prospectus supplement.

	Per Share	Total
Public offering price	$ 4.00	$ 90,000,000
Underwriting discount	$ 0.24	$ 5,400,000
Proceeds, before expenses, to us	$ 3.76	$ 84,600,000

The underwriters may also exercise their option to purchase up to an additional 3,375,000 shares from us, at the public offering price, less the underwriting discount, for 30 days after the date of this prospectus supplement.

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

The shares will be ready for delivery on or about February 4, 2014.

BofA Merrill Lynch

Stifel

Lazard Capital Markets **Piper Jaffray** **MLV & Co.**

The date of this prospectus supplement is January 30, 2014

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ABOUT THIS PROSPECTUS SUPPLEMENT

This document is in two parts. The first part is this prospectus supplement, which describes the specific terms of the common stock we are offering and also adds to, and updates, information contained in the accompanying prospectus and the documents incorporated by reference into this prospectus supplement and the accompanying prospectus. The second part, the accompanying prospectus dated October 11, 2012, including the documents incorporated by reference, provides more general information. Generally, when we refer to this prospectus, we are referring to both parts of this document combined. To the extent there is a conflict between the information contained in this prospectus supplement, on the one hand, and the information contained in the accompanying prospectus or in any document incorporated by reference that was filed with the Securities and Exchange Commission, or SEC, before the date of this prospectus supplement, on the other hand, you should rely on the information in this prospectus supplement. If any statement in one of these documents is inconsistent with a statement in another document having a later date for example, a document incorporated by reference in the accompanying prospectus the statement in the document having the later date modifies or supersedes the earlier statement.

Neither we nor the underwriters have authorized anyone to provide you with information different from that contained in or incorporated by reference into this prospectus supplement, the accompanying prospectus and in any free writing prospectus prepared by or on behalf of us or to which we have referred you. We and the underwriters take no responsibility for, and can provide no assurance as to the reliability of, any information that others may give you. We are not, and the underwriters are not, making an offer to sell these securities in any jurisdiction where the offer or sale is not permitted. You should assume that the information appearing in this prospectus supplement, the accompanying prospectus, the documents incorporated by reference in this prospectus supplement and the accompanying prospectus, and in any free writing prospectus prepared by or on behalf of us or to which we have referred you, is accurate only as of the dates of those respective documents. Our business, financial condition, results of operations and prospects may have changed since those dates. You should read this prospectus supplement, the accompanying prospectus, the documents incorporated by reference in this prospectus supplement and the accompanying prospectus, and any free writing prospectus prepared by or on behalf of us or to which we have referred you, in their entirety before making an investment decision. You should also read and consider the information in the documents to which we have referred you in the sections of this prospectus supplement entitled "Where You Can Find More Information" and "Incorporation of Certain Information by Reference."

Unless otherwise mentioned or unless the context indicates otherwise, all references in this prospectus supplement and the accompanying prospectus to "the Company," "Geron," "we," "us," "our," or similar references mean Geron Corporation.

This prospectus supplement, the accompanying prospectus and the information incorporated herein and therein by reference include trademarks, service marks and trade names owned by us or other companies. All trademarks, service marks and trade names included or incorporated by reference into this prospectus supplement or the accompanying prospectus are the property of their respective owners.

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PROSPECTUS SUPPLEMENT SUMMARY

The following summary highlights and includes certain basic information about us, this offering and information appearing elsewhere in this prospectus supplement, in the accompanying prospectus and in the documents we incorporate by reference. This summary is not complete and does not contain all of the information that you should consider before making an investment decision. To fully understand this offering and its consequences to you, you should read this entire prospectus supplement and the accompanying prospectus carefully, including the factors described under the heading "Risk Factors" in this prospectus supplement beginning on page S-16, together with any free writing prospectus prepared by or on behalf of us or to which we have referred you and the financial statements and other information incorporated by reference in this prospectus supplement and the accompanying prospectus.

ABOUT GERON CORPORATION

Company Overview

Geron is a clinical stage biopharmaceutical company developing a telomerase inhibitor, imetelstat, in hematologic myeloid malignancies. Through a combined strategy of internal efforts and potential future strategic partnerships, we intend to advance the development and commercialization of imetelstat in one or more hematologic myeloid malignancies.

The discovery and early development of imetelstat, our sole product candidate, was based on our core expertise in telomerase and telomere biology. Telomerase is an enzyme that enables cancer cells, including malignant progenitor cells, to maintain telomere length, which provides them with the capacity for limitless, uncontrolled proliferation.

Imetelstat is a potent and specific inhibitor of telomerase. Using our proprietary nucleic acid chemistry, we designed imetelstat to be an oligonucleotide that targets and binds with high affinity to the active site of telomerase, thereby directly inhibiting telomerase activity and impeding malignant cell proliferation. We developed imetelstat from inception and own exclusive worldwide commercial rights with U.S. patent coverage extending through 2025.

Based on the data from our Phase 2 clinical trial evaluating imetelstat in essential thrombocythemia, or ET, which showed durable hematologic and molecular responses in patients, and preliminary data from the first two cohorts of an investigator-sponsored trial at Mayo Clinic evaluating imetelstat in myelofibrosis, which we refer to as the Myelofibrosis IST, we intend to develop imetelstat to treat one or more hematologic myeloid malignancies such as myelofibrosis, or MF, which includes patients with primary MF, or PMF, post-essential thrombocythemia MF, or post-ET MF, or post-polycythemia vera MF, or post-PV MF, all of which are referred to in this prospectus supplement as MF; myelodysplastic syndromes, or MDS; or acute myelogenous leukemia, or AML. We expect to initiate a Geron-sponsored multi-center, Phase 2 clinical trial of imetelstat in patients with MF in the first half of 2014. If the data from this trial are positive, and subject to regulatory approval and the availability of additional funding, we expect to initiate one or more randomized Phase 3 clinical trials of imetelstat in patients with MF that could be designed to potentially support full regulatory approval.

The Myelofibrosis IST is also evaluating imetelstat in patients with MF that has transformed into AML, known as blast-phase MF, and in patients with refractory anemia with ringed sideroblasts, or RARS, a subpopulation of MDS. Data we receive from these additional patients will inform, in part, our decision to initiate one or more potential pilot studies of imetelstat in AML or MDS.

Telomeres and Telomerase in Normal Development

In the human body, normal growth and maintenance of tissues occurs by cell division. However, most cells are only able to divide a limited number of times, and this number of divisions is regulated by telomere length. Telomeres are repetitions of a DNA sequence located at the ends of

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chromosomes. They act as protective caps to maintain stability and integrity of the chromosomes, which contain the cell's genetic material. Normally, every time a cell divides, the telomeres shorten. Eventually, they shrink to a critically short length, and as a result the cell either dies by apoptosis or stops dividing and senesces.

Telomerase is a naturally occurring enzyme that maintains telomeres and prevents them from shortening during cell division in cells, such as stem cells, that must remain immortalized to support normal health. Telomerase consists of at least two essential components: an RNA template (hTR), which binds to the telomere, and a catalytic subunit (hTERT) with reverse transcriptase activity, which adds a specific DNA sequence to the chromosome ends. The 2009 Nobel Prize for Physiology and Medicine was awarded to Drs. Elizabeth H. Blackburn and Carol W. Greider, who were early Geron collaborators, together with Dr. Jack Szostak, who is a current Geron collaborator, for the discovery of how chromosomes are protected by telomeres and the enzyme telomerase.

Telomerase is active during embryonic development, enabling the rapid cell division that supports normal growth. During the latter stages of human fetal development and in adulthood, telomerase is repressed in most cells, and telomere length gradually decreases during a lifetime. In tissues that have a high turnover throughout life, such as blood and gut, telomerase can be transiently upregulated in progenitor cells to enable controlled, self-limited proliferation to replace cells lost through natural cell aging processes. In proliferating progenitor cells, relatively long telomeres are maintained by upregulated telomerase. As the progeny of progenitor cells mature, telomerase is downregulated and telomeres shorten with cell division, preventing uncontrolled proliferation.

Telomeres and Telomerase in Cancer

Telomerase is upregulated in many tumor progenitor cells, which enables the continued and uncontrolled proliferation of the malignant cells that drive tumor growth and progression. Telomerase expression has been found to be present in approximately 90% of biopsies taken from a broad range of human cancers. Our non-clinical studies, in which the telomerase gene was artificially introduced and expressed in normal cells grown in culture, have suggested that telomerase does not itself cause a normal cell to become malignant. However, the sustained upregulation of telomerase enables tumor cells to maintain telomere length, providing them with the capacity for limitless proliferation. We believe that the sustained upregulation of telomerase is critical for tumor progression as it enables malignant progenitor cells to acquire cellular immortality and avoid apoptosis, or cell death.

Telomerase Inhibition: Inducing Cancer Cell Death

We believe that inhibiting telomerase may be an attractive approach to treating cancer because it may limit the proliferative capacity of malignant cells. We and others have observed in various in vitro and rodent tumor models that inhibiting telomerase results in telomere shortening and arrests uncontrolled malignant cell proliferation and tumor growth. In vitro studies have suggested that tumor cells with short telomeres may be especially sensitive to the anti-proliferative effects of inhibiting telomerase. Our non-clinical data also suggest that inhibiting telomerase is particularly effective at limiting the proliferation of malignant progenitor cells, which have high levels of telomerase and are believed to be important drivers of tumor growth and progression.

Many hematologic malignancies, such as polycythemia vera, or PV, ET and MF, are known to arise from malignant progenitor cells in the bone marrow that express higher telomerase activity and have shorter telomeres when compared to normal healthy cells. These disease characteristics support telomerase as a rational and potentially specific oncology target for the use of imetelstat, a potent and specific inhibitor of telomerase.

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Imetelstat: The First Telomerase Inhibitor to Advance to Clinical Development

Imetelstat is a lipid-conjugated 13-mer oligonucleotide that is designed to be complementary to and bind with high affinity to the RNA template of telomerase, thereby directly inhibiting telomerase activity. The compound has a proprietary thio-phosphoramidate backbone, which is designed to provide resistance to the effect of cellular nucleases, thus conferring improved stability in plasma and tissues, as well as improved binding affinity to its target. To improve the ability of imetelstat to permeate through cellular membranes, we conjugated the oligonucleotide to a lipid group. Imetelstat's IC_{50}, or half maximal inhibitory concentration, is 0.5-10nM in cell-free assays. The tissue half life of imetelstat, or the time it takes for the concentration or amount of imetelstat to be reduced by half, in bone marrow, spleen, liver and tumor has been estimated to be 41 hours in humans, based on data from animal studies and clinical trial data. The tissue half life indicates how long a drug will remain present in the tissues, and a longer tissue half life may enable a drug to remain at effective doses for a longer period of time.

Imetelstat has been shown in preclinical studies to exhibit relatively preferential inhibition of clonal proliferation of malignant progenitor cells compared to normal progenitors. For this reason, imetelstat has been studied as a treatment for malignant diseases. Imetelstat is the first telomerase inhibitor to advance to clinical development. The Phase 1 trials that we completed evaluated the safety, tolerability, pharmacokinetics and pharmacodynamic effects of imetelstat. Doses and dosing schedules were established that were tolerable and achieved target exposures in patients that were consistent with those required for efficacy in animal models. We believe adverse events were generally manageable and reversible. The dose-limiting toxicities were thrombocytopenia, or reduced platelet count, and neutropenia, or reduced neutrophil count. Following intravenous administration of imetelstat using tolerable dosing regimens, clinically relevant and significant inhibition of telomerase activity was observed in various types of tissue in which telomerase activity is measurable, including normal bone marrow hematopoietic cells, malignant plasma cells, hair follicle cells, and peripheral blood mononuclear cells.

Developing Imetelstat to Treat Hematologic Myeloid Malignancies

Proof-of-Concept in Essential Thrombocythemia

Myeloproliferative neoplasms, or MPNs, are hematologic myeloid malignancies that arise from malignant hematopoietic myeloid progenitor cells in the bone marrow, such as the precursor cells of red blood cells, platelets and granulocytes. Proliferation of malignant progenitor cells leads to an overproduction of any combination of myeloid white cells, red blood cells and/or platelets, depending on the disease. These overproduced cells may also be abnormal, leading to additional clinical complications. MPN diseases include PV, ET and MF. ET is an MPN characterized by a high platelet count, often accompanied by a high white cell count, and an increased risk of thrombosis, or bleeding, in higher-risk patients.

In January 2011, we initiated a Phase 2 clinical trial of imetelstat in patients with ET. The Phase 2 ET trial was a multi-center, single arm, and open-label trial that we designed to provide proof-of-concept for the potential use of imetelstat as a treatment for hematologic myeloid malignancies, including MF, MDS and AML. The trial leveraged clinical observations from Phase 1 trials suggesting that imetelstat reduces platelet counts, as well as non-clinical observations that imetelstat distributes well to bone marrow in rodent models and selectively inhibits the proliferation of malignant progenitors ex vivo from patients with ET. Hematologic responses were measured by reductions in platelet counts, and molecular responses were measured by reductions in the JAK2 V617F mutant allele burden in circulating granulocytes as assessed by reduction in the proportion of the abnormal Janus kinase 2, or JAK2, gene compared to the normal, or wild type JAK2 gene. We

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believe a decrease in the proportion of the JAK2 V617F mutant relative to the wild type JAK2 is consistent with selective inhibition of the malignant progenitor cells responsible for the disease.

We presented top-line data from the Phase 2 ET clinical trial at the American Society of Hematology, or ASH, annual meeting in December 2012 and at the Congress of the European Hematology Association, or EHA, in June 2013. A total of 18 ET patients were enrolled into the study. Imetelstat induced platelet count reductions in all patients (a 100% hematologic response rate) and normalizations in 16 out of 18 patients (an 89% complete response rate). The JAK2 V617F gene mutation was detected in eight patients at baseline. Seven out of the eight (88%) patients achieved 72% to 96% reductions in JAK2 V617F allele burden that qualified as partial molecular responses within three to 12 months of treatment with imetelstat. Partial molecular responses were maintained in six of the seven (86%) patients, with a median follow-up of 9.5 months (range 0 to 19 months) after first achieving a response. As of the EHA Meeting in June 2013, the median durations of hematologic and molecular response had not yet been reached. Currently, 11 patients remain on-study in the Phase 2 ET trial, with the longest duration on-study being three years. These data suggest that imetelstat inhibits the progenitor cells of the malignant clone believed to be responsible for the underlying disease in a relatively selective manner.

In the Phase 2 ET trial, long-term administration of imetelstat was generally well tolerated. One patient discontinued the trial due to drug-related Grade 1 and 2 constitutional adverse events and Grade 1 gastrointestinal adverse events. The majority of the non-hematologic adverse events were mild to moderate in severity, with the most frequently assessed imetelstat-related adverse events reported by investigators being gastrointestinal events and fatigue. No drug-related Grade 4 non-hematologic adverse events were reported.

Three patients had Grade 4 neutropenia, but no cases of febrile neutropenia have been reported. No thromboembolic events or bleeding events associated with thrombocytopenia have been reported.

At least one abnormal liver function test, or LFT, was observed in laboratory findings in all patients. The majority were Grade 1 elevations in alanine aminotransferase, or ALT, and aspartate aminotransferase, or AST; two Grade 3 increases in ALT/AST were reversible on dose reduction. With longer dosing, Grade 1 increases in alkaline phosphatase were observed, associated with mostly Grade 1 to some Grade 2 unconjugated hyperbilirubinemia. LFT abnormalities do not appear to progressively worsen over time.

Although the Phase 2 ET trial is no longer enrolling patients, we are continuing to treat and follow the remaining patients on study. The high hematologic and molecular response rates led us to explore the feasibility of further development of imetelstat in ET. However, based on our own analysis and after consulting with medical experts, we plan to pursue other hematologic myeloid malignancies, such as MF, where there is an unmet medical need for a product that could potentially be disease-modifying.

Clinical Development in Myelofibrosis

MF is a myeloproliferative neoplasm among related diseases, such as ET, and is characterized by clonal proliferation of malignant hematopoietic progenitor cells in the bone marrow that causes bone marrow fibrosis, elevation in bone density, known as osteosclerosis, and abnormal rapid proliferation of blood vessels, known as pathological angiogenesis. MF patients may exhibit abnormally low red blood cells/hemoglobin, known as progressive anemia, abnormally low white blood cells, known as leukopenia, abnormally high white blood cells, known as leukocytosis, abnormally low platelets, known as thrombocytopenia, abnormally high platelets, known as thrombocytosis, immature blood cells, known as peripheral blood leukoerythroblastosis, and abnormally high precursor cells in the blood, known as excess circulating blasts. In addition, impaired blood production from the bone marrow

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causes blood production to shift to other organs such as the spleen and liver, known as extramedullary hematopoiesis, which leads to an enlarged spleen, known as splenomegaly, or an enlarged liver, known as hepatomegaly. MF patients can also suffer from debilitating constitutional symptoms, such as drenching night sweats, fatigue, severe itching, known as pruritis, fever and bone pain. The estimated prevalence of MF in the United States is approximately 13,000 patients, with an annual incidence of approximately 3,000 patients. Approximately 70% of MF patients have two to three risk factors (intermediate-2) or four or more risk factors (high risk), as defined by the Dynamic International Prognostic Scoring System Plus, or DIPSS Plus, described in a 2011 Journal of Clinical Oncology article. These patients have a median survival of approximately one to three years, representing a significant unmet medical need.

Allogeneic hematopoietic cell transplantation, or allo-HCT, is the only current treatment approach for MF that can lead to complete remission of the disease with normalization of peripheral blood counts, regression of bone marrow fibrosis, disappearance of cytogenetic abnormalities, normalization of spleen size and resolution of constitutional symptoms. However, use of allo-HCT is limited to a very small number of eligible patients due to the lack of suitable donors, older age and/or co-morbid conditions. In addition, graft vs. host disease and life-threatening infections are limitations of allo-HCT treatment.

Currently, the only approved drug therapy in the United States available for MF patients is Incyte Corporation's ruxolitinib, or Jakafi®, an orally administered, non-specific inhibitor of the JAK/STAT kinase pathway, or JAK inhibitor, which has shown benefit in reducing spleen size and providing symptom relief in MF patients. Recently, there have also been reports of overall survival benefit as well as improvement in bone marrow fibrosis from Jakafi® treatment. To date, the reported activity of Jakafi® and other JAK inhibitors in clinical development has been consistent with a cytokine-related mechanism of action, but does not provide evidence that the drugs affect the underlying malignant progenitor cells in the bone marrow driving the disease. Other treatment modalities for MF include hydroxyurea for the management of splenomegaly, leukocytosis, thrombocytosis and constitutional symptoms; splenectomy and splenic irradiation for the management of splenomegaly and co-existing cytopenias, or low blood cells; chemotherapy and pegylated interferon. Drugs for the treatment of MF-associated anemia include erythropoiesis-stimulating agents, androgens, danazol, corticosteroids, thalidomide and lenalidomide. Investigational treatments include other inhibitors of the JAK-STAT pathway, histone deacetylase inhibitors, inhibitors of heat shock protein 90, hypomethylating agents, PI3 Kinase and mTOR inhibitors, hedgehog inhibitors, anti-LOX2 inhibitors, recombinant pentraxin 2 protein, KIP-1 activators, TGF-beta inhibitors, FLT inhibitors, and other tyrosine kinase inhibitors. Presently there are no available drugs that reliably achieve clinical and pathologic remissions in patients with MF.

Investigator-Sponsored Clinical Trial in Myelofibrosis

Based on the data from the Phase 2 ET trial, in November 2012, Dr. Ayalew Tefferi of Mayo Clinic initiated the Myelofibrosis IST. The Myelofibrosis IST is an open-label trial in patients with PMF, post-ET MF, or post-PV MF who have two to three risk factors (intermediate-2) or four or more risk factors (high risk) as defined by DIPSS Plus. In the Myelofibrosis IST, imetelstat is administered as a single agent through a two-hour intravenous infusion to patients in multiple patient cohorts. In the first cohort, Cohort A, imetelstat is given once every three weeks. In the second cohort, Cohort B, imetelstat is given weekly for four weeks, followed by one dose every three weeks. Under the protocol, patients in Cohorts A and B may receive an intensified dosing regimen, up to once per week after the initial six cycles of treatment. The starting dose of imetelstat in Cohorts A and B is 9.4mg/kg, with dose reductions and dose holds allowed for toxicity. The primary endpoint in the Myelofibrosis IST is overall response rate, which is defined by the proportion of patients who are classified as responders, which means that they have achieved either a clinical improvement, or CI, partial remission, or PR, or

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complete remission, or CR, consistent with the criteria of the 2013 International Working Group for Myeloproliferative Neoplasms Research and Treatment, or IWG-MRT criteria, described in a 2013 Blood article. Secondary endpoints include reduction of spleen size by palpation, improvement in anemia or inducement of red blood cell transfusion independence, safety and tolerability.

At the ASH annual meeting in December 2013, the investigator presented preliminary efficacy data from the Myelofibrosis IST for the first 22 patients enrolled sequentially in Cohorts A and B, and preliminary safety data from the first 33 patients treated in the same two cohorts in the trial.

We have been informed by Mayo Clinic that effective January 22, 2014, the Myelofibrosis IST is closed to new patient enrollment and that the remaining patients in the Myelofibrosis IST will continue to receive imetelstat treatment and be followed under the Myelofibrosis IST protocol. We believe that approximately 79 patients have been enrolled in the Myelofibrosis IST, which includes nine patients with blast-phase MF and nine patients with RARS, and that approximately 20 patients have discontinued from the study since its inception. In Mayo Clinic's notification informing us of its decision to cease new patient enrollment, Mayo Clinic did not indicate that the decision to cease patient enrollment was due to any efficacy or safety outcomes or concerns observed in the Myelofibrosis IST.

Geron's Analysis of the Efficacy Data for the First 22 Patients Enrolled in the Myelofibrosis IST

We have reviewed data made available to us in October 2013 for the first 22 patients enrolled sequentially (11 in Cohort A and 11 in Cohort B) in the Myelofibrosis IST. These data included summary tables, patient listings and pathology reports. We also performed an onsite review at Mayo Clinic of source documents and the clinical database.

Patient Demographics and Status

Below is a table setting forth our analysis of the demographics of the first 22 patients enrolled sequentially in the Myelofibrosis IST, including certain disease characteristics and exposure to any prior treatments:

	Cohort A (n = 11)[1]	**Cohort B (n = 11)[2]**	**Total (n = 22)**
Median Age (range; years)	68.0 (54.0 - 76.0)	69.0 (53.0 - 79.0)	68.0 (53.0 - 79.0)
Male	7 (63.6%)	9 (81.8%)	16 (72.7%)
Myelofibrosis Subtype			
Primary Myelofibrosis	4 (36.4%)	5 (45.5%)	9 (40.9%)
Post ET Myelofibrosis	1 (9.1%)	5 (45.5%)	6 (27.3%)
Post PV Myelofibrosis	6 (54.5%)	1 (9.1%)	7 (31.8%)
DIPSS Plus Risk Status			
Intermediate-2 Risk	7 (63.6%)	1 (9.1%)	8 (36.4%)
High Risk	4 (36.4%)	10 (90.9%)	14 (63.6%)
Palpable Splenomegaly[3]	7 (63.6%)	6 (54.5%)	13 (59.1%)
Palpable Hepatomegaly	1 (9.1%)	2 (18.2%)	3 (13.6%)
Constitutional Symptoms[4]	8 (72.7%)	7 (63.6%)	15 (68.2%)
Any Prior Treatment	8 (72.7%)	10 (90.9%)	18 (81.8%)[5]

(1) Cohort A was administered imetelstat once every three weeks.

(2) Cohort B was administered imetelstat weekly for four weeks, followed by one dose every three weeks.

(3) Median spleen size by palpation at baseline for Cohort A was 19.0 cm (range: 13.0 - 25.0 cm) and for Cohort B was 11.0 cm (range 8.0 - 23.0 cm). Total median spleen size was 16.0 cm

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(range 8.0 - 25.0 cm). Baseline spleen sizes by palpation for patients achieving either CR or PR were either below the median or only had a spleen tip (palpable but generally less than 5 cm below the left costal margin).

(4) DIPPS Plus assessment of symptoms at baseline: Includes unexplained persistent fever > 38.3°C (or > 101°F) during the past six months, unexplained non-menopausal night sweats during the past six months, unexplained weight loss > 10% body weight in the previous six months, and unexplained non-articular bone pain during past six months.

(5) Primary prior treatments include hydroxyurea (10/22, 45.5%), JAK inhibitors (9/22, 40.9%), anagrelide (3/22, 13.6%), pomalidomide (3/22, 13.6%) and splenectomy (2/22, 9.1%).

As of October 2013, the median duration of follow-up for all 22 patients was 5.3 months (range 1.3 - 10.4 months) with 7.6 months (1.3 - 10.4 months) for Cohort A and 4.8 months (1.6 - 5.6 months) for Cohort B. Duration of follow-up is defined as the time between the date of first dose and the date of last contact in the clinical database as of the data cut-off date.

Of these 22 patients, a total of 17 patients remained on imetelstat treatment as of October 2013, and the five discontinuations were due to death (n=2), disease progression (n=1) and other reasons (n=2). Of the two deaths in the first 22 patients in the study, one was due to an intracranial hemorrhage with febrile neutropenia after prolonged myelosuppression, which was assessed as possibly related to imetelstat by the investigator, and one was due to an upper gastrointestinal hemorrhage which was considered unrelated to imetelstat by the investigator. A non-responding patient whose spleen became palpable, or measurable in length by physical exam due to increased size, was considered by us as a case of disease progression. One patient discontinued after transformation to chronic myelomonocytic leukemia, or CMML, and subsequent to study discontinuation died from AML. Another patient discontinued due to lack of response.

Preliminary Efficacy Data

The following table presents our analysis of the preliminary (as of October 2013) efficacy data for the first 22 sequentially-enrolled patients in the Myelofibrosis IST, using the IWG-MRT criteria:

Best Response per IWG-MRT Criteria	**Cohort A (n = 11)**	**Cohort B (n = 11)**	**Total (n = 22)**
Remission (CR+PR)	2 (18.2%)	3 (27.3%)	5 (22.7%)
Complete Remission (CR)	2 (18.2%)*	1 (9.1%)	3 (13.6%)
Partial Remission (PR)		2 (18.2%)	2 (9.1%)
Clinical Improvement (CI)	1 (9.1%)	3 (27.3%)**	4 (18.2%)
Overall Response (CR+PR+CI)	3 (27.3%)	6 (54.5%)	9 (40.9%)

Two patients are pending an assessment demonstrating durability of response for at least 12-weeks:

* One patient who achieved a PR on April 30, 2013 and subsequently achieved a CR on October 9, 2013 (Cohort A); and

** One patient who achieved a CI by meeting the criteria for a reduction in liver size on October 14, 2013 (Cohort B).

The median onset time to remission (CR or PR) was 2.8 months (range 1.4 - 3.0 months). Four of the patients who achieved remission (CR or PR) experienced reversal of bone marrow fibrosis and recovery of normal megakaryocyte morphology, and one patient achieved PR based on meeting all the criteria for CR except bone marrow remission. Four patients met the criteria for clinical improvement: anemia response (n=1), spleen response (n=2) and liver response (n=1), with a median onset of 1.4 months (range 0.7 - 4.4 months). The investigator has informed us that as of January 2014, no patients with CR, PR or CI had lost their response and all of these patients continue to remain on imetelstat treatment.

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Additional response rates evaluated by us included spleen and anemia responses and resolution of constitutional symptoms, circulating blasts, leukocytosis and thrombocytosis.

Five of 13 patients (38.5%) with splenomegaly achieved spleen responses by palpation, which is defined as either ≥ 50% decrease if baseline ≥ 10 centimeters or becoming non-palpable if baseline 5 to < 10 centimeters.

Three of 12 patients (25.0%) achieved anemia responses which are defined as either becoming transfusion independent if dependent at baseline or gaining ≥ 2 gram per deciliter in hemoglobin level if transfusion-independent but with a hemoglobin level < 10 gram per deciliter at baseline.

10 of 13 patients (76.9%) who had constitutional symptoms at baseline achieved symptoms response, defined as 50% reduction from baseline in grade, as assessed by the investigator.

11 of 14 patients (78.6%) with circulating blasts at baseline achieved complete resolution.

Seven of 15 patients (46.7%) with leukocytosis at baseline achieved normalization of white cell count.

Seven of 9 patients (77.8%) with thrombocytosis at baseline achieved normalization of platelet count.

Investigator's Presentation of Preliminary Safety Data

At the ASH annual meeting in December 2013, the investigator presented updated preliminary safety results from the first 33 patients treated in Cohorts A and B in the Myelofibrosis IST. In the presentation, the investigator noted that 24 of 33 patients remained on imetelstat treatment as of December 2013, and the nine patients who discontinued treatment were due to lack of response (n=6), transformation to CMML (n=1), death unrelated to imetelstat treatment (n=1) and death possibly related to imetelstat treatment (n=1).

Non-hematologic adverse events in these patients as reported by the investigator were generally mild to moderate and not dose-limiting. Non-hematologic treatment-related toxicities of imetelstat reported by the investigator were:

Non-Hematologic Adverse Event, not related to myelosuppression	**All patients (n=33)**
Grade-1 nausea	5 (15%)
Grade-1 vomiting	1 (3%)
Grade-1/2 fatigue	4 (12%)
Grade-2 hyperbilirubinemia	2 (6%)
Grade 2 APTT increase	1 (3%)

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In addition, the investigator reported all grade 3/4 extramedullary adverse events not related to myelosuppression, regardless of attribution:

Non-Hematologic Adverse event, regardless of attribution	Cohort A (n=19)	Cohort B (n=14)	All patients (n=33)
Fatigue	1 (5%)	2 (14%)	3 (9%)
Atrial fibrillation	2 (11%)		2 (6%)
Alkaline phosphatase	1 (5%)	1 (7%)	2 (6%)
Heart failure	1 (5%)		1 (3%)
Hyponatremia	1 (5%)		1 (3%)
Gastrointestinal bleed	1 (5%)		1 (3%)
Hyperkalemia		1 (7%)	1 (3%)
Pruritus		1 (7%)	1 (3%)
Intestinal obstruction		1 (7%)	1 (3%)

Hematologic adverse events related to imetelstat as reported by the investigator were the primary dose-limiting toxicity and included:

Hematologic Adverse Events	Cohort A (n=19)	Cohort B (n=14)	All Patients (n=33)
Grade-3/4 neutropenia	2 (11%)	5 (36%)	7 (21%)
Grade-3/4 thrombocytopenia	5 (26%)	5 (36%)	10 (30%)
Grade-3/4 anemia	1 (5%)	3 (21%)	4 (12%)
Grade-4 neutropenia	1 (5%)	3 (21%)	4 (12%)
Grade-4 thrombocytopenia		4 (29%)	4 (12%)
Grade-5 febrile neutropenia with intracranial hemorrhage, resulting in patient death		1 (7%)	1 (3%)

We believe myelosuppression was the principal dose-limiting toxicity, consistent with our observations in previous Geron-sponsored imetelstat studies. During the Myelofibrosis IST, however, more persistent and profound myelosuppression, particularly thrombocytopenia, was observed with imetelstat administered on a weekly basis. This included one case of febrile neutropenia after prolonged myelosuppression with intracranial hemorrhage resulting in patient death, which was assessed as possibly related to imetelstat by the investigator. To mitigate the risk of severe, persistent cytopenias, the protocol for the Myelofibrosis IST was amended to raise the hematologic threshold for retreatment and include more stringent monitoring and dose adjustment criteria. Since then, no further episodes of significant bleeding events associated with thrombocytopenia, or infections, or additional episodes of febrile neutropenia have been reported to us by the investigator. As a result, we believe that the dose-limiting toxicity of the drug may be manageable through dose hold rules and dose modifications.

Since the ongoing Myelofibrosis IST is an investigator-sponsored trial, we do not have control over the data or the timing and reporting of additional data from the Myelofibrosis IST. Furthermore, additional data from the remaining patients enrolled in the Myelofibrosis IST is generated on an ongoing basis and is not reflected in the preliminary data discussed above. In this regard, additional and updated safety and efficacy data generated from the Myelofibrosis IST may be materially different from the preliminary data discussed above. In addition, the safety and efficacy data from the first two cohorts of the Myelofibrosis IST discussed above are preliminary, and therefore, the final data may be materially different from the preliminary data. Accordingly, the preliminary data discussed above should be considered carefully and with caution. Please refer to the risk factor in this prospectus supplement entitled "Risks Related to Our Business Success in early clinical trials may not be indicative of results in subsequent clinical trials. Likewise, data reported by investigators from time-to-time is subject to

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audit and verification procedures that could result in material differences to final data and may change as more patient data becomes available."

Planned Geron-Sponsored Phase 2 Clinical Trial in Myelofibrosis

We believe that the preliminary efficacy data from the first two cohorts in the Myelofibrosis IST suggest that imetelstat treatment may produce clinical improvement in certain MF patients, and also possibly partial or even complete remissions, which may include bone marrow normalization, peripheral blood morphologic remission and resolution of splenomegaly and constitutional symptoms for some period of time, and that imetelstat may have potential disease-modifying activity by possibly affecting the underlying malignant progenitor cells in the bone marrow driving the disease. However, we will be required to demonstrate through multiple Geron-sponsored clinical trials, including larger-scale randomized Phase 3 clinical trials, that imetelstat is safe and effective for use in a diverse population before we can seek to obtain regulatory approval for its commercial sale. The next step we plan to undertake in this development process is to initiate a planned Geron-sponsored multi-center, Phase 2 clinical trial of imetelstat in patients with MF. The planned Geron-sponsored Phase 2 clinical trial will be conducted across multiple treating centers and across multiple geographic regions, and is being designed to evaluate whether the results observed in the Myelofibrosis IST are reproducible and not limited to a single treating center. A primary goal for the planned Geron-sponsored Phase 2 clinical trial is to characterize the parameters appropriate for one or more potential randomized Phase 3 clinical trials that could be designed to potentially support full regulatory approval. These parameters include defining the appropriate dosing regimen of imetelstat for MF patients, and defining and validating key components of a composite remission efficacy endpoint based on modifications of the IWG-MRT criteria. We expect to initiate the planned Geron-sponsored Phase 2 clinical trial in MF in the first half of 2014, with preliminary data expected to be available in mid-2015.

After considering current input from investigators, experts and regulators, the preliminary design of our Phase 2 clinical trial includes the following elements:

- Open-label, single agent imetelstat administered via intravenous infusion;
- Multi-center at approximately 20 to 30 study sites in the United States, Europe and other regions of the world;
- Approximately 100 to 150 evaluable patients with intermediate-2 or high risk PMF, post-ET MF, or post-PV MF, who have had at least one prior treatment with either hydroxyurea, a JAK inhibitor, or certain chemotherapeutic agents;
- Primary efficacy endpoint: achievement of a proposed, novel composite remission endpoint that includes reversal of bone marrow disease morphology (as shown through blasts, cellularity, fibrosis), normalization of peripheral blood (neutrophil count, platelet count, hemoglobin, immature myeloid cells), spleen and liver response (confirmed by imaging) and symptoms response (potentially using a patient reporting tool, such as the MF 7-day Total Symptom Score, that can measure symptoms such as early satiety, night sweats, itching, bone/muscle pain, pain under ribs, and abdominal discomfort);
- Components of a proposed composite remission endpoint are expected to be validated by seeking to establish rigorous and reproducible measurements for each component, and to demonstrate consistent and durable beneficial effects of each of the components;
- Secondary endpoints include individual components of the proposed composite remission endpoint, clinical improvement, and molecular and cytogenetic response; exploratory endpoints include pharmacokinetics and correlative scientific investigations;
- Evaluation of safety and tolerability; and

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Three potential dosing regimens, each expected to consist of up to 50 patients, for example:

- 9.4 mg/kg every three weeks, which is the dose being tested in Cohort A of the Myelofibrosis IST,
- a split dose of 9.4 mg/kg (e.g., 4.7 mg/kg on day one and day four) every three weeks to evaluate the effect of reducing peak imetelstat concentrations without reducing total amount of imetelstat being delivered, and
- a reduced dose of 7.5 mg/kg every three weeks to evaluate the effect of reducing the total amount of imetelstat being delivered.

Potential Imetelstat Clinical Development in Other Hematologic Myeloid Malignancies

The Myelofibrosis IST has also enrolled additional patients to evaluate imetelstat in other hematologic myeloid malignancies, including patients with blast-phase MF and RARS, a subpopulation of MDS. Data we receive from these additional patients will inform, in part, our decision to initiate one or more potential pilot studies in AML or MDS.

Recent Developments

Stem Cell Divestiture; Asterias Series A Distribution

Background

On October 1, 2013, we closed the transaction to divest our human embryonic stem cell assets and our autologous cellular immunotherapy program pursuant to the terms of an asset contribution agreement, or the Contribution Agreement, we entered into in January 2013 with BioTime, Inc., or BioTime, and BioTime's wholly owned subsidiary, Asterias Biotherapeutics, Inc., or Asterias (formerly known as BioTime Acquisition Corporation). Under the terms of the Contribution Agreement, on October 1, 2013, we contributed to Asterias our human embryonic stem cell assets, including intellectual property, human embryonic stem cell lines and other assets related to our discontinued human embryonic stem cell programs, including our Phase I clinical trial of oligodendrocyte progenitor cells, or GRNOPC1, in patients with acute spinal cord injury, as well as our autologous cellular immunotherapy program, including data from the Phase I/II clinical trial of the autologous cellular immunotherapy in patients with AML. On October 1, 2013, Asterias assumed all post-closing liabilities with respect to all of the assets contributed by us, including any liabilities related to the GRNOPC1 and autologous cellular immunotherapy clinical trials. Additionally, Asterias was substituted for us as a party in an appeal by us of two rulings in favor of ViaCyte, Inc. by the United States Patent and Trademark Office's Board of Patent Appeals and Interferences, filed by us in the United States District Court for the Northern District of California in September 2012, or the ViaCyte Appeal, and Asterias assumed all liabilities arising after October 1, 2013 with respect to the ViaCyte Appeal.

As consideration for the contribution of our human embryonic stem cell assets and autologous cellular immunotherapy program to Asterias, on October 1, 2013 we received 6,537,779 shares of Asterias Series A common stock representing 21.4% of Asterias' outstanding common stock as a class as of that date. Under the terms of the Contribution Agreement and subject to certain conditions and applicable law, following a record date anticipated to be declared by our board of directors, we will distribute all of the shares of Asterias Series A common stock to our stockholders on a pro rata basis, other than with respect to fractional shares and shares that would otherwise be distributed to Geron stockholders residing in certain excluded jurisdictions, as described below, which shares, as required by the Contribution Agreement, will be sold with the net cash proceeds therefrom distributed ratably to the stockholders who would otherwise be entitled to receive such shares. In this prospectus supplement, we refer to the anticipated distribution by us of the Asterias Series A common stock as the Series A Distribution.

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On October 1, 2013, BioTime contributed to Asterias 8,902,077 shares of BioTime common stock, five-year warrants to purchase 8,000,000 additional shares of BioTime common stock at an exercise price of $5.00 per share, or the BioTime Warrants, minority stakes in two of BioTime's subsidiaries and rights to use certain human embryonic stem cell lines. In addition, BioTime had previously loaned Asterias $5,000,000 in cash and the principal amount of this debt was cancelled as part of the closing under the Contribution Agreement. In consideration of BioTime's contributions, on October 1, 2013 Asterias issued to BioTime 21,773,340 shares of Asterias Series B common stock representing 71.6% of Asterias' outstanding common stock as a class as of that date, and three-year warrants to purchase 3,150,000 additional shares of Asterias Series B common stock at an exercise price of $5.00 per share. Upon completion of the Series A Distribution, Asterias is contractually obligated under the Contribution Agreement to distribute the BioTime Warrants on a pro rata basis to the holders of Asterias Series A common stock.

Status of Anticipated Series A Distribution

Prior to our ability to set a record date for the Series A Distribution, we must receive notice from BioTime and Asterias that certain securities registration or qualification requirements have been met by them, including notice that the registration statement that Asterias filed with the SEC covering the Series A Distribution has been declared effective by the SEC and is otherwise available to effect the Series A Distribution, which may not occur on a timely basis or at all. In this regard, our ability to effect the Series A Distribution has been delayed beyond our expectations, and we have no control over when and whether the Asterias registration statement will ultimately be declared effective by the SEC and available to us in order to effect the Series A Distribution. Likewise, Asterias may be unable to distribute to the Asterias Series A stockholders the BioTime Warrants received by them from BioTime under the Contribution Agreement. These anticipated distributions may be further delayed, perhaps substantially, or precluded altogether for a variety of reasons, including the failure of BioTime and/or Asterias to obtain or maintain required federal and state registrations and qualifications necessary to enable us to effect the Series A Distribution and/or to enable Asterias to complete the distribution of the BioTime Warrants.

In the event that the conditions to our obligation to effect the Series A Distribution are met, our board of directors will declare a dividend on shares of our common stock payable in shares of Asterias Series A common stock. In that event, only Geron stockholders as of the close of business on the record date declared by our board of directors for the Series A Distribution and holding shares of our common stock in certain jurisdictions would receive shares of Asterias Series A common stock in the Series A Distribution. Accordingly, if the Series A Distribution occurs, in order to receive any shares of Asterias Series A common stock in the Series A Distribution, you would need to continue to hold shares of our common stock through the record date and you would also need to reside in one of the following jurisdictions: The United States, Anguilla, Argentina, Austria, Australia, Belgium, Bulgaria, Canada, Cayman Islands, China, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Guam, Guernsey, Hong Kong, Hungary, India, Ireland, Israel, Italy, Japan, Korea, Latvia, Lebanon, Liechtenstein, Luxembourg, Malta, Mexico, Monaco, Netherlands, Norway, Panama, Poland, Portugal, Puerto Rico, Romania, Saudi Arabia, Singapore, Slovenia, Slovakia, Spain, Sweden, Switzerland, Taiwan, United Arab Emirates, United Kingdom, Uruguay, British Virgin Islands, and the U.S. Virgin Islands. If the anticipated Series A Distribution occurs, in lieu of Geron distributing the Asterias Series A common stock in jurisdictions other than those set forth above, the Asterias Series A common stock that would otherwise be distributed to Geron stockholders who reside in such jurisdictions will instead be sold for cash and the net cash proceeds will be distributed ratably to such stockholders. Fractional shares will also be sold for cash with the net cash proceeds to be distributed ratably to the Geron stockholders who were entitled to receive fractional shares of Asterias Series A common stock. Based on the number of shares of our common stock anticipated to be outstanding immediately after this offering as set forth below under "The Offering," and assuming the

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anticipated Series A Distribution occurs, a Geron stockholder eligible to receive Asterias Series A common stock in the Series A Distribution would receive one share of Asterias Series A common stock for every 23.165 shares of our common stock held on the record date. However, the exact ratio can only be determined upon the record date, if any, to be declared by our board of directors for the Series A Distribution. In the event that the conditions to our obligation to effect the Series A Distribution are met, we will publicly announce the record date at least ten days prior to the record date. If the anticipated Series A Distribution occurs and you sell your shares of Geron common stock prior to the record date for the Series A Distribution, you would not receive any shares of Asterias Series A common stock (or cash in lieu thereof) in the Series A Distribution.

Asterias is a newly organized, development stage company in the start-up phase, and has only recently commenced its primary product development programs. To date, Asterias' operations have been primarily limited to organizing and staffing its company and completing the acquisition of our former stem cell assets. Accordingly, it is difficult if not impossible to predict Asterias' future performance or to evaluate its business and prospects. In addition, there is currently no existing public market for either the Asterias Series A common stock (or any other Asterias securities) or the BioTime Warrants, and there can be no assurance that an active public market for either the Asterias Series A common stock or BioTime Warrants will ever develop. For these and other reasons, any value ascribed to the Asterias Series A common stock or the BioTime Warrants is highly speculative and an investment decision in our common stock should be based solely on an evaluation of our company, its business and its prospects, and the terms of this offering. In addition, we do not know when, if ever, the anticipated Series A Distribution will occur and it is possible that it may never occur. Please see the risk factor entitled "Our stockholders may realize little or no value from the divestiture of our stem cell assets, and as a result our stock price may decline, we could be subject to litigation, and our business may be adversely affected" under "Risk Factors" in this prospectus supplement.

Tax Consequences of Anticipated Distribution

If the anticipated Series A Distribution occurs, the Series A Distribution will not qualify as a tax-free spin-off under Section 355 of the Internal Revenue Code of 1986, as amended, or the Code. Accordingly, the fair market value of the Asterias Series A common stock at the time of the Series A Distribution, if it occurs, and the amount of any cash distributed will be treated as dividend income for U.S. federal income tax purposes for Geron stockholders to the extent made out of our current or accumulated earnings and profits (as determined under U.S. federal income tax principles), if any. We believe we had no accumulated earnings and profits as of the end of 2013, and we expect that we also will have no current earnings and profits for 2014. Accordingly, we do not believe the distribution of the Asterias Series A common stock and any cash distributed will result in dividend income to Geron stockholders provided that such distribution occurs in 2014. However, because the amount of our 2014 current earnings and profits, if any, cannot be known before the end of 2014, because we have not performed a formal study of our accumulated earnings and profits as of the end of 2013, and because both the timing and occurrence of the Series A Distribution is uncertain and so could be made after the end of 2014, if at all, we can provide no assurance that the Series A Distribution, should it occur, would not result in any dividend income to Geron stockholders. In addition, we cannot tell you whether Asterias has earnings and profits and therefore whether the anticipated distribution of the BioTime Warrants by Asterias will result in dividend income. If a "Non-U.S. Holder" (as defined below under "Material U.S. Federal Income and Estate Tax Considerations for Non-U.S. Holders of Our Common Stock") is treated as receiving dividend income, such Non-U.S. Holder would generally be subject to U.S. federal withholding tax at a 30% rate (or lower applicable treaty rate).

To the extent that the fair market value of the Asterias Series A common stock and the amount of any cash distributed exceeds our current and accumulated earnings and profits, if any, they will first reduce Geron stockholders' adjusted basis in our common stock, but not below zero, and then

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will be treated as gain to the extent of any excess. Any gain resulting from the Series A Distribution will be short-term capital gain if the Geron stockholder has held our stock for one year or less at the time of the Series A Distribution. The distribution by Asterias of the BioTime Warrants, if it occurs, will be subject to similar U.S. federal income tax treatment except that the amount of dividend income, if any, would be based on the current or accumulated earnings and profits of Asterias, and any fair market value of BioTime Warrants in excess of any such dividend amount would result in gain to the extent such excess value exceeded the adjusted tax basis of the Asterias Series A common stock. Any gain resulting from the distribution of the BioTime Warrants will be short-term capital gain if the Geron stockholder has held the Asterias Series A common stock for one year or less at the time of the distribution of the BioTime Warrants.

If any dividend income or gain were recognized by Geron stockholders in respect of our anticipated distribution of the Asterias Series A common stock and cash, if any, or the anticipated distribution by Asterias of the BioTime Warrants, as described above, then Geron stockholders could incur U.S. federal income taxes with respect to the receipt of such distribution. The lack of an existing market for the Asterias Series A common stock could limit or preclude the ability of our stockholders to sell a sufficient quantity of Asterias Series A common stock to satisfy such potential tax liabilities. As a result, if the anticipated Series A Distribution occurs, Geron stockholders may incur tax liabilities, but be unable to realize value from any Asterias Series A common stock distributed by Geron and/or the BioTime Warrants to be distributed by Asterias. Because no further action is required on the part of Geron stockholders to receive the Asterias Series A common stock and the related BioTime Warrants in the distributions, if the anticipated Series A Distribution occurs and Geron stockholders do not want to receive the Asterias Series A common stock and the related BioTime Warrants in the anticipated distributions (or cash in lieu thereof), the only recourse for Geron stockholders will be to divest their Geron common stock prior to the record date set by our board of directors for the Series A Distribution. Prospective investors are urged to consult their tax advisors with respect to the tax consequences of the anticipated distributions generally and in their particular circumstances, including the consequences of any proposed change in applicable law.

This foregoing discussion of the anticipated Series A Distribution is for informational purposes only and shall not constitute an offer to sell or the solicitation of an offer to buy any securities of Asterias or BioTime, nor shall there be any sale of these securities in any state or other jurisdiction in which such offer, solicitation or sale would be unlawful prior to the registration or qualification under the securities laws of any such state or other jurisdiction.

Financial Update

While we have not finalized our full financial results for the fiscal year ended December 31, 2013, we expect to report that we had approximately $66.0 million of cash, cash equivalents, restricted cash and marketable securities as of December 31, 2013. This amount is preliminary, has not been audited and is subject to change upon completion of our ongoing audit. Additional information and disclosures would be required for a more complete understanding of our financial position and results of operations as of December 31, 2013.

Corporate Information

We were incorporated in the state of Delaware on November 28, 1990. Our principal executive offices are located at 149 Commonwealth Drive, Menlo Park, California 94025. Our telephone number is (650) 473-7700. Our website is www.geron.com. Information found on, or accessible through, our website is not a part of, and is not incorporated into, this prospectus supplement or the accompanying prospectus, and you should not consider it part of this prospectus supplement or the accompanying prospectus.

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THE OFFERING

Common stock offered by us	22,500,000 shares
Common stock to be outstanding immediately after this offering	151,449,459 shares
Option to purchase additional shares	The underwriters have an option to purchase up to 3,375,000 additional shares of our common stock. The underwriters may exercise this option at any time within 30 days from the date of this prospectus supplement.
Use of proceeds	We intend to use the net proceeds from this public offering to fund research and development, including our planned Phase 2 clinical trial of imetelstat in MF, and for working capital and general corporate purposes. See "Use of Proceeds" on page S-45 of this prospectus supplement.
NASDAQ Global Select Market Symbol	"GERN"
Risk Factors	Investing in our common stock involves significant risks. See "Risk Factors" beginning on page S-16 of this prospectus supplement for a discussion of the factors you should carefully consider before deciding whether to invest in shares of our common stock.

The number of shares of our common stock to be outstanding immediately after this offering as shown above is based on 128,949,459 shares of common stock outstanding as of September 30, 2013 and excludes:

- 18,984,837 shares of our common stock issuable upon the exercise of options outstanding as of September 30, 2013, having a weighted average exercise price of $3.44 per share;
- 1,619,275 shares of our common stock issuable upon the exercise of warrants outstanding as of September 30, 2013 at a weighted average price of $3.91 per share;
- an aggregate of 14,472,070 shares of our common stock reserved for future issuance under our 2011 Incentive Award Plan and our 2006 Directors' Stock Option Plan as of September 30, 2013; and
- 318,453 shares of our common stock reserved for future issuance under our 1996 Employee Stock Purchase Plan as of September 30, 2013.

In addition, the number of shares of our common stock to be outstanding immediately after this offering as shown above excludes the up to $50.0 million of common stock that remained available for sale at September 30, 2013 pursuant to an At-the-Market Issuance Sales Agreement, or Sales Agreement, that we entered into with MLV & Co. LLC, or MLV, on October 8, 2012. No sales of common stock will be made under the Sales Agreement during the 60-day lock-up period described in the section entitled "Underwriting" in this prospectus supplement. The number of shares of our common stock to be outstanding immediately after this offering as shown above does include 411,341 unvested shares of our common stock issued as restricted stock awards and outstanding as of September 30, 2013.

Except as otherwise indicated, all information in this prospectus supplement assumes no exercise by the underwriters of their option to purchase additional shares.

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RISK FACTORS

Our business is subject to various risks, including those described below. You should carefully consider the following risks, together with all of the other information included in this prospectus supplement, the accompanying prospectus, the documents incorporated by reference in this prospectus supplement and the accompanying prospectus, and any free writing prospectus prepared by or on behalf of us or to which we have referred you, before investing in our common stock. If any of these risks actually occurs, our business, financial condition, results of operations and future prospects would likely be materially and adversely affected. In these circumstances, the market price of our common stock would likely decline, and you may lose all or part of your investment.

RISKS RELATED TO OUR BUSINESS

Our success is solely dependent on the success of one early-stage product candidate, imetelstat, and we cannot be certain that imetelstat will advance to subsequent clinical trials or receive regulatory approval on a timely basis, or at all.

Our business is at an early stage of development, and we are wholly dependent on the success of imetelstat, our sole product candidate. We do not have any products that are commercially available. Our ability to develop imetelstat to and through regulatory approval and commercial launch is subject to significant risks and uncertainties and our ability to, among other things:

- receive positive safety and efficacy data from existing and potential future investigator-sponsored trials of imetelstat, such as the Myelofibrosis IST, that provide the clinical rationale for the potential or continued development of imetelstat in hematologic myeloid malignancies;
- ascertain that the use of imetelstat does not result in significant systemic or organ toxicities or other safety issues resulting in an unacceptable benefit-risk profile;
- develop clinical plans for, and successfully enroll and complete, planned and potential future Geron-sponsored clinical trials of imetelstat in hematologic myeloid malignancies;
- collaborate successfully with clinical trial sites, academic institutions, clinical research organizations, physician investigators, including any physician investigators conducting investigator-sponsored trials of imetelstat, and other third parties;
- obtain positive clinical data from potential future Geron-sponsored clinical trials to enable subsequent clinical trials;
- obtain required regulatory clearances and approvals for imetelstat; for example, it is uncertain whether the U.S. Food and Drug Administration, or FDA, and regulatory authorities in other countries will require us to obtain and submit additional preclinical, manufacturing, or clinical data to proceed with any planned and potential future Geron-sponsored clinical trials; how the FDA and other regulatory authorities will interpret safety and efficacy data from any clinical trial, including the Myelofibrosis IST; how they will assess clinical benefit with data from a proposed composite remission endpoint that we expect will be evaluated in future Geron-sponsored clinical trials; the scope and type of clinical development and other data they might require us to generate and submit, especially with a novel primary efficacy endpoint such as a composite remission endpoint, before they might grant a marketing approval, if any; and the length of time and cost for us to complete any such requirements;
- enter into arrangements with third parties to provide services needed to further research and develop imetelstat, or to manufacture imetelstat, in each case at commercially reasonable costs;

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enter into arrangements with third parties, or establish internal capabilities, to provide sales, marketing and distribution functions in compliance with applicable laws;

obtain appropriate coverage and reimbursement levels for the cost of imetelstat from governmental authorities, private health insurers and other third-party payors;

maintain and enforce adequate intellectual property protection for imetelstat;

maintain adequate financial resources and personnel to advance imetelstat to and through subsequent clinical trials, regulatory approval and commercial launch; and

obtain financing on commercially reasonable terms to fund our operations.

If we are not able to successfully achieve the above-stated goals and overcome other challenges that we may encounter in the research, development, manufacturing and commercialization of imetelstat, we may be forced to abandon our development of imetelstat, which would severely harm our business and could potentially cause us to cease operations.

We are currently focused on the development of imetelstat in hematologic myeloid malignancies, other than ET, and future Geron-sponsored clinical development of imetelstat is highly dependent on the results of existing and potential future investigator-sponsored trials of imetelstat in hematologic myeloid malignancies, including the Myelofibrosis IST. We have been informed by Mayo Clinic that the Myelofibrosis IST has been closed to new patient enrollment effective January 22, 2014 and that the remaining patients in the study will continue to receive imetelstat treatment and be followed under the Myelofibrosis IST protocol.

We may be unable to develop, or initiate the development of, imetelstat in MF or any additional hematologic myeloid malignancy indications, which would likely result in our decision to discontinue development of imetelstat and to potentially cease operations. In any event, imetelstat will require significant additional clinical testing prior to possible regulatory approval in the United States and other countries, and we do not expect imetelstat to be commercially available for many years, if at all. Our clinical development program for imetelstat may not lead to regulatory approval from the FDA and similar foreign regulatory agencies if we fail to demonstrate that imetelstat is safe and effective. We may therefore fail to commercialize imetelstat. Any failure to advance imetelstat to subsequent clinical trials, failure to obtain regulatory approval of imetelstat, or limitations on any regulatory approval that we might receive, would severely harm our business and prospects, and could potentially cause us to cease operations.

Our ability to generate product revenue is dependent on the successful regulatory approval and commercialization of imetelstat. Imetelstat may not prove to be more effective for treating hematologic cancers than current therapies. Competitors or other third parties may also have proprietary rights that prevent us from developing and marketing imetelstat, or our competitors may discover or commercialize similar, superior or lower-cost products that make imetelstat unsuitable for marketing. Imetelstat also may not be able to be manufactured in commercial quantities at an acceptable cost. Any of the factors discussed above could delay or prevent us from developing, commercializing or marketing imetelstat, which would materially adversely affect our business and could potentially cause us to cease operations.

If imetelstat were to have an unacceptable benefit-risk profile, our business and prospects could be severely harmed.

Although toxicities and other safety issues to date have not resulted in what we believe is an unacceptable benefit-risk profile in our Phase 2 clinical trials of imetelstat in ET or multiple myeloma, or in the Myelofibrosis IST, if there are safety results that cause the benefit-risk profile to become unacceptable with respect to patients enrolled in clinical trials of imetelstat conducted now or in the future by us or any independent investigator, including the Myelofibrosis IST, we would likely be

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delayed or prevented from advancing imetelstat into further clinical development and may decide or be required to discontinue our development of imetelstat, which would severely harm our business and prospects, and would likely cause us to cease operations. Imetelstat may prove to have undesirable or unintended side effects or other characteristics adversely affecting its safety, efficacy or cost effectiveness that could prevent or limit its approval for marketing and successful commercial use, or that could delay or prevent the commencement and/or completion of clinical trials for imetelstat. For example, in our Phase 1 clinical trials of imetelstat, we observed dose-limiting toxicities, including reduced platelet count, or thrombocytopenia, when the drug was used as a single agent, and reduced white blood cell count, or neutropenia, when the drug was used in combination with paclitaxel, as well as a low incidence of severe infusion reactions. In our Phase 2 clinical trials of imetelstat in ET, multiple myeloma and solid tumors, we have observed hematologic toxicities, abnormal laboratory liver function tests, and non-laboratory test findings such as gastrointestinal events, infections, muscular and joint pain and fatigue. In the Myelofibrosis IST, myelosuppression has been the primary dose-limiting toxicity reported to date, consistent with our observations in previous Geron-sponsored imetelstat studies. However, during the Myelofibrosis IST, more persistent and profound myelosuppression, particularly thrombocytopenia, was observed with imetelstat administered on a weekly basis. This included one case of febrile neutropenia after prolonged myelosuppression with intracranial hemorrhage resulting in patient death, which was assessed as possibly related to imetelstat by the investigator. We may in the future observe or report dose-limiting or hematologic toxicities or other safety issues in our ongoing Phase 2 clinical trials of imetelstat in ET and multiple myeloma or in our planned and potential future Geron or investigator-sponsored trials of imetelstat. Likewise, because the Myelofibrosis IST is still ongoing, the investigator may observe or report additional or more severe toxicities or safety issues in the Myelofibrosis IST, including additional serious adverse events, as patient treatment continues and more data becomes available. If such toxicities or other safety issues result in an unacceptable benefit-risk profile, this would likely delay or prevent the commencement and/or completion of our ongoing, planned or potential future clinical trials or investigator-sponsored trials, including the Myelofibrosis IST and our planned Phase 2 clinical trial of imetelstat in MF, and may require us to conduct additional, unforeseen trials or to abandon our development of imetelstat entirely.

Success in early clinical trials may not be indicative of results in subsequent clinical trials. Likewise, data reported by investigators from time-to-time is subject to audit and verification procedures that could result in material differences to final data and may change as more patient data becomes available.

A number of new drugs and biologics have shown promising results in initial clinical trials, but subsequently failed to establish sufficient safety and efficacy data to obtain necessary regulatory approvals. Data obtained from preclinical and clinical activities are subject to varying interpretations, which may delay, limit or prevent regulatory approval.

Data from our preclinical studies and Phase 1 and Phase 2 clinical trials of imetelstat, as well as preliminary, additional or updated data from investigator-sponsored trials, including the Myelofibrosis IST, should not be relied upon as evidence that subsequent or larger-scale clinical trials will succeed. The positive results we have obtained from the patients enrolled in the Phase 2 clinical trial of imetelstat in ET may not predict the future therapeutic benefit of imetelstat, if any, in other hematologic myeloid malignancies, including MF. For example, the known dose-limiting toxicities associated with imetelstat, such as profound thrombocytopenia and febrile neutropenia and other safety issues, including death, that have been observed in both Geron and investigator-sponsored trials, including the Myelofibrosis IST, could cause complexities in treating patients with MF and could result in the discontinuation of any of these trials. Also, the IWG-MRT criteria used to assess efficacy in the Myelofibrosis IST, and the proposed composite remission efficacy endpoint based on modifications of the IWG-MRT criteria that we may use for our planned Phase 2 clinical trial in MF, have not been validated for clinical use and may not be considered by the FDA or other regulatory agencies to be

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accurate predictors of efficacy for different endpoints that may be required by the FDA or other regulatory agencies for Phase 3 clinical trials.

In addition, because the Myelofibrosis IST is not a Geron-sponsored trial, the clinical testing of imetelstat in the Myelofibrosis IST requires us to rely on the investigator's plan, design and conduct of the trial, and the evaluation and reporting of results of the Myelofibrosis IST by the investigator, all of which we do not control. The preliminary efficacy results of the Myelofibrosis IST are based solely on data from the first two cohorts of the Myelofibrosis IST, consisting of 22 patients, and we will need to seek to replicate the results of the Myelofibrosis IST across one or more larger Phase 2 and Phase 3 trials in MF at multiple treating centers. The results reported by the investigator in the Myelofibrosis IST may not be replicated in any trials conducted by Geron or by any other investigator or group of investigators, or in any trial enrolling a larger number of patients or conducted at multiple treating centers, and thus should not be relied upon as indicative of future clinical results of imetelstat in MF or any other hematologic myeloid malignancy.

In addition, from time-to-time, we may report or announce preliminary data from Geron-sponsored and investigator-sponsored trials. For example, we have announced preliminary safety and efficacy data from the first two cohorts of the Myelofibrosis IST. Since this data is preliminary, the final data from the trial may be materially different than the data we have previously reported. The preliminary data is also subject to the risk that one or more of the clinical outcomes may materially change as patient treatment continues and additional and updated patient data becomes available. Since the Myelofibrosis IST is ongoing, safety and efficacy data continues to be generated, and such additional and updated data is not reflected in the preliminary data presented by the investigator at the ASH annual meeting in December 2013. Because the additional and updated safety and efficacy data may be materially different from the preliminary data that we have reported, such preliminary data should be considered carefully and with caution. Additional and updated data is also subject to our audit and verification procedures, and since this could result in material differences from the data reported by the investigator, additional or updated data that may be reported from the Myelofibrosis IST should be considered carefully and with caution.

Material adverse changes in final data could significantly harm our business prospects. Even if final safety and efficacy data from the Myelofibrosis IST are positive, significant additional clinical testing will be necessary for the future development of imetelstat in MF. Any such final safety and efficacy data from the Myelofibrosis IST may not be reproducible in future clinical trials.

We will be required to demonstrate through multiple Geron-sponsored clinical trials, including larger-scale Phase 3 clinical trials, that imetelstat is safe and effective for use in a diverse population before we can seek to obtain regulatory approval for its commercial sale. There is typically an extremely high rate of attrition from the failure of drug candidates proceeding through clinical trials. If we are unable to develop imetelstat in future clinical trials, including Phase 3 clinical trials, our business may fail.

Our research and development of imetelstat is subject to numerous risks and uncertainties.

The science and technology of telomere biology, telomerase and our proprietary oligonucleotide chemistry are relatively new. There is no precedent for the successful commercialization of a therapeutic product candidate based on these technologies. We must undertake significant research and development activities to develop imetelstat based on these technologies, which will require significant additional funding beyond the anticipated net proceeds from this offering and may take years to accomplish, if at all.

Because of the significant scientific, regulatory and commercial milestones that must be reached for our research and development of imetelstat to be successful, our development of imetelstat in hematologic myeloid malignancies, including MF, or any other indication, may be delayed or abandoned, even after we have expended significant resources on it. Our decisions to discontinue our

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Phase 2 clinical trial of imetelstat in metastatic breast cancer in September 2012, and to discontinue our development of imetelstat in solid tumors with short telomeres in April 2013, are examples of this. Any delay or abandonment of our development of imetelstat in hematologic myeloid malignancies would have a material adverse effect on, and likely result in the failure of, our business.

Our stockholders may realize little or no value from the divestiture of our stem cell assets, and as a result our stock price may decline, we could be subject to litigation, and our business may be adversely affected.

The completion of our obligations under the Contribution Agreement among us, BioTime and Asterias to effect the Series A Distribution is subject to numerous risks and uncertainties. We may be unable to complete, on a timely basis or at all, the pro rata distribution by us of the Asterias Series A common stock received by us from Asterias under the Contribution Agreement or we may be unable to pay, in a timely manner or at all, cash in lieu of either fractional shares or shares that would otherwise be distributed to stockholders in certain excluded jurisdictions, in each case as contemplated by the Contribution Agreement. Prior to our ability to set a record date for the Series A Distribution, we must receive notice from BioTime and Asterias that certain securities registration or qualification requirements have been met by them, including notice that the registration statement that Asterias filed with the SEC covering the Series A Distribution has been declared effective by the SEC and is otherwise available to effect the Series A Distribution, which may not occur on a timely basis or at all. In this regard, our ability to effect the Series A Distribution has been delayed beyond our expectations, and we have no control over when and whether the Asterias registration statement will ultimately be declared effective by the SEC and available to us in order to effect the Series A Distribution. Likewise, Asterias may be unable to distribute to the Asterias Series A stockholders the BioTime Warrants received by them from BioTime under the Contribution Agreement. These anticipated distributions may be further delayed, perhaps substantially, or precluded altogether for a variety of reasons, including the failure of BioTime and/or Asterias to obtain or maintain required federal and state registrations and qualifications necessary to enable us to effect the Series A Distribution and/or to enable Asterias to complete the distribution of the BioTime Warrants.

In addition, there is currently no existing public market for either the Asterias Series A common stock (or any other Asterias securities) or the BioTime Warrants, and there can be no assurance that an active public market for either the Asterias Series A common stock or BioTime Warrants will ever develop. The absence of an active public market for these securities would make it difficult for holders of Asterias Series A common stock to sell their shares of Asterias Series A common stock or BioTime Warrants and would adversely affect the value of the Asterias Series A common stock and the BioTime Warrants. While Asterias plans to arrange for the trading of the Asterias Series A common stock on the OTC Bulletin Board upon the completion of the Series A Distribution, if it occurs, the Asterias Series A common stock may be thinly traded or not at all, and may be subject to the SEC's "penny stock" rules that impose restrictive sales practice requirements on broker-dealers who sell penny stocks and provide for certain additional disclosure requirements in connection with the sale of penny stocks. These rules may have the effect of reducing the level of trading activity for the Asterias Series A common stock. In addition, until such time as the Asterias Series A common stock is listed on a national securities exchange, which may never occur, applicable state securities laws may restrict the states in which and conditions under which Geron stockholders who receive shares of Asterias Series A common stock in the Series A Distribution (if it occurs) can sell such shares. For these and other reasons, if the anticipated Series A Distribution occurs, Geron stockholders may not be able to sell their shares of Asterias Series A common stock in a timely manner or at an orderly market price, if at all, and Geron stockholders may otherwise find it difficult to sell their Asterias Series A common stock. In addition, Asterias is a newly organized, development stage company in the start-up phase, and has only recently commenced its operations. To date, Asterias' operations have been primarily limited to organizing and staffing its company and completing the acquisition of our former stem cell assets. Accordingly, it is difficult if not impossible to predict

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Asterias' future performance or to evaluate its business and prospects. For these and other reasons, any value ascribed to the Asterias Series A common stock or the BioTime Warrants is highly speculative and an investment decision in our common stock should be based solely on an evaluation of our company, its business and its prospects, and the terms of this offering.

The anticipated distributions of the Asterias Series A common stock by us, and the BioTime Warrants by Asterias, and related transactions, as well as the asset contribution transaction itself, could also result in litigation against us, including litigation arising from or related to the value, if any, from the Asterias Series A common stock and/or the BioTime Warrants or our role as a named underwriter with respect to the Series A Distribution, or litigation based on other matters related to the Contribution Agreement or the transactions contemplated thereby. For example, some of our investors purchased shares of our common stock because they were interested in the opportunities presented by our human embryonic stem cell programs. Thus, certain stockholders may attribute substantial financial value to our stem cell assets. If our stockholders believe that the financial value which is or may be received by us or them from the divestiture of our former stem cell assets is inadequate, our stock price may decline and litigation may occur. Likewise, those Geron stockholders residing in certain excluded jurisdictions will not receive any Asterias Series A common stock or BioTime Warrants in the distributions should they occur, and will receive only cash instead, which may be viewed as inadequate, and which will result in those Geron stockholders having no continuing interest in our divested human embryonic stem cell programs as stockholders or otherwise, which could also result in litigation against us. As a result of these and other factors, we may be exposed to a number of risks, including declines or fluctuations in our stock price, additional advisor and legal fees, and distractions to our management caused by activities undertaken in connection with resolving any disputes related to the transaction. The occurrence of any one or more of the above could have an adverse impact on our business and financial condition.

RISKS RELATED TO CLINICAL AND COMMERCIALIZATION ACTIVITIES

The ability to conduct and complete planned and potential future Geron-sponsored or any investigator-sponsored trials of imetelstat on a timely basis is subject to risks and uncertainties related to factors such as performance by investigator-sponsors, availability of drug supply, patient enrollment, and regulatory authorization.

Delays or terminations of our planned and potential future clinical trials and of investigator-sponsored trials could be caused by matters such as:

- lack of effectiveness of imetelstat during clinical trials or results that do not demonstrate statistically significant efficacy;
- safety issues, side effects or dose-limiting toxicities, including any additional or more severe safety issues related to imetelstat which may be observed in Geron-sponsored or investigator-sponsored trials, whether or not in the same indications or therapeutic areas;
- disruptions due to drug supply or quality issues;
- failure by independent physicians conducting existing or future investigator-sponsored trials of imetelstat to timely commence, enroll, complete or report data from such investigator-sponsored trials;
- not receiving timely regulatory clearances or approvals in any jurisdiction, whether within or outside of the United States, including, for example, not receiving acceptance of new manufacturing specifications or procedures or clinical trial protocol amendments by regulatory authorities, or not otherwise obtaining regulatory clearance to commence subsequent clinical trials;

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not receiving timely institutional review board or ethics committee approval of clinical trial protocols or protocol amendments;

delays in patient enrollment due to size and nature of patient population, nature of protocols, proximity of patients to clinical sites, availability of effective treatments for the relevant disease and eligibility criteria for the trial;

difficulty in obtaining or accessing necessary clinical data, including from the Myelofibrosis IST, which may result in incomplete data sets;

unavailability of any study-related treatment (including comparator therapy);

lack of adequate funding to continue any clinical trial, including funding requirements resulting from unforeseen costs due to enrollment delays or discontinued participation by patients;

issues with key vendors of clinical services, such as contract research organizations and laboratory service providers; or

governmental or regulatory delays, information requests, clinical holds, and changes in regulatory requirements, policies and guidelines.

Our enrollment goals for future clinical trials of imetelstat, including our planned Phase 2 clinical trial in MF, and the enrollment goals of independent physicians conducting existing or future investigator-sponsored trials of imetelstat, may not be met. In addition, our inability to retain, or the inability of independent physicians conducting investigator-sponsored trials of imetelstat to retain, patients who have enrolled in a clinical trial but may be prone to withdraw due to side effects from imetelstat, lack of efficacy or personal issues, or who are lost to further follow-up, could result in clinical trial delays, the inability to complete clinical trials, or incomplete data sets. Further, any of our future clinical trials may be overseen by an internal safety monitoring committee, or ISMC, and an ISMC may determine to delay or suspend one or more of these trials due to safety or futility findings based on events occurring during a clinical trial. Data that we receive from independent physician investigators may be flawed or incomplete if the investigators fail to follow appropriate clinical or quality practices. Delays in timely completion of clinical testing of imetelstat, in clinical trials conducted by us or by independent physician investigators could increase research and development costs and could prevent or would delay us from obtaining regulatory approval for imetelstat, both of which would likely have a material adverse effect on our business. In addition, future Geron-sponsored clinical development of imetelstat is highly dependent on the results of existing and potential future investigator-sponsored trials of imetelstat in hematologic myeloid malignancies, including the Myelofibrosis IST. Accordingly, a delay in the timely completion of or reporting of data from the Myelofibrosis IST could have a material adverse effect on our ability to further develop imetelstat or to advance imetelstat to subsequent clinical trials. Also, adverse safety results from investigator-sponsored trials of imetelstat, including those results that have been reported and those that may in the future be reported from the Myelofibrosis IST, could delay or prevent the initiation or continuation of Geron-sponsored clinical development of imetelstat.

Delays in the initiation of, or our inability to initiate, subsequent clinical trials of imetelstat could result in increased costs to us and would delay our ability to generate or prevent us from generating revenues.

To date, we have not initiated any clinical trials evaluating imetelstat in any hematologic myeloid malignancies (other than ET), including MF. We are currently focused on the development of imetelstat in hematologic myeloid malignancies, other than ET, and future Geron-sponsored clinical development of imetelstat is highly dependent on the results of existing and potential future investigator-sponsored trials of imetelstat in hematologic myeloid malignancies, including the Myelofibrosis IST. Because investigator-sponsored trials are not Geron-sponsored trials, the clinical testing of imetelstat in investigator-sponsored trials requires us to rely on the applicable investigator's

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design and conduct of the trial, which we do not control, and it is possible that the FDA or other regulatory agencies will not view these investigator-sponsored trials, including the Myelofibrosis IST, as providing adequate support for future clinical trials, whether controlled by us or third parties, for any one or more reasons, including elements of the design or execution of these investigator-sponsored trials or safety concerns or other trial results. Accordingly, failure by physician investigators to properly design or conduct existing or potential future investigator-sponsored trials of imetelstat could produce results that might delay or prevent us from advancing imetelstat into further clinical development. In addition, we do not have control over the timing and reporting of the data from the Myelofibrosis IST or any other investigator-sponsored trials, nor do we own the data from the trials. Our arrangements with investigators may provide us certain information rights with respect to the trials, including access to and the ability to use and reference the data, including for our own regulatory filings, resulting from the trials. If these obligations are breached by the investigators, or if the data prove to be inadequate compared to the first-hand knowledge we might have gained had the trials been Geron-sponsored clinical trials, or if the data cannot be audited or verified by us, then our ability to design and conduct any Geron-sponsored clinical trials may be adversely affected. Additionally, the FDA or other regulatory agencies may disagree with our interpretation of preclinical, manufacturing, or clinical data generated by any investigator-sponsored trials. If so, the FDA or other regulatory agencies may require us to obtain and submit additional preclinical, manufacturing, or clinical data before we may initiate potential future Geron-sponsored clinical trials of imetelstat and/or may not accept such additional data as adequate to initiate any such Geron-sponsored clinical trials. Further, if we are unable to verify, confirm or replicate the results from the Myelofibrosis IST or if negative results are obtained, we would likely be further delayed or prevented from advancing imetelstat into further clinical development and might decide to discontinue our development of imetelstat, which would severely harm our business and prospects, and could potentially cause us to cease operations.

In addition to the matters discussed above, the commencement of subsequent clinical trials for imetelstat could be delayed or abandoned for a variety of reasons, including as a result of failures or delays in:

- commencement, enrollment or completion of clinical trials conducted by physician investigators conducting investigator-sponsored trials, or independent physician investigators promptly or adequately reporting data from such trials;
- demonstrating sufficient safety and efficacy in Phase 2 clinical trials conducted by us or by independent physician investigators to obtain regulatory clearance to commence subsequent clinical trials;
- obtaining sufficient funding;
- manufacturing sufficient quantities of imetelstat;
- producing imetelstat in a manner that meets the quality standards of the FDA and other regulatory agencies;
- ensuring our ability to manufacture imetelstat at acceptable costs for Phase 3 clinical trials and commercialization;
- obtaining clearance or approval of proposed trial designs or manufacturing specifications from the FDA and other regulatory authorities;
- reaching agreement on acceptable terms and on a timely basis, if at all, with collaborators and vendors located in the United States or in foreign jurisdictions, including contract research organizations, laboratory service providers, and the trial sites, on all aspects of clinical trials;
- obtaining institutional review board or ethics committee approval to conduct a clinical trial at a prospective site; and

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securing and successfully screening appropriate subjects for participation in clinical trials.

The occurrence of any of these events could adversely affect our ability to initiate, maintain or successfully complete subsequent clinical trials, including our planned Phase 2 clinical trial of imetelstat in MF, which could increase our development costs or our ability to generate revenues could be impaired, either of which could adversely impact our financial results and have a material adverse effect on our business.

We may not be able to manufacture imetelstat at costs or scales necessary to conduct our clinical trials or potential future commercialization activities.

Imetelstat is likely to be more expensive to manufacture than most other treatments currently available today or that may be available in the future. The commercial cost of manufacturing imetelstat will need to be significantly lower than our current costs in order for imetelstat to become a commercially successful product. Oligonucleotides are relatively large molecules produced using complex chemistry, and the cost of manufacturing an oligonucleotide like imetelstat is greater than the cost of making typical small-molecule drugs. Our present imetelstat manufacturing processes are conducted at a relatively modest scale appropriate for our ongoing Phase 2 clinical trials and investigator-sponsored trials for which we provide clinical drug supply. We may not be able to achieve sufficient scale increases or cost reductions necessary for successful commercial production of imetelstat. Additionally, given the complexities of our manufacturing processes, the resulting costs that we incur to conduct our clinical trials may be higher than for other comparable treatments, requiring us to expend relatively larger amounts of cash to complete our clinical trials, which would negatively impact our financial condition and could increase our need for additional capital.

Manufacturing imetelstat is subject to process and technical challenges and regulatory risks.

We face numerous risks and uncertainties with regard to manufacturing imetelstat. Regulatory requirements for oligonucleotide products are less well-defined than for small-molecule drugs, and there is no guarantee that we will achieve sufficient product quality standards required for Phase 3 clinical trials or for commercial approval and manufacturing of imetelstat. Changes in our manufacturing processes or formulations for imetelstat that may be made during later stages of clinical development, including during Phase 3 clinical trials, may result in regulatory delays, the need for further clinical trials, rejection of a marketing application, or limitation on marketing authorization by regulatory authorities, which would result in a material adverse effect on our business.

We have never conducted large-scale, Phase 3 clinical trials, nor do we have experience as a company in those areas required for the successful commercialization of imetelstat.

We have never conducted large-scale, Phase 3 clinical trials. We cannot be certain that any large-scale, Phase 3 clinical trials will begin or be completed on time, if at all. In order to initiate large-scale, randomized, Phase 3 clinical trials, we will need to complete one or more Geron-sponsored Phase 2 clinical trials with positive data generated from those trials. Phase 3 clinical trials also will require additional financial and management resources and reliance on third-party clinical investigators, clinical research organizations, lab service providers, trial sites and consultants. Relying on third-party clinical investigators or clinical research organizations may cause delays that are outside of our control. Any such delays could have a material adverse effect on our business.

We also do not have commercialization capabilities for imetelstat, and we will need to establish sales, marketing and distribution capabilities or establish and maintain agreements with third parties to market and sell imetelstat. Developing internal sales, marketing and distribution capabilities is an expensive and time-consuming process. We may not be able to enter into third-party sales, marketing and distribution agreements on terms that are economically attractive, or at all. Even if we do enter

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into such agreements, these third parties may not successfully market or distribute imetelstat, which may materially harm our business.

Obtaining regulatory approvals to develop and market imetelstat 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 develop and commercialize imetelstat.

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 successfully conducting our development efforts or from commercializing imetelstat. The regulatory process, particularly for a biopharmaceutical product candidate like imetelstat, is uncertain, can take many years and requires the expenditure of substantial resources.

Prior to submission of any regulatory application seeking approval to commence commercial sales of imetelstat, we will be required to conduct extensive preclinical and clinical testing. For example, based on input from the FDA, investigators, and experts, the goals for our planned Phase 2 clinical trial in MF are to define and validate the key components of a composite remission endpoint appropriate for one or more randomized Phase 3 clinical trials that could be designed to potentially support full regulatory approval, and to identify the appropriate dosing regimen designed to optimize the benefit-risk profile of imetelstat. We expect the components of a composite remission endpoint to be based on the IWG-MRT criteria. The IWG-MRT criteria were established as a consensus among a group of academic experts, including the investigator for the Myelofibrosis IST and investigators for clinical trials of Jakafi® and other compounds in development for MF, in order to assess responses to investigational agents in clinical trials, but not as a regulatory endpoint to support marketing approval. Therefore, in our planned Phase 2 clinical trial in MF, we expect to modify some or all of the components of complete and partial remissions that are described in the IWG-MRT criteria to enable more objective, rigorous or reproducible measurement or assessment of responses, for example, by possibly using a central facility to review bone marrow histology, imaging to confirm reduction in splenomegaly, and/or a patient reporting tool to assess symptoms. If the FDA or other regulatory agencies do not agree that any data generated from our planned Phase 2 clinical trial in MF enabled us to identify or validate the components of an appropriate composite remission endpoint, or to identify an appropriate dosing regimen, we would likely be precluded from proceeding directly to one or more Phase 3 clinical trials in MF, which would significantly delay our development timeline or could preclude us from further developing imetelstat altogether, any of which would have a material adverse effect on our business. Similarly, if our interpretation of safety and efficacy data obtained from preclinical and clinical studies varies from interpretations by the FDA or regulatory authorities in other countries, this would likely delay, limit or prevent further development and approval of imetelstat and have a material adverse effect on our business. For example, the FDA and regulatory authorities in other countries may require more or different data than what is expected to be generated from the planned Geron-sponsored Phase 2 clinical trial in MF. In addition, delays or rejections of regulatory approvals, or limitations in marketing authorizations, may be encountered as a result of changes in regulatory environment or regulatory agency policy during the period of product development and/or the period of review of any application for regulatory agency approval for imetelstat. We do not expect to receive regulatory approvals for imetelstat for many years, if at all.

Imetelstat 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 imetelstat involves the application of new technologies and a new therapeutic approach, it may be subject to substantial additional review by various government regulatory authorities, and, as a result, the process of obtaining regulatory approvals for imetelstat may proceed more slowly than for product candidates based upon more conventional technologies, and any approval that we may receive could limit the use of imetelstat.

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Delays in obtaining regulatory agency approvals or limitations in the scope of such approvals could:

- significantly harm the commercial potential of imetelstat;
- impose costly procedures upon our activities;
- diminish any competitive advantages that we 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 imetelstat. If we obtain regulatory agency approval for imetelstat, this approval may entail limitations on the indicated uses or other aspects of the product label for which it can be marketed that could limit the potential commercial use of imetelstat. The occurrence of any of these events could materially adversely affect our business.

Failure to achieve continued compliance with government regulation over our products, if any, could delay or halt commercialization of imetelstat, our sole product candidate.

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 importation, seizure and withdrawal of the product from the market. The future sale by us of any commercially viable product will be subject to government regulation related to numerous matters, 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 from product sales 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, 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 OUR FINANCIAL POSITION AND NEED FOR ADDITIONAL FINANCING

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

We have incurred operating losses every year since our operations began in 1990. As of September 30, 2013, our accumulated deficit was approximately $883.5 million. Losses have resulted principally from costs incurred in connection with our research and development activities and from

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general and administrative costs associated with our operations. We expect to incur additional operating losses and, as our clinical development 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 milestones, royalties and other revenues from our licensing arrangements. We may be unsuccessful in entering into any new corporate collaboration or license agreements that result in revenues, or existing collaboration agreements or license arrangements may be terminated or expire. Any revenues generated from ongoing collaboration agreements and revenues from our licensing arrangements will not be sufficient alone to continue or expand our research or development activities and otherwise sustain our operations.

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 and our ability to sustain operations. Even if we do become profitable, we may not be able to sustain or increase profitability on a quarterly or annual basis.

We will continue to need substantial additional capital following this offering to conduct our operations and develop imetelstat, and our ability to obtain the necessary funding is uncertain.

We will continue to require substantial capital resources following this offering in order to conduct our operations and develop imetelstat, and we cannot assure you that our existing capital resources, equipment financing arrangement, future interest income and potential sales of our common stock, including pursuant to our Sales Agreement with MLV, 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 2014 and beyond;
- changes in our clinical development plans for imetelstat;
- our ability to meaningfully reduce manufacturing costs of imetelstat;
- the magnitude and scope of our imetelstat research and development program, including the number of indications we intend to pursue;
- the progress made, if any, in our imetelstat research and development program, including our potential future clinical trials and existing or future investigator-sponsored trials;
- our ability to establish, enforce and maintain strategic arrangements for research, development, clinical testing, manufacturing and marketing of imetelstat;
- the time and costs involved in obtaining regulatory clearances and approvals; and
- the costs involved in preparing, filing, prosecuting, maintaining, defending and enforcing patent claims.

In addition, changes in our business may occur that would consume available capital resources sooner than we expect. 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. We may raise equity capital at a stock price or on other terms that could result in substantial dilution of ownership for our stockholders. 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. Our ability to

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raise additional funds may be severely impaired if our product candidate, imetelstat, fails to show adequate safety or efficacy in ongoing or potential subsequent clinical trials, including in the Myelofibrosis IST and other investigator-sponsored trials.

Further, in the event that we obtain additional funds through arrangements with collaborative partners, these arrangements may require us to relinquish some or all of our rights to imetelstat, which could adversely affect our future business or operations.

If sufficient capital is not available, we may be required to delay, reduce the scope of, suspend or eliminate some or all of the elements of our imetelstat program, any of which could have a material adverse effect on our business.

Our ability to use our net operating loss carryforwards and certain other tax attributes may be limited.

Under Section 382 of the Code, if a corporation undergoes an "ownership change," generally defined as a greater than 50% change (by value) in its equity ownership over a three-year period, the corporation's ability to use its pre-change net operating loss carryforwards and other pre-change tax attributes (such as research tax credits) to offset its post-change taxable income or taxes may be limited. Changes in our stock ownership, some of which are outside of our control, may have resulted or could in the future result in an ownership change. If a limitation were to apply, utilization of a portion of our domestic net operating loss and tax credit carryforwards could be limited in future periods. In addition, a portion of the carryforwards may expire before being available to reduce future income tax liabilities.

RISKS RELATED TO PROTECTING OUR INTELLECTUAL PROPERTY

Our success will depend on our ability to protect our technologies and our product candidate, imetelstat, through patents and other intellectual property rights and to operate without infringing the rights of others.

Protection of our proprietary technology is critically important to our business. Our success will depend in part on our ability to obtain, enforce and extend our patents and maintain trade secrets, both in the United States and in other countries. If we are unsuccessful in either of these regards, the value of our technologies and imetelstat will be adversely affected, and we may be unable to continue our development of imetelstat. By way of example, we do not yet have issued compound patent coverage for imetelstat in Europe after 2020. 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 or our licensors are unsuccessful in obtaining and enforcing patents, we may not be able to further develop or commercialize imetelstat and our business may be negatively impacted, and we may be unable to continue our operations.

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.

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 and pharmaceutical 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 technologies and imetelstat, or enforce issued patents, is uncertain. If we infringe the patents of others, we may be

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blocked from continuing development work or be required to obtain licenses on terms that may impact the value of imetelstat or cause it to be commercially impracticable.

In addition, on September 16, 2011, the Leahy-Smith America Invents Act, or the AIA, was signed into law. The AIA includes a number of significant changes to United States patent law. These include provisions that affect the way patent applications will be prosecuted and may affect patent litigation. The United States Patent and Trademark Office, or the Patent Office, has developed new and untested regulations and procedures to govern the full implementation of the AIA. Many of the substantive changes to patent law associated with the AIA, and in particular, the first to file provisions, became effective on March 16, 2013. For example, under the AIA, patent rights are awarded to the first inventor to file a patent application with respect to a particular invention. Thus, after March 16, 2013, our ability to protect our patentable intellectual property depends, in part, on our ability to be the first to file patent applications with respect to our inventions. Delay in the filing of a patent application for any purpose, including further development or refinement of an invention, may result in the risk of loss of patent rights. The AIA and its implementation could increase the uncertainties and costs surrounding the prosecution of our patent applications and the enforcement or defense of our issued patents, all of which could have a material adverse effect on our business and financial condition.

The U.S. Supreme Court, or the Court, has also issued decisions for which the full impact is not yet understood. On June 13, 2013, in *Association for Molecular Pathology v. Myriad Genetics, Inc.* the Court held that claims to isolated genomic DNA were not patentable subject matter, but claims to complementary DNA (cDNA) molecules were patentable subject matter. The effect of the decision on patents for other isolated natural products is uncertain. On March 20, 2012, in *Mayo Collaborative Services, DBA Mayo Medical Laboratories, et al. v. Prometheus Laboratories, Inc.*, the Court held that several claims drawn to measuring drug metabolite levels from patient samples and correlating them to drug doses were not patentable subject matter. The decision has created uncertainty around the ability to patent certain biomarker-related method patents. These decisions have increased the uncertainty with regard to our ability to obtain patents in the future as well as the value of current and future patents, once obtained. Depending on decisions by the U.S. federal courts and the Patent Office, the interpretation of laws and regulations governing patents could change in unpredictable ways that would weaken our ability to obtain new patents or to enforce our existing patents, all of which could have a material adverse effect on our business.

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

Our patents may be challenged through administrative or judicial proceedings. Such proceedings are typically lengthy and complex, and an adverse decision can result in the loss of important patent rights. For example, where more than one party seeks 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. Our pending patent applications, or our issued patents, may be drawn into interference proceedings or be challenged through post-grant review procedures, which may delay or prevent the issuance of patents, or result in the loss of issued patent rights.

Under the AIA, interference proceedings have been eliminated for patent applications filed on or after March 16, 2013, and have been replaced with other types of proceedings, including derivation proceedings. The AIA also includes post-grant review procedures subjecting U.S. patents to post-grant review procedures similar to European oppositions. U.S. patents owned or licensed by us may therefore be subject to post-grant review procedures, as well as other forms of review and re-examination. A

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decision in such proceedings adverse to our interests could result in the loss of valuable patent rights and negatively impact our business.

Certain jurisdictions, such as Europe, New Zealand and Australia, permit oppositions to be filed against granted patents or patents proposed to be granted. Because our intent is to commercialize imetelstat internationally if approved for commercial sale, securing both proprietary protection and freedom to operate outside of the United States is important to our business. We have been 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.

These proceedings required significant time and costs required to protect our intellectual property rights. If we are unable to commit these types of resources for our imetelstat patent rights, we could be prevented or limited in the development of imetelstat, which would have a material adverse effect on our business.

For example, we have been involved in several patent oppositions before the European Patent Office, or EPO, with a series of companies (GemVax, Pharmexa and KAEL-GemVax) developing GV1001, a cancer vaccine that employs a short telomerase peptide to induce an immune response against telomerase. Pharmexa originally obtained a European patent with broad claims to the use of telomerase vaccines for the treatment of cancer. We opposed that patent and during the opposition proceedings and subsequent appeal the original claims were revoked and, new, narrower claims of the Pharmexa patent were allowed. In February 2010 and in March 2012, GemVax, AS, a company related to KAEL-GemVax, was granted two further related European patents covering its telomerase peptide vaccine, which we also opposed. In March 2013, GemVax, AS amended certain patent claims in these two patents to narrow their scope, and we withdrew our oppositions to GemVax's patents. On appeal, the Opposition Division, or OD, has approved the amended claims for one patent, and we are waiting for a decision on the other patent.

As more groups become engaged in scientific research and product development in the areas of telomerase biology, the risk of our patents or patents that we have in-licensed being challenged through patent interferences, derivation proceedings, oppositions, re-examinations, litigation 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 imetelstat 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.

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 imetelstat.

Our commercial success depends upon our ability to develop, manufacture, market and sell imetelstat without infringing or otherwise violating the intellectual property and other proprietary rights of third parties. There is considerable intellectual property litigation in the biotechnology and pharmaceutical industries, and many pharmaceutical companies, including our competitors, have substantial patent portfolios. For example, we are aware that certain potential competitors have or may be prosecuting broad patent estates, and while we believe these patents will expire before imetelstat is

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commercialized and/or that these patents are invalid and/or would not be infringed by the manufacture, use or sale of imetelstat, it is possible that the owner of these patents will assert claims against us in the future. In addition, we may not be aware of all intellectual property rights potentially relating to imetelstat and its uses. Thus, we do not know with certainty that imetelstat, or our intended commercialization thereof, does not and will not infringe or otherwise violate any third party's intellectual property. Any infringement claims against us would likely be expensive to resolve, and if we are unable to resolve these successfully, could subject us to an injunction which would prevent us from commercializing imetelstat, and could also require us to pay substantial damages. In addition to infringement claims, in the future we may also be subject to other claims relating to intellectual property, such as claims that we have misappropriated the trade secrets of third parties.

In addition, we may become aware of discoveries and technologies controlled by third parties that are advantageous to developing imetelstat. In the event our technologies infringe the rights of others or we require the use of discoveries and technologies controlled by third parties, we may be prevented from pursuing research, development or commercialization of imetelstat, or may be required to obtain licenses to those patents or other proprietary rights or develop or obtain alternative technologies. We initiate negotiations for licenses to other technologies as the need or opportunity arises. We may not be able to obtain a license to a technology required for the research, development or commercialization of imetelstat on commercially favorable terms, or at all, or our licenses may be terminated on certain grounds, including as a result of our failure to comply with our obligations under such licenses. If we do not obtain a necessary license or if such a license is terminated, we may need to redesign our technologies or obtain rights to alternate technologies, which may not be possible, and even if possible, could cause delays in our development efforts for imetelstat. In cases where we are unable to license necessary technologies, we could be subject to litigation and prevented from developing imetelstat. Our failure to obtain alternative technologies or a license to any technology that we may require to research, develop or commercialize imetelstat would significantly and negatively affect our business. We expect that as imetelstat continues to progress in development, we will see more efforts by others to obtain patents that are positioned to cover imetelstat. Our success therefore depends significantly on our ability to operate without infringing patents and the proprietary rights of others.

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 provide assurance 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 and test imetelstat, and our ability to develop and commercialize imetelstat may be impaired or delayed if collaborations are unsuccessful.

Our strategy for the development, clinical testing and commercialization of imetelstat may require us to enter into collaborations with clinical research organizations, investigators, vendors, clinical trial sites, corporate partners, licensors, licensees and others. We are dependent upon the ability of these parties to perform their responsibilities reliably. By way of example, we have contracted with two clinical research organizations that are primarily responsible for the execution of clinical site related activities for our ongoing imetelstat Phase 2 clinical trials, including clinical trial site monitoring

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activities. In addition, for our imetelstat program, we have contracted with a single vendor to develop and maintain the clinical database and a single vendor to maintain our safety database. For any future clinical trials of imetelstat that may be conducted by us, we may rely on new or different vendors, or other third parties, with which we may have little or no prior experience.

Accordingly, if the performance of these services is not of the highest quality, or does not achieve necessary regulatory compliance standards, or if such organization or vendor stops or delays its performance for any reason, it would impair and delay our ability to report data from our clinical trials and make the necessary representations to regulatory authorities, if at all. In addition, licensors or licensees could terminate their agreements with us, and we may not receive any development or milestone payments. If we do not achieve milestones or perform diligence obligations set forth in agreements that we have entered into with others, or if our licensors or licensees breach or terminate their agreements with us, our business may be materially harmed.

Our imetelstat development strategy is also highly dependent on the results of existing and potential future investigator-sponsored trials of imetelstat in hematologic myeloid malignancies, including the Myelofibrosis IST. We have been informed by Mayo Clinic that the Myelofibrosis IST has been closed to new patient enrollment effective January 22, 2014. Because investigator-sponsored trials are not Geron-sponsored trials, the clinical testing of imetelstat in investigator-sponsored trials requires us to rely on the applicable investigator's design and conduct of the trial, which we do not control, and it is possible that the FDA or other regulatory agencies will not view these investigator-sponsored trials, including the Myelofibrosis IST, as providing adequate support for future clinical trials, whether controlled by us or third parties, for any one or more reasons, including elements of the design or execution of these investigator-sponsored trials or safety concerns or other trial results. Accordingly, failure by physician investigators to properly design or conduct existing or potential future investigator-sponsored trials of imetelstat could produce results that might delay or prevent us from advancing imetelstat into further clinical development. In addition, we do not have control over the timing and reporting of the data from the Myelofibrosis IST or any other investigator-sponsored trials, nor do we own the data from the trials. Our arrangements with investigators may provide us certain information rights with respect to the trials, including access to and the ability to use and reference the data, including for our own regulatory filings, resulting from the trials. If these obligations are breached by the investigators, or if the data prove to be inadequate compared to the first-hand knowledge we might have gained had the trials been Geron-sponsored clinical trials, or if the data cannot be audited or verified by us, then our ability to design and conduct any Geron-sponsored clinical trials may be adversely affected. Additionally, the FDA or other regulatory agencies may disagree with our interpretation of preclinical, manufacturing, or clinical data generated by any investigator-sponsored trials. If so, the FDA or other regulatory agencies may require us to obtain and submit additional preclinical, manufacturing, or clinical data before we may initiate potential future Geron-sponsored clinical trials of imetelstat and/or may not accept such additional data as adequate to initiate any such Geron-sponsored clinical trials. Further, if we are unable to verify, confirm or replicate the results from the Myelofibrosis IST or if negative results are obtained, we would likely be further delayed or prevented from advancing imetelstat into further clinical development and might decide to discontinue our development of imetelstat, which would severely harm our business and prospects, and could potentially cause us to cease operations.

Our ability to manufacture imetelstat is uncertain because we must rely on third parties for manufacturing.

We rely on other companies for certain process development, supply of starting materials, manufacturing of drug substance and drug product or other technical and scientific work with respect to imetelstat, but we do not have direct control over their personnel or operations. We rely on these manufacturers to produce and deliver sufficient quantities of imetelstat to support our clinical trials, including investigator-sponsored clinical trials, on a timely basis and to comply with applicable

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regulatory requirements. If these companies do not perform the work which they are contracted to perform, fail to comply with applicable cGMP regulations do not complete the work within the expected timelines, or if they fail to produce materials which are suitable for use in clinical trials or choose to exit the business, our ability to develop or manufacture imetelstat could be significantly harmed. For example, we may need to change one or more of our suppliers due to these or other reasons and the change could lead to delays in drug supply. Manufacturing delays could adversely impact the initiation or completion of ongoing or future clinical trials, including investigator-sponsored trials.

In addition, our manufacturers may need to make substantial investments to enable sufficient capacity increases and cost reductions, and to implement those regulatory and compliance standards necessary for successful Phase 3 clinical trials and commercial production. Our manufacturers may not be able to achieve such capacity increases, cost reductions, or regulatory and compliance standards, and even if they do, such achievements may not be at a commercially reasonable cost to us. We have not established long-term manufacturing commitments, and changing manufacturers may be prolonged and difficult due to inherent technical complexities, and because the number of potential manufacturers is limited. It may be difficult or impossible for us to find a replacement manufacturer on acceptable terms, or at all.

There are other risks and uncertainties that we face with respect to manufacturing. For example, one of our suppliers of active pharmaceutical ingredient for imetelstat is currently restricted by the FDA from importing materials into the United States. As another example, certain commonly used reagents and solvents may experience market shortages and, if these shortages occur, they may adversely impact our ability to manufacture imetelstat.

Our reliance on investigators, consultants, research institutions, and scientific contractors whose activities are not wholly within our control may lead to delays in development of imetelstat.

We rely extensively upon and have relationships with investigators, scientific consultants, collaborators, and contractors at academic, commercial and other institutions. Some of the investigators, scientific consultants, collaborators and contractors upon whom we rely conduct research and development activities at our request or initiate investigator-sponsored clinical trials to test imetelstat, and others assist us in formulating and/or executing our research and development and clinical and regulatory strategy or other matters related to imetelstat. These investigators, scientific consultants, collaborators and contractors 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 investigators, scientific consultants, collaborators and contractors 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. 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 imetelstat could be significantly harmed.

RISKS RELATED TO COMPETITIVE FACTORS

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

Our future success depends to a significant extent on the skills, experience and efforts of our executive officers and key members of our clinical and scientific staff. We face intense competition for qualified individuals from numerous pharmaceutical, biopharmaceutical and biotechnology companies, as well as academic and other research institutions. The recent restructurings we implemented could have an adverse impact on our ability to retain and recruit qualified personnel or we may incur unanticipated inefficiencies caused by our reduced personnel resources. 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.

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Some of our competitors may develop technologies that are superior to or more cost-effective than ours, which may significantly impact the commercial viability of imetelstat and 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 imetelstat program, including the study of telomeres, telomerase and our proprietary oligonucleotide chemistry, and the research and development of therapies for the treatment of hematologic myeloid malignancies. In addition, other products and therapies that could directly compete with imetelstat currently exist or are being developed by pharmaceutical and biopharmaceutical companies and by academic institutions, government agencies and other public and private research organizations.

Many companies are developing alternative therapies to treat hematologic myeloid malignancies and, in this regard, are competitors of ours. For example, if approved for commercial sale for the treatment of MF, imetelstat would compete against Incyte Corporation's ruxolitinib, or Jakafi®, which is orally administered. In clinical trials, Jakafi® reduced spleen size, abdominal discomfort, early satiety, bone pain, night sweats and itching in MF patients. Recently, there have also been reports of overall survival benefit as well as improvement in bone marrow fibrosis from Jakafi® treatment. Other treatment modalities for MF include hydroxyurea for the management of splenomegaly, leukocytosis, thrombocytosis and constitutional symptoms; splenectomy and splenic irradiation for the management of splenomegaly and co-existing cytopenias, or low blood cells; chemotherapy and pegylated interferon. Drugs for the treatment of MF-associated anemia include erythropoiesis-stimulating agents, androgens, danazol, corticosteroids, thalidomide and lenalidomide. There are other investigational treatments further along in development than imetelstat, such as momelitinib by Gilead Sciences, Inc. and pacritinib by Cell Therapeutics, Inc., which are currently in Phase 3 clinical trials, and other inhibitors of the JAK-STAT pathway, as well as several investigational treatments in early phase testing such as histone deacetylase inhibitors, inhibitors of heat shock protein 90, hypomethylating agents, PI3 Kinase and mTOR inhibitors, hedgehog inhibitors, anti-LOX2 inhibitors, recombinant pentraxin 2 protein, KIP-1 activators, TGF-beta inhibitors, FLT inhibitors, and other tyrosine kinase inhibitors.

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 (e.g. Sanofi S.A., Bristol-Myers Squibb Company, Novartis AG, Incyte Corporation and Gilead Sciences, Inc.) have significantly greater financial, technical and human resources than we do, and greater expertise than we do in:

- research and development;
- manufacturing;
- preclinical and clinical testing;
- obtaining regulatory approvals; and
- marketing, sales and distribution.

Smaller companies may also prove to be significant competitors, particularly through collaborative arrangements with large and established companies. We anticipate increased competition in the future as new companies explore treatments for hematologic myeloid malignancies, which may significantly impact the commercial viability of imetelstat. 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 imetelstat program.

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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 us. Our competitors have developed, or are in the process of developing, technologies that are, or in the future may be, competitive to imetelstat. Some of these products may have an entirely different approach or means of accomplishing therapeutic effects similar to those demonstrated by imetelstat. Our competitors may develop products that are safer, more effective or less costly than imetelstat, or more convenient to administer to patients and, therefore, present a serious competitive threat to imetelstat. In addition, our competitors may price their products below what we may determine to be an acceptable price for imetelstat, may receive better third-party payor coverage and/or reimbursement, or may be more cost effective than imetelstat. Such competitive products or activities by our competitors may render imetelstat obsolete, which would negatively impact our business and ability to sustain operations.

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

If approved for marketing, imetelstat may not achieve market acceptance since hospitals, physicians, patients or the medical community in general may decide not to accept and utilize imetelstat. If approved for commercial sale, imetelstat will compete with a number of conventional and widely accepted drugs and therapies manufactured and marketed by major pharmaceutical companies. The degree of market acceptance of imetelstat will depend on a number of factors, including:

- our establishment and demonstration to the medical community of the clinical efficacy and safety of imetelstat;
- our ability to demonstrate that imetelstat is superior to alternatives currently on the market;
- our ability to establish in the medical community the potential advantage of imetelstat over alternative treatment methods;
- the label and promotional claims allowed by the FDA or other regulatory agencies for imetelstat, if any;
- sales, marketing and distribution support for imetelstat; and
- reimbursement policies of government and third-party payors.

The established use of conventional products competitive with imetelstat may limit or preclude the potential for imetelstat to receive market acceptance upon any commercialization. We may be unable to demonstrate any pharmacoeconomic advantage for imetelstat compared to established or standard-of-care therapies, or newly developed therapies, for hematologic myeloid malignancies. Third-party payors may decide that any potential improvement that imetelstat may provide to clinical outcomes in hematologic myeloid malignancies is not adequate to justify the costs of treatment with imetelstat. If third-party payors do not view imetelstat as offering a better balance between clinical benefit and treatment cost compared to standard-of-care therapies or other treatment modalities

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currently in development, imetelstat may not be commercially viable. If the health care community does not accept imetelstat 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 imetelstat, the use of imetelstat could be severely limited.

Our ability to successfully commercialize imetelstat will depend significantly on our ability to obtain acceptable prices and the availability of reimbursement to the patient from third-party payors. In March 2010, the Patient Protection and Affordability Care Act, as amended by the Health Care and Education Affordability Reconciliation Act (collectively, the PPACA) became law. In June 2012, the United States Supreme Court upheld the constitutionality of key provisions of the PPACA. The PPACA contains numerous initiatives that impact the pharmaceutical industry. These include, among other things:

- increasing existing price rebates in federally funded health care programs;
- expanding rebates, or other pharmaceutical company discounts, into new programs;
- imposing a new non-deductible excise tax on sales of certain prescription pharmaceutical products by prescription drug manufacturers and importers;
- reducing incentives for employer-sponsored health care;
- creating an independent commission to propose changes to Medicare with a particular focus on the cost of biopharmaceuticals in Medicare Part D;
- providing a government-run public option with biopharmaceutical price-setting capabilities;
- allowing the Secretary of Health and Human Services to negotiate drug prices within Medicare Part D directly with pharmaceutical manufacturers;
- reducing the number of years of data exclusivity for innovative biological products potentially leading to earlier biosimilar competition; and
- increasing oversight by the FDA of pharmaceutical research and development processes and commercialization tactics.

While the PPACA may increase the number of patients who have insurance coverage for imetelstat, its cost containment measures could also adversely affect reimbursement for imetelstat. Cost control initiatives could decrease the price that we receive for imetelstat in the future. If imetelstat is not considered cost-effective or if we fail to generate adequate third-party reimbursement for the users of imetelstat, then we may be unable to maintain price levels sufficient to realize an appropriate return on our investment for imetelstat, which could have an adverse impact on our business.

RISKS RELATED TO ENVIRONMENTAL AND PRODUCT LIABILITY

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

If we are unable to comply with federal, state and county environmental and safety laws and regulations, including those governing laboratory procedures, exposure to blood-borne pathogens and the handling of biohazardous materials, chemicals and various radioactive

compounds previously used by us in our discontinued research facility, we could be subject to considerable additional cost or liability that would have a material adverse effect on our financial condition. We, our contractors or agents may be required to incur significant costs to comply with current or future environmental laws

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and regulations and may be adversely affected by the cost of compliance with these laws and regulations.

Although we believe that the safety procedures previously used by us for using, handling, storing and disposing of hazardous materials in our discontinued research facility complied with the standards prescribed by state and federal regulations, we may incur significant unanticipated costs associated with the closure and exit of our research facility. 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 in connection with the closure of our research facility could subject us to significant liabilities, including joint and several liability under certain statutes. Any such liability or costs 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 the manufacturing facilities and operations of any third party contracted by us to perform services with respect to our imetelstat program. Additional federal, state and local laws and regulations affecting us may be adopted in the future. We, our contractors and agents 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 imetelstat, or GRN1005 in our discontinued trials, is alleged to have injured patients. 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.

Our headquarters are located near known earthquake fault zones, and the occurrence of an earthquake or other catastrophic disaster could cause damage to our offices and equipment, which could cause delays or even require us to cease or curtail operations.

Our headquarters are located in the San Francisco Bay Area near known earthquake fault zones and are vulnerable to significant damage from earthquakes. We do not carry earthquake insurance. We are also vulnerable to damage from other types of disasters, including fires, floods, power loss, communications failures, terrorism and similar events. If any disaster were to occur, our ability to operate our business at our office would be seriously, or potentially completely, impaired. The insurance we maintain may not be adequate to cover our losses from such disasters or other business interruptions.

RISKS RELATED TO THIS OFFERING, OUR COMMON STOCK AND FINANCIAL REPORTING

Historically, our stock price has been extremely volatile.

Historically, our stock price has been extremely volatile. Between January 1, 2004 and December 31, 2013, our stock has traded as high as $12.44 per share and as low as $0.91 per share. Between January 1, 2011 and December 31, 2013, the price has ranged between a high of $7.79 per share and a low of $0.91 per share. The significant market price fluctuations of our common stock have been due to and may in the future be influenced by a variety of factors, including:

- announcements regarding our research and development of imetelstat, including clinical trial results or delays in any future clinical trials of imetelstat, or announcements regarding the

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results of or delays in investigator-sponsored trials of imetelstat, and investor perceptions thereof;

announcements regarding the safety of imetelstat;

announcements regarding our plans to discontinue certain programs or clinical trials, such as our prior announcements regarding the discontinuation of our stem cell programs and certain clinical trials;

our ability to complete the Series A Distribution and perception by our stockholders about the adequacy of the consideration received for the divestiture of our stem cell assets to Asterias;

the demand in the market for our common stock;

the experimental nature of imetelstat;

fluctuations in our operating results;

our declining cash balance as a result of operating losses;

general market conditions or 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;

large stockholders exiting their position in our common stock;

the issuance of common stock to partners, vendors or to investors to raise additional capital; and

the occurrence of any other risks and uncertainties discussed in this prospectus supplement under the heading "Risk Factors."

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. In addition to other risk factors described in this section, overall 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.

If we fail to meet continued listing standards of NASDAQ, our common stock may be delisted, which could have a material adverse effect on the liquidity of our common stock.

Our common stock is currently traded on the Nasdaq Global Select Market. The NASDAQ Stock Market LLC has requirements that a company must meet in order to remain listed on NASDAQ. In particular, NASDAQ rules require us to maintain a minimum bid price of $1.00 per share of our common stock. If the closing bid price of our common stock were to fall below $1.00 per share for 30 consecutive trading days or we do not meet other listing requirements, we would fail to be in compliance with NASDAQ's listing standards. There can be no assurance that we will continue to meet the minimum bid price requirement, or any other requirement in the future. If we fail to meet the minimum bid price requirement, The NASDAQ Stock Market LLC may initiate the delisting process

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with a notification letter. If we were to receive such a notification, we would be afforded a grace period of 180 calendar days to regain compliance with the minimum bid price requirement. In order to regain compliance, shares of our common stock would need to maintain a minimum closing bid price of at least $1.00 per share for a minimum of 10 consecutive trading days. If our common stock were to be delisted, the liquidity of our common stock would be adversely affected and the market price of our common stock could decrease.

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

Securities-related class action litigation has often been brought against companies, including many biotechnology companies, which experience volatility in the market price of their securities. This risk is especially relevant for us because biotechnology and biopharmaceutical companies often experience significant stock price volatility in connection with their product development programs. If the results of our business activities are not successful, including without limitation, if:

- the final or any preliminary results from the Myelofibrosis IST, or any subsequent clinical trial of imetelstat, are not deemed to be successful;
- we or any investigators ascertain that the use of imetelstat results in significant systemic or organ toxicities or other safety issues resulting in an unacceptable benefit-risk profile;
- we or any investigators discontinue the further development of imetelstat; or
- our stockholders believe the consideration received from the divestiture of our stem cell assets to be inadequate;

our stock price would likely decline, and may result in litigation. A decision adverse to our interests in any such lawsuit could result in the payment of substantial damages by us, and could have a material adverse effect on our cash flow, results of operations and financial position.

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. In addition, the conduct of clinical trials, including our ongoing and any subsequent clinical trials of imetelstat and any investigator-sponsored trials, are inherently risky and may expose us to liability for matters such as patient injury or death, or for any failure to meet regulatory and compliance requirements. Monitoring, initiating and defending against legal actions are time-consuming for our management, are likely to be expensive and may detract from our ability to fully focus our internal resources on our business activities. 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. In addition, the inherent uncertainty of such litigation could lead to increased volatility in our stock price and a decrease in the value of your investment in our common stock.

The sale of a substantial number of shares may adversely affect the market price of 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 of our common stock. As of September 30, 2013, we had 300,000,000 shares of common stock authorized for issuance and 128,949,459 shares of common stock outstanding. In addition, as of September 30, 2013, we had reserved approximately 35,394,635 shares of common stock for future issuance pursuant to our option and equity incentive plans and outstanding warrants. Issuing additional shares could negatively affect the market price of our common stock and the return on your investment.

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Future sales of our common stock, including pursuant to our Sales Agreement with MLV, or the issuance of common stock to satisfy our current or future cash payment obligations or to acquire technology, property, or other businesses, could cause immediate dilution and adversely affect the market price of our common stock. In addition, under the universal shelf registration statement filed by us in July 2012 and declared effective by the SEC in October 2012, we may sell any combination of common stock, preferred stock, debt securities and warrants in one or more offerings, up to a cumulative value of $200 million (including shares sold in this offering). The sale or issuance of our securities, as well as the existence of outstanding options and shares of common stock reserved for issuance under our option and equity incentive plans and outstanding warrants also may adversely affect the terms upon which we are able to obtain additional capital through the sale of equity securities.

Our executive officers and directors have agreed that, subject to certain exceptions, during the period ending 60 days after the date of this prospectus supplement, they will not offer, sell, contract to sell, pledge or otherwise dispose of, directly or indirectly, shares of our common stock or any securities convertible into or exchangeable for our common stock, without the prior written consent of Merrill Lynch, Pierce, Fenner & Smith Incorporated, who may release any of the securities subject to these lock-up agreements at any time without notice.

Management will have broad discretion as to the use of the proceeds from this offering, and we may not use the proceeds effectively.

Our management will have broad discretion in the application of the net proceeds from this offering and could spend the proceeds in ways that do not effectively further our development of our sole product candidate, imetelstat, improve our results of operations or enhance the value of our common stock. Our failure to apply these funds effectively could have a material adverse effect on our business, delay the development of our sole product candidate, imetelstat, and cause the price of our common stock to decline.

If you purchase shares of common stock in this offering, you will experience immediate dilution in your investment. You will experience further dilution if we issue additional equity securities in future fundraising transactions.

Purchasers of common stock in this offering will pay a price per share in this offering that exceeds the net tangible book value per share of our common stock. After giving effect to our sale of 22,500,000 shares of our common stock in this offering at the public offering price of $4.00 per share and after deducting the underwriting discount and estimated offering expenses payable by us, you will experience immediate dilution of $3.04 per share, representing the difference between our as adjusted net tangible book value per share as of September 30, 2013 after giving effect to this offering and the public offering price. See the section entitled "Dilution" below for a more detailed illustration of the dilution you would incur if you purchase common stock in this offering.

If we issue additional common stock, or securities convertible into or exchangeable or exercisable for common stock, including pursuant to the Sales Agreement, our stockholders, including investors who purchase shares of common stock in this offering, will experience additional dilution, and any such issuances may result in downward pressure on the price of our common stock. We also cannot assure you that we will be able to sell shares or other securities in any other offering at a price per share that is equal to or greater than the price per share paid by investors in this offering, and investors purchasing shares or other securities in the future could have rights superior to existing stockholders.

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Our undesignated preferred stock may inhibit potential acquisition bids; this may adversely affect the market price of 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. 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 of 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 of our common stock could be adversely affected.

Provisions in our charter, bylaws and 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.

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 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.

Other than in connection with the anticipated Series A Distribution, 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 our board of directors.

Our stockholders may incur U.S. federal income taxes as a result of the divestiture of our stem cell assets, and non-U.S. stockholders may be subject to withholding taxes with respect to the divestiture.

If the anticipated Series A Distribution occurs, the Series A Distribution will not qualify as a tax-free spin-off under Section 355 of the Code. Accordingly, the fair market value of the Asterias Series A common stock at the time of the Series A Distribution, if it occurs, and the amount of any cash distributed could be treated as dividend income for U.S. federal income tax purposes for Geron stockholders. Similarly, we can provide no assurance that the distribution of BioTime Warrants by Asterias will not result in dividend income. As described above under the section entitled "Recent Developments Stem Cell Divestiture; Asterias Series A Distribution Tax Consequences of

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Anticipated Distribution," any gain recognized by a Geron stockholder from the Series A Distribution or the distribution of the BioTime Warrants will be short-term capital gain if the Geron stockholder has held our stock or, as applicable, the Asterias Series A common stock for one year or less at the time of relevant distribution.

If any dividend income or gain were recognized by Geron stockholders in respect of our distribution of the Asterias Series A common stock and cash, if any, or the distribution by Asterias of the BioTime Warrants, as described above under the section entitled "Recent Developments Stem Cell Divestiture; Asterias Series A Distribution Tax Consequences of Anticipated Distribution," then Geron stockholders could incur U.S. federal income taxes with respect to the receipt of such distribution (and Non-U.S. Holders (as defined below under the section entitled "Material U.S. Federal Income and Estate Tax Considerations for Non-U.S. Holders of Our Common Stock") may be subject to U.S. federal withholding). The lack of an existing market for the Asterias Series A common stock could limit or preclude the ability of our stockholders to sell a sufficient quantity of Asterias Series A common stock to satisfy such potential tax liabilities. As a result, if the anticipated Series A Distribution occurs, Geron stockholders may incur tax liabilities, but be unable to realize value from any Asterias Series A common stock distributed by Geron and/or the BioTime Warrants to be distributed by Asterias. Because no further action is required on the part of Geron stockholders to receive the Asterias Series A common stock and the related BioTime Warrants in the distributions, if the anticipated Series A Distribution occurs and Geron stockholders do not want to receive the Asterias Series A common stock and the related BioTime Warrants in the anticipated distributions (or cash in lieu thereof), the only recourse for Geron stockholders will be to divest their Geron common stock prior to the record date to be set by our board of directors for the Series A Distribution. Sales of Geron common stock by stockholders who do not want to receive Asterias Series A common stock and the related BioTime Warrants in the anticipated distributions could result in downward pressure on our stock price.

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, or Section 404, requires that we establish and maintain an adequate internal control structure and procedures for financial reporting. Our annual reports 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 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.

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SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus supplement, the accompanying prospectus, the documents we have filed with the SEC that are incorporated herein by reference and any free writing prospectus prepared by or on behalf of us or to which we have referred you contain forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended, or the Securities Act, and Section 21E of the Securities Exchange Act of 1934, as amended, or the Exchange Act. We have based these forward-looking statements on our current expectations and projections about future events. Our actual results could differ materially from those discussed in, or implied by, these forward-looking statements. These forward-looking statements are generally identified by words such as "believe," "could," "anticipate," "estimate," "expect," "intend," "plan," "will," "may" and other similar expressions. In addition, any statements that refer to expectations, projections or other characterizations of future events or circumstances are forward-looking statements. Forward-looking statements include, but are not necessarily limited to, those relating to:

- the magnitude and scope of our imetelstat research and development program, including the number of indications we intend to pursue;
- the progress made, if any, in our imetelstat research and development program, including our planned Phase 2 clinical trial in MF, and potential future clinical trials and existing or future investigator-sponsored trials;
- the design of our planned Phase 2 clinical trial of imetelstat in MF, including the selection of dosing regimens;
- changes in our clinical development plans for imetelstat;
- the size and timing of expenditures and whether there are unanticipated expenditures;
- our estimates regarding the sufficiency of our cash resources and our use of the net proceeds from this offering;
- our requirements for additional capital;
- the time and costs involved in obtaining regulatory clearances and approvals;
- our ability to consistently and reproducibly manufacture imetelstat;
- our ability to meaningfully reduce manufacturing costs of imetelstat;
- our ability to establish and maintain potential new collaborative arrangements for the development and commercialization of imetelstat;
- the costs involved in preparing, filing, prosecuting, maintaining, defending and enforcing patent claims;
- the implementation of our corporate strategy;

our ability to successfully complete the Series A Distribution; and

our future financial performance.

Any or all of our forward-looking statements in this prospectus supplement and the accompanying prospectus, the documents we have filed with the SEC that are incorporated by reference in this prospectus supplement and the accompanying prospectus, and any free writing prospectus prepared by or on behalf of us or to which we have referred you may turn out to be wrong. They can be affected by inaccurate assumptions we might make or by known or unknown risks and uncertainties. Many factors mentioned in our discussion in this prospectus supplement will be important

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in determining future results. Consequently, no forward-looking statement can be guaranteed. Actual future results may vary materially.

We undertake no obligation to publicly update any forward-looking statements, whether as a result of new information, future events or otherwise. We advise you to consult the cautionary discussion of risks and uncertainties under the heading "Risk Factors" contained elsewhere in this prospectus supplement in its entirety. These are factors that we think could cause our actual results to differ materially from expected results. Other factors besides those listed could also adversely affect us. Given these risks, uncertainties and other important factors, you should not place undue reliance on these forward-looking statements. Also, these forward-looking statements represent our estimates and assumptions only as of the date such forward-looking statements are made. This discussion is provided as permitted by the Private Securities Litigation Reform Act of 1995.

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USE OF PROCEEDS

We estimate that the net proceeds we will receive from the sale of the 22,500,000 shares of common stock that we are offering will be approximately $84.0 million (or approximately $96.7 million if the underwriters exercise in full their option to purchase 3,375,000 additional shares of common stock), after deducting the underwriting discount and estimated offering expenses payable by us.

We will retain broad discretion over the use of the net proceeds from the sale of our common stock offered hereby. We intend to use the net proceeds from the sale of our common stock in this offering:

- to fund research and development, including our planned Phase 2 clinical trial of imetelstat in MF; and
- for working capital and other general corporate purposes.

The amounts and timing of the expenditures may vary significantly depending on numerous factors, such as the progress of our research and development efforts, technological advances and the competitive environment for our products. We may also use a portion of the net proceeds to acquire or invest in complementary businesses, products and technologies. Although we currently have no material agreements or commitments with respect to acquisitions, we evaluate acquisition opportunities and engage in related discussions from time to time.

We intend to invest the net proceeds in short-term, interest-bearing, investment-grade securities until we are ready to use them.

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DILUTION

Our net tangible book value as of September 30, 2013 was approximately $61.9 million, or $0.48 per share. Net tangible book value is total assets minus the sum of liabilities and intangible assets. Net tangible book value per share is net tangible book value divided by the total number of shares of common stock outstanding as of September 30, 2013.

Dilution in net tangible book value per share represents the difference between the amount per share paid by purchasers of shares of common stock in this public offering and the net tangible book value per share of our common stock immediately after completion of this public offering. After giving effect to the sale of 22,500,000 shares of our common stock in this offering at the public offering price of $4.00 per share, and after deducting the underwriting discount and estimated offering expenses payable by us, our as adjusted net tangible book value as of September 30, 2013 would have been approximately $145.9 million, or $0.96 per share. This represents an immediate increase in net tangible book value of $0.48 per share to existing stockholders and immediate dilution in net tangible book value of $3.04 per share to investors purchasing our common stock in this offering at the public offering price. The following table illustrates this dilution on a per share basis:

Public offering price per share		$ 4.00
Net tangible book value per share as of September 30, 2013	$ 0.48	
Increase in net tangible book value per share attributable to this offering	0.48	
As adjusted net tangible book value per share as of September 30, 2013 after giving effect to this offering		0.96
Dilution per share to investors purchasing our common stock in this offering		$ 3.04

If the underwriters exercise in full their option to purchase 3,375,000 additional shares of common stock at the public offering price of $4.00 per share, the as adjusted net tangible book value after this offering would be $1.02 per share, representing an increase in net tangible book value of $0.54 per share to existing stockholders and immediate dilution in net tangible book value of $2.98 per share to investors purchasing our common stock in this offering at the public offering price.

The above discussion and table are based on 128,949,459 shares of common stock issued and outstanding as of September 30, 2013 and exclude:

- 18,984,837 shares of our common stock issuable upon the exercise of options outstanding as of September 30, 2013, having a weighted average exercise price of $3.44 per share;
- 1,619,275 shares of our common stock issuable upon the exercise of warrants outstanding as of September 30, 2013 at a weighted average price of $3.91 per share;
- an aggregate of 14,472,070 shares of our common stock reserved for future issuance under our 2011 Incentive Award Plan and our 2006 Directors' Stock Option Plan as of September 30, 2013; and
- 318,453 shares of our common stock reserved for future issuance under our 1996 Employee Stock Purchase Plan as of September 30, 2013.

The number of shares of our common stock outstanding as of September 30, 2013 includes 411,341 unvested shares of our common stock issued as restricted stock awards and outstanding as of September 30, 2013. However, the above discussion and table do not include the up to $50.0 million of common stock that we may sell pursuant to the Sales Agreement with MLV.

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To the extent outstanding options or warrants are exercised, you will experience further dilution. In addition, we may choose to raise additional capital due to market conditions or strategic considerations, including pursuant to the Sales Agreement, even if we believe we have sufficient funds for our current or future operating plans. To the extent that additional capital is raised through the sale of equity or convertible debt securities, the issuance of these securities could result in further dilution to our stockholders.

Except as otherwise indicated, all information in this prospectus supplement assumes no exercise by the underwriters of their option to purchase additional shares.

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UNDERWRITING

Merrill Lynch, Pierce, Fenner & Smith Incorporated is acting as representative of each of the underwriters named below. Subject to the terms and conditions set forth in an underwriting agreement among us and the underwriters, we have agreed to sell to the underwriters, and each of the underwriters has agreed, severally and not jointly, to purchase from us, the number of shares of common stock set forth opposite its name below.

Underwriter	Number of Shares
Merrill Lynch, Pierce, Fenner & Smith Incorporated	10,125,000
Stifel, Nicolaus & Company, Incorporated	4,500,000
Lazard Capital Markets LLC	3,375,000
Piper Jaffray & Co.	3,375,000
MLV & Co. LLC	1,125,000
Total	22,500,000

Subject to the terms and conditions set forth in the underwriting agreement, the underwriters have agreed, severally and not jointly, to purchase all of the shares sold under the underwriting agreement if any of these shares are purchased. If an underwriter defaults, the underwriting agreement provides that the purchase commitments of the nondefaulting underwriters may be increased or the underwriting agreement may be terminated.

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

The underwriters are offering the shares, subject to prior sale, when, as and if issued to and accepted by them, subject to approval of legal matters by their counsel, including the validity of the shares, and other conditions contained in the underwriting agreement, such as the receipt by the underwriters of officer's certificates and legal opinions. The underwriters reserve the right to withdraw, cancel or modify offers to the public and to reject orders in whole or in part.

Commissions and Discounts

The representative has advised us that the underwriters propose initially to offer the shares to the public at the public offering price set forth on the cover page of this prospectus supplement and to dealers at that price less a concession not in excess of $0.14 per share. After the initial offering, the public offering price, concession or any other term of the offering may be changed.

The following table shows the public offering price, underwriting discount and proceeds before expenses to us. The information assumes either no exercise or full exercise by the underwriters of their option to purchase additional shares.

	Per Share	Without Option	With Option
Public offering price	$ 4.00	$ 90,000,000	$ 103,500,000
Underwriting discount	$ 0.24	$ 5,400,000	$ 6,210,000
Proceeds, before expenses, to us	$ 3.76	$ 84,600,000	$ 97,290,000

The expenses of the offering, not including the underwriting discount, are estimated at $575,000 and are payable by us. The underwriters have agreed to reimburse us for certain expenses incurred in connection with this offering.

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Option to Purchase Additional Shares

We have granted an option to the underwriters, exercisable for 30 days after the date of this prospectus supplement, to purchase up to 3,375,000 additional shares at the public offering price, less the underwriting discount. If the underwriters exercise this option, each will be obligated, subject to conditions contained in the underwriting agreement, to purchase a number of additional shares proportionate to that underwriter's initial amount reflected in the above table.

No Sales of Similar Securities

We, our executive officers and directors have agreed not to sell or transfer any common stock or securities convertible into, exchangeable for, exercisable for, or repayable with common stock, for 60 days after the date of this prospectus supplement without first obtaining the written consent of Merrill Lynch, Pierce, Fenner & Smith Incorporated. Specifically, we and these other persons have agreed, with certain limited exceptions, not to directly or indirectly

offer, pledge, sell or contract to sell any common stock,

sell any option or contract to purchase any common stock,

purchase any option or contract to sell any common stock,

grant any option, right or warrant for the sale of any common stock,

lend or otherwise dispose of or transfer any common stock,

request or demand that we file a registration statement related to the common stock, or

enter into any swap or other agreement that transfers, in whole or in part, the economic consequence of ownership of any common stock whether any such swap or transaction is to be settled by delivery of shares or other securities, in cash or otherwise.

Among other exceptions and subject to certain conditions, the foregoing restrictions will not apply to (i) the sale of the shares of common stock to the underwriters as contemplated by the underwriting agreement, (ii) our ability to issue up to 5% of our outstanding common stock, as measured immediately following this offering, to one or more counterparties in connection with certain strategic transactions, including partnering or collaboration arrangements, that we may enter into in the future, (iii) certain transfers by gift, or by will or intestate succession by our executive officers and directors, (iv) distributions by our executive officers and directors to their partners, members or stockholders, (v) our ability to issue shares of common stock pursuant to our 401(k) plan, or any non-employee director stock plan, or any shares of common stock or equity awards pursuant to existing equity compensation plan or arrangement, (vi) the establishment of a trading plan by our executive officers and directors pursuant to Rule 10b5-1 under the Exchange Act for the sale of our securities, provided that such plan does not provide for any sales during the lock-up period, and (vii) transfers of our common stock, or any securities convertible into, exercisable or exchangeable for our common stock by our executive officers or directors, pursuant to a sale or an offer to purchase 100% of our outstanding common stock, whether pursuant to a merger, tender offer or otherwise, to a third party or group of third parties. Finally, the lock-up agreement for us does not prohibit us from keeping in effect the Sales Agreement with MLV, provided that no sales of our common stock under the Sales Agreement may be made during the 60-day lock-up period.

Further, under the terms of the lock-up agreements, our executive officers and directors may be eligible to sell shares of our common stock in the public market in order to satisfy the income tax obligations of such executive officers and directors resulting from the vesting of their restricted stock awards.

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This lock-up provision applies to common stock and to securities convertible into or exchangeable or exercisable for or repayable with common stock. It also applies to common stock owned now or acquired later by the person executing the agreement or for which the person executing the agreement later acquires the power of disposition. In the event that either (x) during the last 17 days of the lock-up period referred to above, we issue an earnings release or material news or a material event relating to Geron occurs or (y) prior to the expiration of the lock-up period, we announce that we will release earnings results or become aware that material news or a material event will occur during the 16-day period beginning on the last day of the lock-up period, the restrictions described above shall continue to apply until the expiration of the 18-day period beginning on the issuance of the earnings release or the occurrence of the material news or material event; *provided*, *however*, that such extension will not apply if (i) our securities are "actively traded securities" (as defined in Regulation M of the Exchange Act, (ii) we meet the applicable requirements of paragraph (a)(1) of Rule 139 under the Securities Act, in the manner contemplated by NASD Conduct Rule 2711(f)(4), and (iii) the provisions of NASD Conduct Rule 2711(f)(4) are not applicable to any research reports relating to us published or distributed by any of the underwriters during the 15 days before or after the last day of the lock-up period (before giving effect to such extension).

NASDAQ Global Select Market Listing

The shares are listed on the NASDAQ Global Select Market under the symbol "GERN."

Price Stabilization, Short Positions

Until the distribution of the shares is completed, SEC rules may limit underwriters and selling group members from bidding for and purchasing our common stock. However, the representative may engage in transactions that stabilize the price of the common stock, such as bids or purchases to peg, fix or maintain that price.

In connection with the offering, the underwriters may purchase and sell our common stock in the open market. These transactions may include short sales, purchases on the open market to cover positions created by short sales and stabilizing transactions. Short sales involve the sale by the underwriters of a greater number of shares than they are required to purchase in the offering. "Covered" short sales are sales made in an amount not greater than the underwriters' option to purchase additional shares described above. The underwriters may close out any covered short position by either exercising their option to purchase additional shares or purchasing shares in the open market. In determining the source of shares to close out the covered short position, the underwriters will consider, among other things, the price of shares available for purchase in the open market as compared to the price at which they may purchase shares through the option granted to them. "Naked" short sales are sales in excess of such option. The underwriters must close out any naked short position by purchasing shares in the open market. A naked short position is more likely to be created if the underwriters are concerned that there may be downward pressure on the price of our common stock in the open market after pricing that could adversely affect investors who purchase in the offering. Stabilizing transactions consist of various bids for or purchases of shares of common stock made by the underwriters in the open market prior to the completion of the offering.

Similar to other purchase transactions, the underwriters' purchases to cover the syndicate short sales may have the effect of raising or maintaining the market price of our common stock or preventing or retarding a decline in the market price of our common stock. As a result, the price of our common stock may be higher than the price that might otherwise exist in the open market. The underwriters may conduct these transactions on the NASDAQ Global Select Market, in the over-the-counter market or otherwise.

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Neither we nor any of the underwriters make any representation or prediction as to the direction or magnitude of any effect that the transactions described above may have on the price of our common stock. In addition, neither we nor any of the underwriters make any representation that the representative will engage in these transactions or that these transactions, once commenced, will not be discontinued without notice.

Electronic Distribution

In connection with the offering, certain of the underwriters or securities dealers may distribute prospectuses by electronic means, such as e-mail.

Other Relationships

Some of the underwriters and their affiliates have engaged in, and may in the future engage in, investment banking and other commercial dealings in the ordinary course of business with us or our affiliates. They have received, or may in the future receive, customary fees and commissions for these transactions.

We have agreed to pay Trout Capital LLC, a FINRA member, a fee of $250,000 for investor relations and advisory services provided in connection with this offering. This fee is deemed to constitute underwriting compensation under Rule 5110 of the rules of The Financial Industry Regulatory Authority, Inc.

Lazard Fréres & Co. LLC referred this transaction to Lazard Capital Markets LLC and will receive a referral fee from Lazard Capital Markets LLC in connection therewith.

In addition, in the ordinary course of their business activities, the underwriters and their affiliates may make or hold a broad array of investments and actively trade debt and equity securities (or related derivative securities) and financial instruments (including bank loans) for their own account and for the accounts of their customers. Such investments and securities activities may involve securities and/or instruments of ours or our affiliates. The underwriters and their affiliates may also make investment recommendations and/or publish or express independent research views in respect of such securities or financial instruments and may hold, or recommend to clients that they acquire, long and/or short positions in such securities and instruments.

Notice to Prospective Investors in the European Economic Area

In relation to each Member State of the European Economic Area (each, a "Relevant Member State"), no offer of shares may be made to the public in that Relevant Member State other than:

A. to any legal entity which is a qualified investor as defined in the Prospectus Directive;

B. to fewer than 100 or, if the Relevant Member State has implemented the relevant provision of the 2010 PD Amending Directive, 150, natural or legal persons (other than qualified investors as defined in the Prospectus Directive), as permitted under the Prospectus Directive, subject to obtaining the prior consent of the representative; or

C. in any other circumstances falling within Article 3(2) of the Prospectus Directive, provided that no such offer of shares shall require the Company or the representative to publish a prospectus pursuant to Article 3 of the Prospectus Directive or supplement a prospectus pursuant to Article 16 of the Prospectus Directive.

Each person in a Relevant Member State who initially acquires any shares or to whom any offer is made will be deemed to have represented, acknowledged and agreed that it is a "qualified investor" within the meaning of the law in that Relevant Member State implementing Article 2(1)(e) of the Prospectus Directive. In the case of any shares being offered to a financial intermediary as that

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term is used in Article 3(2) of the Prospectus Directive, each such financial intermediary will be deemed to have represented, acknowledged and agreed that the shares acquired by it in the offer have not been acquired on a non-discretionary basis on behalf of, nor have they been acquired with a view to their offer or resale to, persons in circumstances which may give rise to an offer of any shares to the public other than their offer or resale in a Relevant Member State to qualified investors as so defined or in circumstances in which the prior consent of the representative has been obtained to each such proposed offer or resale.

The Company, the representative and its affiliates will rely upon the truth and accuracy of the foregoing representations, acknowledgements and agreements.

This prospectus supplement has been prepared on the basis that any offer of shares in any Relevant Member State will be made pursuant to an exemption under the Prospectus Directive from the requirement to publish a prospectus for offers of shares. Accordingly any person making or intending to make an offer in that Relevant Member State of shares which are the subject of the offering contemplated in this prospectus supplement may only do so in circumstances in which no obligation arises for the Company or any of the underwriters to publish a prospectus pursuant to Article 3 of the Prospectus Directive in relation to such offer. Neither the Company nor the underwriters have authorized, nor do they authorize, the making of any offer of shares in circumstances in which an obligation arises for the Company or the underwriters to publish a prospectus for such offer.

For the purpose of the above provisions, the expression "an offer to the public" in relation to any shares in any Relevant Member State means the communication in any form and by any means of sufficient information on the terms of the offer and the shares to be offered so as to enable an investor to decide to purchase or subscribe the shares, as the same may be varied in the Relevant Member State by any measure implementing the Prospectus Directive in the Relevant Member State and the expression "Prospectus Directive" means Directive 2003/71/EC (including the 2010 PD Amending Directive, to the extent implemented in the Relevant Member States) and includes any relevant implementing measure in the Relevant Member State and the expression "2010 PD Amending Directive" means Directive 2010/73/EU.

Notice to Prospective Investors in the United Kingdom

In addition, in the United Kingdom, this document is being distributed only to, and is directed only at, and any offer subsequently made may only be directed at persons who are "qualified investors" (as defined in the Prospectus Directive) (i) who have professional experience in matters relating to investments falling within Article 19 (5) of the Financial Services and Markets Act 2000 (Financial Promotion) Order 2005, as amended (the "Order") and/or (ii) who are high net worth companies (or persons to whom it may otherwise be lawfully communicated) falling within Article 49(2)(a) to (d) of the Order (all such persons together being referred to as "relevant persons"). This document must not be acted on or relied on in the United Kingdom by persons who are not relevant persons. In the United Kingdom, any investment or investment activity to which this document relates is only available to, and will be engaged in with, relevant persons.

Notice to Prospective Investors in Switzerland

The shares may not be publicly offered in Switzerland and will not be listed on the SIX Swiss Exchange ("SIX") or on any other stock exchange or regulated trading facility in Switzerland. This document has been prepared without regard to the disclosure standards for issuance prospectuses under art. 652a or art. 1156 of the Swiss Code of Obligations or the disclosure standards for listing prospectuses under art. 27 ff. of the SIX Listing Rules or the listing rules of any other stock exchange or regulated trading facility in Switzerland. Neither this document nor any other offering or marketing

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material relating to the shares or the offering may be publicly distributed or otherwise made publicly available in Switzerland.

Neither this document nor any other offering or marketing material relating to the offering, the Company, the shares have been or will be filed with or approved by any Swiss regulatory authority. In particular, this document will not be filed with, and the offer of shares will not be supervised by, the Swiss Financial Market Supervisory Authority FINMA (FINMA), and the offer of shares has not been and will not be authorized under the Swiss Federal Act on Collective Investment Schemes ("CISA"). The investor protection afforded to acquirers of interests in collective investment schemes under the CISA does not extend to acquirers of shares.

Notice to Prospective Investors in the Dubai International Financial Centre

This prospectus supplement relates to an Exempt Offer in accordance with the Offered Securities Rules of the Dubai Financial Services Authority ("DFSA"). This prospectus supplement is intended for distribution only to persons of a type specified in the Offered Securities Rules of the DFSA. It must not be delivered to, or relied on by, any other person. The DFSA has no responsibility for reviewing or verifying any documents in connection with Exempt Offers. The DFSA has not approved this prospectus supplement nor taken steps to verify the information set forth herein and has no responsibility for the prospectus supplement. The shares to which this prospectus supplement relates may be illiquid and/or subject to restrictions on their resale. Prospective purchasers of the shares offered should conduct their own due diligence on the shares. If you do not understand the contents of this prospectus supplement you should consult an authorized financial advisor.

Notice to Prospective Investors in Australia

No placement document, prospectus, product disclosure statement or other disclosure document has been lodged with the Australian Securities and Investments Commission ("ASIC"), in relation to the offering. This prospectus does not constitute a prospectus, product disclosure statement or other disclosure document under the Corporations Act 2001 (the "Corporations Act"), and does not purport to include the information required for a prospectus, product disclosure statement or other disclosure document under the Corporations Act.

Any offer in Australia of the shares may only be made to persons (the "Exempt Investors") who are "sophisticated investors" (within the meaning of section 708(8) of the Corporations Act), "professional investors" (within the meaning of section 708(11) of the Corporations Act) or otherwise pursuant to one or more exemptions contained in section 708 of the Corporations Act so that it is lawful to offer the shares without disclosure to investors under Chapter 6D of the Corporations Act.

The shares applied for by Exempt Investors in Australia must not be offered for sale in Australia in the period of 12 months after the date of allotment under the offering, except in circumstances where disclosure to investors under Chapter 6D of the Corporations Act would not be required pursuant to an exemption under section 708 of the Corporations Act or otherwise or where the offer is pursuant to a disclosure document which complies with Chapter 6D of the Corporations Act. Any person acquiring shares must observe such Australian on-sale restrictions.

This prospectus supplement contains general information only and does not take account of the investment objectives, financial situation or particular needs of any particular person. It does not contain any securities recommendations or financial product advice. Before making an investment decision, investors need to consider whether the information in this prospectus supplement is appropriate to their needs, objectives and circumstances, and, if necessary, seek expert advice on those matters.

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Notice to Prospective Investors in Hong Kong

The securities have not been offered or sold and will not be offered or sold in Hong Kong, by means of any document, other than (a) to "professional investors" as defined in the Securities and Futures Ordinance (Cap. 571) of Hong Kong and any rules made under that Ordinance; or (b) in other circumstances which do not result in the document being a "prospectus" as defined in the Companies Ordinance (Cap. 32) of Hong Kong or which do not constitute an offer to the public within the meaning of that Ordinance. No advertisement, invitation or document relating to the securities has been or may be issued or has been or may be in the possession of any person for the purposes of issue, whether in Hong Kong or elsewhere, which is directed at, or the contents of which are likely to be accessed or read by, the public of Hong Kong (except if permitted to do so under the securities laws of Hong Kong) other than with respect to securities which are or are intended to be disposed of only to persons outside Hong Kong or only to "professional investors" as defined in the Securities and Futures Ordinance and any rules made under that Ordinance.

Notice to Prospective Investors in Japan

The securities have not been and will not be registered under the Financial Instruments and Exchange Law of Japan (Law No. 25 of 1948, as amended) and, accordingly, will not be offered or sold, directly or indirectly, in Japan, or for the benefit of any Japanese Person or to others for re-offering or resale, directly or indirectly, in Japan or to any Japanese Person, except in compliance with all applicable laws, regulations and ministerial guidelines promulgated by relevant Japanese governmental or regulatory authorities in effect at the relevant time. For the purposes of this paragraph, "Japanese Person" shall mean any person resident in Japan, including any corporation or other entity organized under the laws of Japan.

Notice to Prospective Investors in Singapore

This prospectus supplement has not been registered as a prospectus with the Monetary Authority of Singapore. Accordingly, this prospectus supplement and any other document or material in connection with the offer or sale, or invitation for subscription or purchase, of Non-CIS Securities may not be circulated or distributed, nor may the Non-CIS Securities be offered or sold, or be made the subject of an invitation for subscription or purchase, whether directly or indirectly, to persons in Singapore other than (i) to an institutional investor under Section 274 of the Securities and Futures Act, Chapter 289 of Singapore (the "SFA"), (ii) to a relevant person pursuant to Section 275(1), or any person pursuant to Section 275(1A), and in accordance with the conditions specified in Section 275, of the SFA, or (iii) otherwise pursuant to, and in accordance with the conditions of, any other applicable provision of the SFA.

Where the Non-CIS Securities are subscribed or purchased under Section 275 of the SFA by a relevant person which is:

(a) a corporation (which is not an accredited investor (as defined in Section 4A of the SFA)) the sole business of which is to hold investments and the entire share capital of which is owned by one or more individuals, each of whom is an accredited investor; or

(b) a trust (where the trustee is not an accredited investor) whose sole purpose is to hold investments and each beneficiary of the trust is an individual who is an accredited investor,

securities (as defined in Section 239(1) of the SFA) of that corporation or the beneficiaries' rights and interest (howsoever described) in that trust shall not be transferred within six months after that

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corporation or that trust has acquired the Non-CIS Securities pursuant to an offer made under Section 275 of the SFA except:

(a) to an institutional investor or to a relevant person defined in Section 275(2) of the SFA, or to any person arising from an offer referred to in Section 275(1A) or Section 276(4)(i)(B) of the SFA;

(b) where no consideration is or will be given for the transfer;

(c) where the transfer is by operation of law;

(d) as specified in Section 276(7) of the SFA; or

(e) as specified in Regulation 32 of the Securities and Futures (Offers of Investments) (Shares and Debentures) Regulations 2005 of Singapore.

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MATERIAL U.S. FEDERAL INCOME AND ESTATE TAX CONSIDERATIONS FOR NON-U.S. HOLDERS OF OUR COMMON STOCK

The following summary describes the material U.S. federal income and estate tax consequences of the acquisition, ownership and disposition of our common stock acquired in this offering by Non-U.S. Holders (as defined below). This discussion does not address all aspects of U.S. federal income and estate taxes and does not deal with foreign, state and local consequences that may be relevant to Non-U.S. Holders in light of their particular circumstances, nor does it address U.S. federal tax consequences other than income and estate taxes. Special rules different from those described below may apply to certain Non-U.S. Holders that are subject to special treatment under the Code, such as financial institutions, insurance companies, tax-exempt organizations, broker-dealers and traders in securities, U.S. expatriates, "controlled foreign corporations," "passive foreign investment companies," corporations that accumulate earnings to avoid U.S. federal income tax, persons that hold our common stock as part of a "straddle," "hedge," "conversion transaction," "synthetic security" or integrated investment or other risk reduction strategy, persons subject to the alternative minimum tax or Medicare contribution tax, partnerships and other pass-through entities, and investors in such pass-through entities. Such Non-U.S. Holders are urged to consult their own tax advisors to determine the U.S. federal, state, local and other tax consequences that may be relevant to them. Furthermore, the discussion below is based upon the provisions of the Code, and Treasury regulations, rulings and judicial decisions thereunder as of the date hereof, and such authorities may be repealed, revoked or modified, perhaps retroactively, so as to result in U.S. federal income and estate tax consequences different from those discussed below. We have not requested a ruling from the U.S. Internal Revenue Service, or IRS, with respect to the statements made and the conclusions reached in the following summary, and there can be no assurance that the IRS will agree with such statements and conclusions. This discussion assumes that the Non-U.S. Holder holds our common stock as a "capital asset" within the meaning of Section 1221 of the Code (generally, property held for investment).

Persons considering the purchase of our common stock pursuant to this offering should consult their own tax advisors concerning the U.S. federal income and estate tax consequences of acquiring, owning and disposing of our common stock in light of their particular situations as well as any consequences arising under the laws of any other taxing jurisdiction, including any state, local or foreign tax consequences.

For the purposes of this discussion, a "Non-U.S. Holder" is, for U.S. federal income tax purposes, a beneficial owner of common stock that is neither a U.S. Holder, nor a partnership (or other entity treated as a partnership for U.S. federal income tax purposes regardless of its place of organization or formation). A "U.S. Holder" means a beneficial owner of our common stock that is for U.S. federal income tax purposes (a) an individual who is a citizen or resident of the U.S., (b) a corporation or other entity treated as a corporation created or organized in or under the laws of the U.S., any state thereof or the District of Columbia, (c) an estate the income of which is subject to U.S. federal income taxation regardless of its source or (d) a trust if it (1) is subject to the primary supervision of a court within the U.S. and has one or more U.S. persons that have the authority to control all substantial decisions of the trust or (2) has a valid election in effect under applicable U.S. Treasury regulations to be treated as a U.S. person.

Distributions

Subject to the discussion below, distributions, if any, made on our common stock to a Non-U.S. Holder of our common stock to the extent made out of our current or accumulated earnings and profits (as determined under U.S. federal income tax principles) generally will constitute dividends for U.S. tax purposes and will be subject to withholding tax at a 30% rate or such lower rate as may be specified by an applicable income tax treaty. To obtain a reduced rate of withholding under a treaty, a Non-U.S. Holder generally will be required to provide us with a properly executed IRS Form W-8BEN,

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or other appropriate form, certifying the Non-U.S. Holder's entitlement to benefits under that treaty. In the case of a Non-U.S. Holder that is an entity, Treasury Regulations and the relevant tax treaty provide rules to determine whether, for purposes of determining the applicability of a tax treaty, dividends will be treated as paid to the entity or to those holding an interest in that entity. If a Non-U.S. Holder holds stock through a financial institution or other agent acting on the holder's behalf, the holder will be required to provide appropriate documentation to such agent. The holder's agent will then be required to provide certification to us or our paying agent, either directly or through other intermediaries. If you are eligible for a reduced rate of U.S. federal withholding tax under an income tax treaty, you may be able to obtain a refund or credit of any excess amounts withheld by timely filing an appropriate claim for a refund with the IRS.

We generally are not required to withhold tax on dividends paid to a Non-U.S. Holder that are effectively connected with the Non-U.S. Holder's conduct of a trade or business within the U.S. (and, if required by an applicable income tax treaty, are attributable to a permanent establishment that such holder maintains in the U.S.) if a properly executed IRS Form W-8ECI, stating that the dividends are so connected, is furnished to us (or, if stock is held through a financial institution or other agent, to such agent). In general, such effectively connected dividends will be subject to U.S. federal income tax, on a net income basis at the regular graduated rates. A corporate Non-U.S. Holder receiving effectively connected dividends may also be subject to an additional "branch profits tax," which is imposed, under certain circumstances, at a rate of 30% (or such lower rate as may be specified by an applicable treaty) on the corporate Non-U.S. Holder's effectively connected earnings and profits, subject to certain adjustments.

To the extent distributions on our common stock, if any, exceed our current and accumulated earnings and profits, they will first reduce the Non-U.S. Holder's adjusted basis in our common stock, but not below zero, and then will be treated as gain to the extent of any excess, and taxed in the same manner as gain realized from a sale or other disposition of common stock as described in the next section.

Gain on Disposition of Our Common Stock

Subject to the discussion below regarding backup withholding and foreign accounts, a Non-U.S. Holder generally will not be subject to U.S. federal income tax with respect to gain realized on a sale or other disposition of our common stock unless (a) the gain is effectively connected with a trade or business of such holder in the U.S. (and, if required by an applicable income tax treaty, is attributable to a permanent establishment that such holder maintains in the U.S.), (b) the Non-U.S. Holder is a nonresident alien individual and is present in the U.S. for 183 or more days in the taxable year of the disposition and certain other conditions are met or (c) we are or have been a "United States real property holding corporation" within the meaning of Code Section 897(c)(2) at any time within the shorter of the five-year period preceding such disposition or such holder's holding period. In general, we would be a U.S. real property holding corporation if interests in U.S. real estate comprised (by fair market value) at least half of our business assets. We believe that we are not, and do not anticipate becoming, a U.S. real property holding corporation. Even if we are treated as a U.S. real property holding corporation, gain realized by a Non-U.S. Holder on a disposition of our common stock will not be subject to U.S. federal income tax so long as (1) the Non-U.S. Holder owned, directly, indirectly and constructively, no more than five percent of our common stock at all times within the shorter of (i) the five-year period preceding the disposition or (ii) the holder's holding period and (2) our common stock is regularly traded on an established securities market. There can be no assurance that our common stock will continue to qualify as regularly traded on an established securities market.

If you are a Non-U.S. Holder described in (a) above, you will be required to pay tax on the net gain derived from the sale at regular graduated U.S. federal income tax rates, and corporate Non-U.S. Holders described in (a) above may be subject to the additional branch profits tax at a 30% rate or

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such lower rate as may be specified by an applicable income tax treaty. If you are an individual Non-U.S. Holder described in (b) above, you will be required to pay a flat 30% tax on the gain derived from the sale, which gain may be offset by U.S. source capital losses (even though you are not considered a resident of the U.S.).

Information Reporting Requirements and Backup Withholding

Generally, we must report information to the IRS with respect to any dividends we pay on our common stock including the amount of any such dividends, the name and address of the recipient, and the amount, if any, of tax withheld. A similar report is sent to the holder to whom any such dividends are paid. Pursuant to tax treaties or certain other agreements, the IRS may make its reports available to tax authorities in the recipient's country of residence.

Dividends paid by us (or our paying agents) to a Non-U.S. Holder may also be subject to U.S. backup withholding. U.S. backup withholding generally will not apply to a Non-U.S. Holder who provides a properly executed IRS Form W-8BEN or otherwise establishes an exemption.

Under current U.S. federal income tax law, U.S. information reporting and backup withholding requirements generally will apply to the proceeds of a disposition of our common stock effected by or through a U.S. office of any broker, U.S. or foreign, except that information reporting and such requirements may be avoided if the holder provides a properly executed IRS Form W-8BEN or otherwise meets documentary evidence requirements for establishing Non-U.S. Holder status or otherwise establishes an exemption. Generally, U.S. information reporting and backup withholding requirements will not apply to a payment of disposition proceeds to a Non-U.S. Holder where the transaction is effected outside the U.S. through a non-U.S. office of a non-U.S. broker. Information reporting and backup withholding requirements may, however, apply to a payment of disposition proceeds if the broker has actual knowledge, or reason to know, that the holder is, in fact, a U.S. person. For information reporting purposes, certain brokers with substantial U.S. ownership or operations will generally be treated in a manner similar to U.S. brokers.

Any amounts of tax withheld under the backup withholding rules may be credited against the tax liability of persons subject to backup withholding, provided that the required information is timely furnished to the IRS.

Foreign Accounts

A U.S. federal withholding tax of 30% may apply on dividends on and the gross proceeds of a disposition of our common stock paid to a foreign financial institution (as specifically defined by applicable rules) unless such institution enters into an agreement with the U.S. government to withhold on certain payments and to collect and provide to the U.S. tax authorities substantial information regarding U.S. account holders of such institution (which includes certain equity holders of such institution, as well as certain account holders that are foreign entities with U.S. owners). This U.S. federal withholding tax of 30% will also apply on dividends on and the gross proceeds of a disposition of our common stock to a non-financial foreign entity unless such entity provides the withholding agent with either a certification that it does not have any substantial direct or indirect U.S. owners or provides information regarding substantial direct and indirect U.S. owners of the entity. The withholding tax described above will not apply if the foreign financial institution or non-financial foreign entity otherwise qualifies for an exemption from the rules. Under certain circumstances, a Non-U.S. Holder might be eligible for refunds or credits of such taxes. Holders are encouraged to consult with their own tax advisors regarding the possible implications of these rules for their investment in our common stock.

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The IRS has issued guidance providing that the withholding provisions described above will generally apply to payments of dividends made on or after July 1, 2014 and to payments of gross proceeds from a sale or other disposition of common stock on or after January 1, 2017.

Federal Estate Tax

An individual Non-U.S. Holder who is treated as the owner of, or has made certain lifetime transfers of, an interest in our common stock will be required to include the value thereof in his or her gross estate for U.S. federal estate tax purposes, and may be subject to U.S. federal estate tax unless an applicable estate tax treaty provides otherwise, even though such individual was not a citizen or resident of the U.S. at the time of his or her death.

EACH PROSPECTIVE INVESTOR SHOULD CONSULT ITS OWN TAX ADVISOR REGARDING THE TAX CONSEQUENCES OF PURCHASING, HOLDING AND DISPOSING OF OUR COMMON STOCK, INCLUDING THE CONSEQUENCES OF ANY PROPOSED CHANGE IN APPLICABLE LAW.

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LEGAL MATTERS

The validity of the shares of common stock offered by this prospectus supplement and the accompanying prospectus will be passed upon for us by Cooley LLP, Palo Alto, California. Davis Polk & Wardwell LLP, Menlo Park, California, is counsel for the underwriters in connection with this offering.

EXPERTS

The consolidated financial statements of Geron Corporation appearing in Geron's Annual Report on Form 10-K for the year ended December 31, 2012, and the effectiveness of internal control over financial reporting as of December 31, 2012 have been audited by Ernst & Young LLP, independent registered public accounting firm, as set forth in their reports thereon, included therein, and incorporated herein by reference. Such consolidated financial statements are incorporated herein by reference in reliance upon such reports given on the authority of such firm as experts in accounting and auditing.

WHERE YOU CAN FIND MORE INFORMATION

We are subject to the reporting requirements of the Exchange Act and file annual, quarterly and current reports, proxy statements and other information with the SEC. You may read and copy any document we file with the SEC at the SEC's Public Reference Room at 100 F Street, N.E., Washington, D.C. 20549. You can request copies of these documents by writing to the SEC and paying a fee for the copying cost. Please call the SEC at 1-800-SEC-0330 for further information on the public reference rooms. Our SEC filings are also available to the public over the Internet at the SEC's website at www.sec.gov. Our common stock is listed on The NASDAQ Global Select Market, and you can read and inspect our filings at the offices of The NASDAQ Stock Market at 1735 K Street, Washington, D.C. 20006. We maintain a website at www.geron.com. Information found on, or accessible through, our website is not a part of, and is not incorporated into, this prospectus supplement or the accompanying prospectus, and you should not consider it part of this prospectus supplement or the accompanying prospectus.

INCORPORATION OF CERTAIN INFORMATION BY REFERENCE

The SEC allows us to "incorporate by reference" information from other documents that we file with it, which means that we can disclose important information to you by referring you to those documents. The information incorporated by reference is considered to be part of this prospectus supplement and the accompanying prospectus. You should read the information incorporated by reference because it is an important part of this prospectus supplement and the accompanying prospectus. We incorporate by reference the following information or documents that we have filed with the SEC (Commission File No. 000-20859):

Geron's Annual Report on Form 10-K for the year ended December 31, 2012, filed with the SEC on March 15, 2013;

Geron's Quarterly Reports on Form 10-Q for the quarterly period ended March 31, 2013, filed with the SEC on May 3, 2013, for the quarterly period ended June 30, 2013, filed with the SEC on August 8, 2013, and for the quarterly period ended September 30, 2013, filed with the SEC on November 7, 2013;

Geron's Current Reports on Form 8-K filed with the SEC on January 8, 2013, February 1, 2013, February 14, 2013, April 26, 2013 (other than the information furnished under Item 2.02 and the related exhibit), May 24, 2013, September 27, 2013, October 1, 2013, October 15, 2013 and November 26, 2013;

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- the information specifically incorporated by reference into our 2012 Annual Report on Form 10-K referred to above from our definitive proxy statement relating to our 2013 annual meeting of stockholders, filed with the SEC on April 5, 2013; and

- the description of our common stock set forth in our registration statement on Form 8-A, filed with the SEC on June 13, 1996.

Any information in any of the foregoing documents will automatically be deemed to be modified or superseded to the extent that information in this prospectus supplement or in a later filed document that is incorporated or deemed to be incorporated herein by reference modifies or replaces such information.

We also incorporate by reference any future filings (other than current reports furnished under Item 2.02 or Item 7.01 of Form 8-K and exhibits filed on such form that are related to such items unless such Form 8-K expressly provides to the contrary) made with the SEC pursuant to Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act after the date of this prospectus supplement and prior to the termination of the offering of the common stock covered by this prospectus supplement and the accompanying prospectus. Information in such future filings updates and supplements the information provided in this prospectus supplement and the accompanying prospectus. Any statements in any such future filings will automatically be deemed to modify and supersede any information in any document we previously filed with the SEC that is incorporated or deemed to be incorporated herein by reference to the extent that statements in the later filed document modify or replace such earlier statements.

We will furnish without charge to you, upon written or oral request, a copy of any or all of the documents incorporated by reference, including exhibits to these documents. You should direct any requests for documents to Stephen N. Rosenfield, Executive Vice President, General Counsel and Corporate Secretary, at Geron Corporation, 149 Commonwealth Drive, Menlo Park, California 94025, telephone: (650) 473-7700.

PROSPECTUS

$200,000,000
Common Stock
Preferred Stock
Debt Securities
Warrants

From time to time, we may offer and sell up to $200,000,000 of any combination of the securities described in this prospectus, either individually or in combination with other securities. We may also offer common stock or preferred stock upon conversion of debt securities, common stock upon conversion of preferred stock, or common stock, preferred stock or debt securities upon the exercise of warrants.

We will provide the specific terms of these offerings and securities in one or more supplements to this prospectus. We may also authorize one or more free writing prospectuses to be provided to you in connection with these offerings. The prospectus supplement and any related free writing prospectus may also add, update or change information contained in this prospectus. You should carefully read this prospectus, the applicable prospectus supplement and any related free writing prospectus, as well as the documents incorporated by reference, before buying any of the securities being offered.

Our common stock is listed on The NASDAQ Global Select Market under the trading symbol "GERN." On October 5, 2012, the last reported sale price of our common stock was $1.41 per share. The applicable prospectus supplement will contain information, where applicable, as to other listings, if any, on The NASDAQ Global Select Market or other securities exchange of the securities covered by the applicable prospectus supplement.

Investing in our securities involves a high degree of risk. You should review carefully the risks and uncertainties described under the heading "Risk Factors" contained in the applicable prospectus supplement and in any free writing prospectus we have authorized for use in connection with a specific offering, and under similar headings in the documents that are incorporated by reference into this prospectus.

This prospectus may not be used to consummate a sale of securities unless accompanied by a prospectus supplement.

The securities may be sold directly by us to investors, through agents designated from time to time or to or through underwriters or dealers, on a continuous or delayed basis. For additional information on the methods of sale, you should refer to the section entitled "Plan of Distribution" in this prospectus. If any agents or underwriters are involved in the sale of any securities with respect to which this prospectus is being delivered, the names of such agents or underwriters and any applicable fees, commissions, discounts and over-allotment options will be set forth in a prospectus supplement. The price to the public of such securities and the net proceeds we expect to receive from such sale will also be set forth in a prospectus supplement.

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

The date of this prospectus is October 11, 2012.

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ABOUT THIS PROSPECTUS

This prospectus is part of a registration statement on Form S-3 that we filed with the Securities and Exchange Commission, or SEC, utilizing a "shelf" registration process. Under this shelf registration process, we may offer and sell shares of our common stock and preferred stock, various series of debt securities and/or warrants to purchase any of such securities, either individually or in combination with other securities, in one or more offerings, up to a total dollar amount of $200,000,000. This prospectus provides you with a general description of the securities we may offer.

Each time we offer securities under this prospectus, we will provide a prospectus supplement that will contain more specific information about the terms of that offering. We may also authorize one or more free writing prospectuses to be provided to you that may contain material information relating to these offerings. The prospectus supplement and any related free writing prospectus that we may authorize to be provided to you may also add, update or change any of the information contained in this prospectus or in the documents that we have incorporated by reference into this prospectus. We urge you to read carefully this prospectus, any applicable prospectus supplement and any free writing prospectus we have authorized for use in connection with a specific offering, together with the information incorporated herein by reference as described under the heading "Incorporation of Certain Information by Reference," before buying any of the securities being offered.

This prospectus may not be used to consummate a sale of securities unless it is accompanied by a prospectus supplement.

You should rely only on the information contained in, or incorporated by reference into, this prospectus and any applicable prospectus supplement, along with the information contained in any free writing prospectus we have authorized for use in connection with a specific offering. We have not authorized anyone to provide you with different or additional information. This prospectus is an offer to sell only the securities offered hereby, but only under circumstances and in jurisdictions where it is lawful to do so.

The information appearing in this prospectus, any applicable prospectus supplement or any related free writing prospectus is accurate only as of the date on the front of the document and any information we have incorporated by reference is accurate only as of the date of the document incorporated by reference, regardless of the time of delivery of this prospectus, any applicable prospectus supplement or any related free writing prospectus, or any sale of a security. Our business, financial condition, results of operations and prospects may have changed since those dates.

This prospectus contains summaries of certain provisions contained in some of the documents described herein, but reference is made to the actual documents for complete information. All of the summaries are qualified in their entirety by the actual documents. Copies of some of the documents referred to herein have been filed, will be filed or will be incorporated by reference as exhibits to the registration statement of which this prospectus is a part, and you may obtain copies of those documents as described below under the section entitled "Where You Can Find More Information."

PROSPECTUS SUMMARY

This summary highlights selected information contained elsewhere in this prospectus or incorporated by reference in this prospectus, and does not contain all of the information that you need to consider in making your investment decision. You should carefully read the entire prospectus, the applicable prospectus supplement and any related free writing prospectus, including the risks of investing in our securities discussed under the heading "Risk Factors" contained in the applicable prospectus supplement and any related free writing prospectus, and under similar headings in the other documents that are incorporated by reference into this prospectus. You should also carefully read the information incorporated by reference into this prospectus, including our financial statements, and the exhibits to the registration statement of which this prospectus is a part.

Geron Corporation

Overview

Geron is a biopharmaceutical company developing first-in-class therapies for cancer. We have two lead product candidates in clinical development, GRN1005 and imetelstat. GRN1005 is a peptide-drug conjugate that is designed to transport a proven anti-cancer drug, paclitaxel, across the blood-brain barrier by targeting low-density lipoprotein receptor-related proteins (LRPs), specifically LRP-1. GRN1005 is being evaluated in two Phase 2 clinical trials: brain metastases arising from breast cancer and brain metastases arising from non-small cell lung cancer. Imetelstat is a telomerase inhibitor that is being evaluated in three ongoing Phase 2 clinical trials: advanced non-small cell lung cancer, essential thrombocythemia and multiple myeloma.

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 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 number of years, if at all.

Company Information

We were incorporated in 1990 under the laws of Delaware. Our principal executive offices are located at 149 Commonwealth Drive, Suite 2070, Menlo Park, California 94025 and our telephone number is (650) 473-7700. Our website address is www.geron.com. Information found on, or accessible through, our website is not a part of, and is not incorporated into, this prospectus, and you should not consider it part of this prospectus or part of any prospectus supplement. Our website address is included in this document as an inactive textual reference only.

Unless the context indicates otherwise, as used in this prospectus, the terms "Geron," "Geron Corporation," "we," "us" and "our" refer to Geron Corporation, a Delaware corporation.

The Securities We May Offer

We may offer shares of our common stock and preferred stock, various series of debt securities and/or warrants to purchase any of such securities, either individually or in combination with other securities, with a total value of up to $200,000,000 from time to time under this prospectus, together with the applicable prospectus supplement and any related free writing prospectus, at prices and on terms to be determined by market conditions at the time of any offering. This prospectus provides you

with a general description of the securities we may offer. Each time we offer a type or series of securities under this prospectus, we will provide a prospectus supplement that will describe the specific amounts, prices and other important terms of the securities, including, to the extent applicable:

- designation or classification;
- aggregate principal amount or aggregate offering price;
- maturity date, if applicable;
- original issue discount, if any;
- rates and times of payment of interest or dividends, if any;
- redemption, conversion, exercise, exchange or sinking fund terms, if any;
- ranking;
- restrictive covenants, if any;
- voting or other rights, if any;
- conversion or exchange prices or rates, if any, and, if applicable, any provisions for changes to or adjustments in the conversion or exchange prices or rates and in the securities or other property receivable upon conversion or exchange; and
- material or special U.S. federal income tax considerations, if any.

The applicable prospectus supplement and any related free writing prospectus that we may authorize to be provided to you may also add, update or change any of the information contained in this prospectus or in the documents we have incorporated by reference. However, no prospectus supplement or free writing prospectus will offer a security that is not registered and described in this prospectus at the time of the effectiveness of the registration statement of which this prospectus is a part.

THIS PROSPECTUS MAY NOT BE USED TO CONSUMMATE A SALE OF SECURITIES UNLESS IT IS ACCOMPANIED BY A PROSPECTUS SUPPLEMENT.

We may sell the securities directly to investors or to or through agents, underwriters or dealers. We, and our agents or underwriters, reserve the right to accept or reject all or part of any proposed purchase of securities. If we do offer securities to or through agents or underwriters, we will include in the applicable prospectus supplement:

- the names of those agents or underwriters;
- applicable fees, discounts and commissions to be paid to them;

details regarding over-allotment options, if any; and

the net proceeds to us.

Common Stock. We may issue shares of our common stock from time to time. The holders of our common stock are entitled to one vote for each share held of record on all matters submitted to a vote of stockholders. Subject to preferences that may be applicable to any outstanding shares of preferred stock, the holders of common stock are entitled to receive ratably such dividends as may be declared by our board of directors out of legally available funds. Upon our liquidation, dissolution or winding up, holders of our common stock are entitled to share ratably in all assets remaining after payment of liabilities and the liquidation preferences of any outstanding shares of preferred stock. Holders of common stock have no preemptive rights and no right to convert their common stock into any other securities. There are no redemption provisions applicable to our common stock. In this prospectus, we

have summarized certain general features of the common stock under "Description of Capital Stock Common Stock." We urge you, however, to read the applicable prospectus supplement (and any related free writing prospectus that we may authorize to be provided to you) related to any common stock being offered.

Preferred Stock. We may issue shares of our preferred stock from time to time, in one or more series. Under our certificate of incorporation, our board of directors has the authority to designate up to 3,000,000 shares of preferred stock, $0.001 par value per share, in one or more series and to fix the privileges, preferences and rights of each series of preferred stock, any or all of which may be greater than the rights of the common stock. If we sell any new series of preferred stock under this prospectus and any applicable prospectus supplement, our board of directors will determine the designations, voting powers, preferences and rights of the preferred stock being offered, as well as the qualifications, limitations or restrictions thereof, including dividend rights, conversion rights, preemptive rights, terms of redemption or repurchase, liquidation preferences, sinking fund terms and the number of shares constituting any series or the designation of any series. Preferred stock may be convertible into our common stock or other securities of ours, or may be exchangeable for debt securities. Conversion may be mandatory or at the holder's option and would be at prescribed conversion rates. We will file as an exhibit to the registration statement of which this prospectus is a part, or will incorporate by reference from reports that we file with the SEC, the form of the certificate of designation that describes the terms of the series of preferred stock that we are offering before the issuance of the related series of preferred stock. In this prospectus, we have summarized certain general features of the preferred stock under "Description of Capital Stock Preferred Stock." We urge you, however, to read the applicable prospectus supplement (and any related free writing prospectus that we may authorize to be provided to you) related to the series of preferred stock being offered, as well as the complete certificate of designation that contains the terms of the applicable series of preferred stock.

Debt Securities. We may issue debt securities from time to time, in one or more series, as either senior or subordinated debt or as senior or subordinated convertible debt. The senior debt securities will rank equally with any other unsecured and unsubordinated debt. The subordinated debt securities will be subordinate and junior in right of payment, to the extent and in the manner described in the instrument governing the debt, to all of our senior indebtedness. Convertible debt securities will be convertible into or exchangeable for our common stock or our other securities. Conversion may be mandatory or at the holder's option and would be at prescribed conversion rates.

The debt securities will be issued under an indenture that we will enter into with a national banking association or other eligible party, as trustee. In this prospectus, we have summarized certain general features of the debt securities under "Description of Debt Securities." We urge you, however, to read the applicable prospectus supplement (and any related free writing prospectus that we may authorize to be provided to you) related to the series of debt securities being offered, as well as the complete indenture and any supplemental indentures that contain the terms of the debt securities. We have filed the form of indenture as an exhibit to the registration statement of which this prospectus is a part, and supplemental indentures and forms of debt securities containing the terms of the debt securities being offered will be filed as exhibits to the registration statement of which this prospectus is a part or will be incorporated by reference from reports that we file with the SEC.

Warrants. We may issue warrants for the purchase of common stock, preferred stock and/or debt securities in one or more series. We may issue warrants independently or in combination with common stock, preferred stock and/or debt securities. In this prospectus, we have summarized certain general features of the warrants under "Description of Warrants." We urge you, however, to read the applicable prospectus supplement (and any related free writing prospectus that we may authorize to be provided to you) related to the particular series of warrants being offered, as well as the form of warrant and/or the warrant agreement and warrant certificate, as applicable, that contain the terms of

the warrants. We have filed the forms of the warrant agreements and forms of warrant certificates containing the terms of the warrants that we may offer as exhibits to the registration statement of which this prospectus is a part. We will file as exhibits to the registration statement of which this prospectus is a part, or will incorporate by reference from reports that we file with the SEC, the form of warrant and/or the warrant agreement and warrant certificate, as applicable, that contain the terms of the particular series of warrants we are offering, and any supplemental agreements, before the issuance of such warrants.

Warrants may be issued under a warrant agreement that we enter into with a warrant agent. We will indicate the name and address of the warrant agent, if any, in the applicable prospectus supplement relating to a particular series of warrants.

RISK FACTORS

Investing in our securities involves a high degree of risk. Before deciding whether to invest in our securities, you should consider carefully the risks and uncertainties described under the heading "Risk Factors" contained in the applicable prospectus supplement and any related free writing prospectus, and discussed under the section entitled "Risk Factors" contained in our most recent Annual Report on Form 10-K and in our most recent Quarterly Report on Form 10-Q, as well as any amendments thereto reflected in subsequent filings with the SEC, which are incorporated by reference into this prospectus in their entirety, together with other information in this prospectus, the documents incorporated by reference and any free writing prospectus that we may authorize for use in connection with this offering. The risks described in these documents are not the only ones we face, but those that we consider to be material. There may be other unknown or unpredictable economic, business, competitive, regulatory or other factors that could have material adverse effects on our future results. Past financial performance may not be a reliable indicator of future performance, and historical trends should not be used to anticipate results or trends in future periods. If any of these risks actually occurs, our business, financial condition, results of operations or cash flow could be seriously harmed. This could cause the trading price of our common stock to decline, resulting in a loss of all or part of your investment. Please also read carefully the section below entitled "Forward-Looking Statements."

FORWARD-LOOKING STATEMENTS

This prospectus and the documents we have filed with the SEC that are incorporated by reference contain "forward-looking statements" within the meaning of Section 27A of the Securities Act of 1933, as amended, or the Securities Act, and Section 21E of the Securities Exchange Act of 1934, as amended, or the Exchange Act. These statements relate to future events or to our future operating or financial performance and involve known and unknown risks, uncertainties and other factors which may cause our actual results, performance or achievements to be materially different from any future results, performances or achievements expressed or implied by the forward-looking statements. Forward-looking statements may include, but are not limited to, statements about:

- future research and development activities, including the scope, timing, initiation and completion of clinical trials, and status of product development;
- the size and timing of expenditures and whether there are unanticipated expenditures;
- our requirements for additional capital;
- plans for regulatory filings;
- the timing of regulatory submissions and the timing, scope and anticipated outcome of related regulatory actions;
- our current and potential future collaborators' ability to market, commercialize and achieve market acceptance for our product candidates or products that we may develop;
- our ability to maintain our collaborative arrangements, including licenses, and to establish and maintain potential new collaborative arrangements for the development and commercialization of our current or future product candidates;
- our ability to protect our intellectual property and operate our business without infringing upon the intellectual property rights of others;
- the implementation of our corporate strategy;

the timing and amounts of any royalty or milestone payments to Angiochem pursuant to our exclusive license agreement with Angiochem;

our ability to divest our stem cell assets;

our estimates regarding the sufficiency of our cash resources and our use of the net proceeds from this offering; and

our future financial performance.

In some cases, you can identify forward-looking statements by terms such as "may," "will," "should," "could," "would," "expects," "plans," "anticipates," "believes," "estimates," "projects," "predicts," "potential" and similar expressions intended to identify forward-looking statements. These statements reflect our current views with respect to future events, are based on assumptions and are subject to risks and uncertainties. Given these uncertainties, you should not place undue reliance on these forward-looking statements. We discuss in greater detail, and incorporate by reference into this prospectus in their entirety, many of these risks and uncertainties under the heading "Risk Factors" contained in the applicable prospectus supplement, in any free writing prospectus we may authorize for use in connection with a specific offering, and in our most recent annual report on Form 10-K and in our most recent quarterly report on Form 10-Q, as well as any amendments thereto reflected in subsequent filings with the SEC. Also, these forward-looking statements represent our estimates and assumptions only as of the date of the document containing the applicable statement. Unless required by law, we undertake no obligation to update or revise any forward-looking statements to reflect new information or future events or developments. Thus, you should not assume that our silence over time means that actual events are bearing out as expressed or implied in such forward-looking statements. You should read this prospectus, the applicable prospectus supplement, together with the documents we have filed with the SEC that are incorporated by reference and any free writing prospectus that we may authorize for use in connection with this offering completely and with the understanding that our actual future results may be materially different from what we expect. We qualify all of the forward-looking statements in the foregoing documents by these cautionary statements.

FINANCIAL RATIOS

Our net losses were inadequate to cover fixed charges for each of the periods presented. Accordingly, the following table sets forth the dollar amount of the coverage deficiency. Because of the deficiency, ratio information is not applicable. Amounts shown are in thousands.

	Year Ended December 31,					Six Months Ended June 30,
	2007	2008	2009	2010	2011	2012
Ratio of earnings to fixed charges[(1)]	N/A	N/A	N/A	N/A	N/A	N/A
Coverage deficiency	$ (36,440)	$ (61,706)	$ (69,853)	$ (111,046)	$ (96,401)	$ (36,901)

(1) The ratio of earnings to fixed charges was computed by dividing earnings by fixed charges. For this purpose, earnings consist of net loss before fixed charges. Fixed charges consist of estimated interest expense on outstanding lease liabilities and amortization of debt discount and accrual of interest on outstanding debt.

USE OF PROCEEDS

Except as described in any applicable prospectus supplement or in any free writing prospectus we have authorized for use in connection with a specific offering, we currently intend to use the net proceeds from the sale of the securities under this prospectus, if any, for working capital and general corporate purposes, including research and development expenses and general and administrative expenses. We will set forth in the prospectus supplement applicable to a specific offering our intended use for the net proceeds received from the sale of any securities in that offering.

The amounts and timing of our use of the net proceeds from any offerings hereunder will depend on a number of factors, such as the timing and progress of our research and development efforts, the

timing and progress of any partnering and collaboration efforts and technological advances. As of the date of this prospectus, we cannot specify with certainty all of the particular uses for the net proceeds to us from offerings hereunder. Accordingly, our management will have broad discretion in the timing and application of these proceeds. Pending application of the net proceeds as described above, we intend to temporarily invest the proceeds in short-term, interest-bearing instruments.

SELECTED CONSOLIDATED FINANCIAL DATA

On January 1, 2012, we adopted new guidance regarding comprehensive income, which was applied retrospectively, that provides companies with the option to present the total of comprehensive income, components of net income, and the components of other comprehensive income either in a single continuous statement of comprehensive income or in two separate but consecutive statements in annual financial statements. The objective of the standard is to increase the prominence of items reported in other comprehensive income and to facilitate convergence of accounting principles generally accepted in the United States and International Financial Reporting Standards. The standard eliminates the option to present components of other comprehensive income as part of the statement of changes in stockholders' equity. The amendments in this guidance do not change the items that must be reported in other comprehensive income or when an item of other comprehensive income must be reclassified in net income. We adopted the two-statement approach for annual financial statements in the first quarter of 2012.

The table below presents selected historical consolidated statements of comprehensive loss data. We have derived our consolidated statements of comprehensive loss data for the years ended December 31, 2009, 2010 and 2011 from our audited consolidated financial statements included in our Annual Report on Form 10-K for the year ended December 31, 2011 and incorporated by reference in this prospectus. The following selected financial information revises historical information to illustrate the presentation required by the new guidance regarding comprehensive income for each of the periods presented.

	Year Ended December 31,		
Consolidated statements of comprehensive loss data:	**2009**	**2010**	**2011**
(Unaudited, in thousands)			
Net loss	$ (70,184)	$ (111,377)	$ (96,853)
Other comprehensive income (loss):			
Net unrealized gain (loss) on available for sale securities	(445)	306	6
Foreign currency translation adjustments	(1)	4	(1)
Other comprehensive income (loss)	(446)	310	5
Comprehensive loss	$ (70,630)	$ (111,067)	$ (96,848)

DESCRIPTION OF CAPITAL STOCK

General

As of the date of this prospectus, our restated certificate of incorporation, as amended, or the Restated Certificate, authorizes us to issue 300,000,000 shares of common stock, par value $0.001 per share, and 3,000,000 shares of preferred stock, par value $0.001 per share. As of September 30, 2012, 130,755,585 shares of common stock were outstanding and no shares of preferred stock were outstanding.

The following summary description of our capital stock is based on the provisions of our Restated Certificate, our amended and restated bylaws, or the Bylaws, and applicable provisions of the Delaware General Corporation Law. This information may not be complete in all respects and is qualified entirely by reference to the applicable provisions of our Restated Certificate, our Bylaws and the

Delaware General Corporation Law. For information on how to obtain copies of our Restated Certificate and Bylaws, which are exhibits to the registration statement of which this prospectus is a part, see "Where You Can Find More Information."

Common Stock

The holders of common stock are entitled to one vote for each share held of record on all matters submitted to a vote of the stockholders. Subject to preferences that may be applicable to any outstanding shares of the preferred stock, the holders of common stock are entitled to receive ratably such dividends as may be declared by the board of directors out of legally available funds. Upon our liquidation, dissolution or winding up, holders of our common stock are entitled to share ratably in all assets remaining after payment of liabilities and the liquidation preferences of any outstanding shares of preferred stock. Holders of common stock have no preemptive rights and no right to convert their common stock into any other securities. There are no redemption provisions applicable to the common stock. All outstanding shares of common stock are, and all shares of common stock to be outstanding upon the closing of this offering will be, fully paid and nonassessable.

Additional shares of authorized common stock may be issued, as authorized by our board of directors from time to time, without stockholder approval, except as may be required by applicable stock exchange requirements.

Preferred Stock

Pursuant to our Restated Certificate, our board of directors has the authority, without further action by our stockholders, to issue up to 3,000,000 shares of preferred stock in one or more series and to fix the designations, powers, preferences, privileges and relative participating, optional or special rights and the qualifications, limitations or restrictions thereof, including dividend rights, conversion rights, voting rights, terms of redemption and liquidation preferences, any or all of which may be greater than the rights of the common stock. The board of directors, without stockholder approval, can issue preferred stock with voting, conversion or other rights that could adversely affect the voting power and other rights of the holders of common stock. Preferred stock could thus be issued quickly with terms calculated to delay or prevent a change in control of our company or make removal of management more difficult. Additionally, the issuance of preferred stock may have the effect of decreasing the market price of the common stock and may adversely affect the voting power of holders of common stock and reduce the likelihood that common stockholders will receive dividend payments and payments upon liquidation.

Our board of directors will fix the rights, preferences, privileges, qualifications and restrictions of the preferred stock of each series that we sell under this prospectus and applicable prospectus supplements in the certificate of designation relating to that series. We will incorporate by reference into the registration statement of which this prospectus is a part the form of any certificate of designation that describes the terms of the series of preferred stock we are offering before the issuance of the related series of preferred stock. This description will include:

the title and stated value;

the number of shares we are offering;

the liquidation preference per share;

the purchase price per share;

the dividend rate per share, dividend period and payment dates and method of calculation for dividends;

whether dividends will be cumulative or non-cumulative and, if cumulative, the date from which dividends will accumulate;

our right, if any, to defer payment of dividends and the maximum length of any such deferral period;

the procedures for any auction and remarketing, if any;

the provisions for a sinking fund, if any;

the provisions for redemption or repurchase, if applicable, and any restrictions on our ability to exercise those redemption and repurchase rights;

any listing of the preferred stock on any securities exchange or market;

whether the preferred stock will be convertible into our common stock or other securities of ours, including warrants, and, if applicable, the conversion period, the conversion price, or how it will be calculated, and under what circumstances it may be adjusted;

whether the preferred stock will be exchangeable for debt securities, and, if applicable, the exchange period, the exchange price, or how it will be calculated, and under what circumstances it may be adjusted;

voting rights, if any, of the preferred stock;

preemption rights, if any;

restrictions on transfer, sale or other assignment, if any;

a discussion of any material or special United States federal income tax considerations applicable to the preferred stock;

the relative ranking and preferences of the preferred stock as to dividend rights and rights if we liquidate, dissolve or wind up our affairs;

any limitations on issuances of any class or series of preferred stock ranking senior to or on a parity with the series of preferred stock being issued as to dividend rights and rights if we liquidate, dissolve or wind up our affairs; and

any other specific terms, rights, preferences, privileges, qualifications or restrictions of the preferred stock.

When we issue shares of preferred stock under this prospectus, the shares will be fully paid and nonassessable and will not have, or be subject to, any preemptive or similar rights.

Unless we specify otherwise in the applicable prospectus supplement, the preferred stock will rank, with respect to dividends and upon our liquidation, dissolution or winding up:

senior to all classes or series of our common stock and to all of our equity securities ranking junior to the preferred stock;

on a parity with all of our equity securities the terms of which specifically provide that the equity securities rank on a parity with the preferred stock; and

junior to all of our equity securities the terms of which specifically provide that the equity securities rank senior to the preferred stock.

The term "equity securities" does not include convertible debt securities.

The General Corporation Law of the State of Delaware, the state of our incorporation, provides that the holders of preferred stock will have the right to vote separately as a class on any proposal involving fundamental changes in the rights of holders of that preferred stock. This right is in addition to any voting rights that may be provided for in the applicable certificate of designation.

Anti-takeover Effects of Provisions of Charter Documents and Delaware Law

Charter Documents. Our Restated Certificate and Bylaws contain provisions that could discourage potential takeover attempts and make it more difficult for stockholders to change management, which could adversely affect the market place of our common stock.

Our Restated Certificate limits the personal liability for monetary damages for breach of fiduciary duty of our directors to Geron and our stockholders to the fullest extent permitted by the Delaware General Corporation Law. The inclusion of this provision in our Restated Certificate may reduce the likelihood of derivative litigation against directors and may discourage or deter stockholders or management from bringing a lawsuit against directors for breach of their fiduciary duty.

Our Restated Certificate provides that all stockholder action must be effected at a meeting of stockholders and not by a consent in writing. In addition, our Bylaws provide that special meetings of stockholders may only be called by the board of directors pursuant to a resolution adopted by a majority of the total number of authorized directors, the chairman of the board of directors, the chief executive officer or president (in the absence of a chief executive officer), or at the request in writing of stockholders owning a majority of the amount of our entire capital stock issued and outstanding and entitled to vote. Finally, our Bylaws establish procedures, including advance notice procedures, with regard to the nomination of candidates for election as directors and stockholder proposals.

Our Bylaws provides for the board of directors to be divided into three classes of directors, with each class as nearly equal in number as possible, serving staggered three-year terms. As a result, approximately one-third of the board of directors will be elected each year. The classified board provision could have the effect of discouraging a third party from making a tender offer or attempting to obtain control of us. In addition, the classified board provision could delay stockholders who do not agree with the policies of the board of directors from removing a majority of the board of directors for two years.

Delaware Law. We are subject to Section 203 of the Delaware General Corporation Law. Section 203 generally prohibits a public Delaware corporation such as us from engaging in a "business combination" with an "interested stockholder" for a period of three years following the time that the stockholder became an interested stockholder, unless:

prior to the time the stockholder became an interested stockholder, the board of directors of the corporation approved either the business combination or the transaction which resulted in the stockholder becoming an interested stockholder;

upon consummation of the transaction which resulted in the stockholder becoming an interested stockholder, the interested stockholder owned at least 85% of the voting stock of the corporation outstanding at the time the transaction commenced, excluding for purposes of determining the number of shares outstanding (a) shares owned by persons who are directors and also officers and (b) employee stock plans in which employee participants do not have the right to determine confidentially whether shares held subject to the plan will be tendered in a tender or exchange offer; or

at or subsequent to the time the stockholder became an interested stockholder, the business combination is approved by the board and authorized at an annual or special meeting of stockholders, and not by written consent, by the affirmative vote of at least $66^{2}/_{3}\%$ of the outstanding voting stock which is not owned by the interested stockholder.

Section 203 defines a business combination to include:

any merger or consolidation involving the corporation and the interested stockholder;

any sale, lease, exchange, mortgage, pledge, transfer or other disposition (in one transaction or a series of transactions) involving the interested stockholder of 10% or more of the assets of the corporation (or its majority-owned subsidiary);

subject to exceptions, any transaction that results in the issuance or transfer by the corporation of any stock of the corporation to the interested stockholder;

subject to exceptions, any transaction involving the corporation that has the effect, directly or indirectly, of increasing the proportionate share of the stock or any class or series of the corporation beneficially owned by the interested stockholder; and

the receipt by the interested stockholder of the benefit, directly or indirectly (except proportionately as a stockholder of such corporation), of any loans, advances, guarantees, pledges or other financial benefits, other than certain benefits set forth in Section 203, provided by or through the corporation.

In general, Section 203 defines an interested stockholder as any entity or person beneficially owning 15% or more of the outstanding voting stock of the corporation and any entity or person that is an affiliate or associate of such entity or person.

Although Section 203 permits us to elect not to be governed by its provisions, we have not made this election. As a result of the application of Section 203, potential acquirers of Geron may be discouraged from attempting to effect an acquisition transaction with us, thereby possibly depriving holders of our securities of certain opportunities to sell or otherwise dispose of such securities at above-market prices pursuant to such transactions.

Transfer Agent and Registrar

The transfer agent and registrar for the common stock is Computershare Trust Company, N.A. The transfer agent for any series of preferred stock that we may offer under this prospectus will be named and described in the prospectus supplement for that series.

Listing on The NASDAQ Global Select Market

Our common stock is listed on The NASDAQ Global Select Market under the symbol "GERN."

DESCRIPTION OF DEBT SECURITIES

We may issue debt securities from time to time, in one or more series, as either senior or subordinated debt or as senior or subordinated convertible debt. While the terms we have summarized below will apply generally to any debt securities that we may offer under this prospectus, we will describe the particular terms of any debt securities that we may offer in more detail in the applicable prospectus supplement. The terms of any debt securities offered under a prospectus supplement may differ from the terms described below. Unless the context requires otherwise, whenever we refer to the indenture, we also are referring to any supplemental indentures that specify the terms of a particular series of debt securities.

We will issue the debt securities under the indenture that we will enter into with the trustee named in the indenture. The indenture will be qualified under the Trust Indenture Act of 1939, as amended, or the Trust Indenture Act. We have filed the form of indenture as an exhibit to the registration statement of which this prospectus is a part, and supplemental indentures and forms of debt securities containing the terms of the debt securities being offered will be filed as exhibits to the registration statement of which this prospectus is a part or will be incorporated by reference from reports that we file with the SEC.

The following summary of material provisions of the debt securities and the indenture is subject to, and qualified in its entirety by reference to, all of the provisions of the indenture applicable to a particular series of debt securities. We urge you to read the applicable prospectus supplements and any related free writing prospectuses related to the debt securities that we may offer under this prospectus, as well as the complete indenture that contains the terms of the debt securities.

General

The indenture does not limit the amount of debt securities that we may issue. It provides that we may issue debt securities up to the principal amount that we may authorize and may be in any currency or currency unit that we may designate. Except for the limitations on consolidation, merger and sale of all or substantially all of our assets contained in the indenture, the terms of the indenture do not contain any covenants or other provisions designed to give holders of any debt securities protection against changes in our operations and financial condition or transactions involving us.

We may issue the debt securities issued under the indenture as "discount securities," which means they may be sold at a discount below their stated principal amount. These debt securities, as well as other debt securities that are not issued at a discount, may be issued with "original issue discount," or OID, for U.S. federal income tax purposes because of interest payment and other characteristics or terms of the debt securities. Material U.S. federal income tax considerations applicable to debt securities issued with OID will be described in more detail in any applicable prospectus supplement.

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

the title of the series of debt securities;

any limit upon the aggregate principal amount that may be issued;

the maturity date or dates;

the form of the debt securities of the series;

the applicability of any guarantees;

whether or not the debt securities will be secured or unsecured, and the terms of any secured debt;

whether the debt securities rank as senior debt, senior subordinated debt, subordinated debt or any combination thereof, and the terms of any subordination;

if the price (expressed as a percentage of the aggregate principal amount thereof) at which such debt securities will be issued is a price other than the principal amount thereof, the portion of the principal amount thereof payable upon declaration of acceleration of the maturity thereof, or if applicable, the portion of the principal amount of such debt securities that is convertible into another security or the method by which any such portion shall be determined;

the interest rate or rates, which may be fixed or variable, or the method for determining the rate and the date interest will begin to accrue, the dates interest will be payable and the regular record dates for interest payment dates or the method for determining such dates;

our right, if any, to defer payment of interest and the maximum length of any such deferral period;

if applicable, the date or dates after which, or the period or periods during which, and the price or prices at which, we may, at our option, redeem the series of debt securities pursuant to any optional or provisional redemption provisions and the terms of those redemption provisions;

the date or dates, if any, on which, and the price or prices at which we are obligated, pursuant to any mandatory sinking fund or analogous fund provisions or otherwise, to redeem, or at the holder's option to purchase, the series of debt securities and the currency or currency unit in which the debt securities are payable;

the denominations in which we will issue the series of debt securities, if other than denominations of $1,000 and any integral multiple thereof;

any and all terms, if applicable, relating to any auction or remarketing of the debt securities of that series and any security for our obligations with respect to such debt securities and any other terms which may be advisable in connection with the marketing of debt securities of that series;

whether the debt securities of the series shall be issued in whole or in part in the form of a global security or securities; the terms and conditions, if any, upon which such global security or securities may be exchanged in whole or in part for other individual securities; and the depositary for such global security or securities;

if applicable, the provisions relating to conversion or exchange of any debt securities of the series and the terms and conditions upon which such debt securities will be so convertible or exchangeable, including the conversion or exchange price, as applicable, or how it will be calculated and may be adjusted, any mandatory or optional (at our option or the holders' option) conversion or exchange features, the applicable conversion or exchange period and the manner of settlement for any conversion or exchange;

if other than the full principal amount thereof, the portion of the principal amount of debt securities of the series which shall be payable upon declaration of acceleration of the maturity thereof;

additions to or changes in the covenants applicable to the particular debt securities being issued, including, among others, the consolidation, merger or sale covenant;

additions to or changes in the events of default with respect to the securities and any change in the right of the trustee or the holders to declare the principal, premium, if any, and interest, if any, with respect to such securities to be due and payable;

additions to or changes in or deletions of the provisions relating to covenant defeasance and legal defeasance;

additions to or changes in the provisions relating to satisfaction and discharge of the indenture;

additions to or changes in the provisions relating to the modification of the indenture both with and without the consent of holders of debt securities issued under the indenture;

the currency of payment of debt securities if other than U.S. dollars and the manner of determining the equivalent amount in U.S. dollars;

whether interest will be payable in cash or additional debt securities at our or the holders' option and the terms and conditions upon which the election may be made;

the terms and conditions, if any, upon which we will pay amounts in addition to the stated interest, premium, if any and principal amounts of the debt securities of the series to any holder that is not a "United States person" for federal tax

purposes;

a discussion of any material or special United States federal income tax considerations applicable to the debt securities being offered;

any restrictions on transfer, sale or assignment of the debt securities of the series; and

any other specific terms, preferences, rights or limitations of, or restrictions on, the debt securities, any other additions or changes in the provisions of the indenture, and any terms that may be required by us or advisable under applicable laws or regulations.

Conversion or Exchange Rights

We will set forth in the prospectus supplement the terms on which a series of debt securities may be convertible into or exchangeable for our common stock or our other securities or other property or assets. We will include provisions as to settlement upon conversion or exchange and whether conversion or exchange is mandatory, at the option of the holder or at our option. We may include provisions pursuant to which the number of shares of our common stock or our other securities or units of other property or assets that the holders of the series of debt securities receive would be subject to adjustment.

Consolidation, Merger or Sale

Unless we provide otherwise in the prospectus supplement applicable to a particular series of debt securities, the indenture will not contain any covenant that restricts our ability to merge or consolidate, or sell, convey, transfer or otherwise dispose of all or substantially all of our assets. However, any successor to or acquirer of such assets must assume all of our obligations under the indenture or the debt securities, as appropriate.

Events of Default Under the Indenture

Unless we provide otherwise in the prospectus supplement applicable to a particular series of debt securities, the following are events of default under the indenture with respect to any series of debt securities that we may issue:

if we fail to pay any installment of interest on any series of debt securities, as and when the same becomes due and payable, and such default continues for a period of 90 days; provided, however, that a valid extension of an interest payment period by us in accordance with the terms of any indenture supplemental thereto shall not constitute a default in the payment of interest for this purpose;

if we fail to pay the principal of, or premium, if any, on any series of debt securities as and when the same becomes due and payable whether at maturity, upon redemption, by declaration or otherwise, or in any payment required by any sinking or analogous fund established with respect to such series; provided, however, that a valid extension of the maturity of such debt securities in accordance with the terms of any indenture supplemental thereto shall not constitute a default in the payment of principal or premium, if any;

if we fail to observe or perform any other covenant or agreement contained in the debt securities or the indenture, other than a covenant specifically relating to another series of debt securities, and our failure continues for 90 days after we receive written notice of such failure, requiring the same to be remedied and stating that such is a notice of default thereunder, from the trustee or holders of at least 25% in aggregate principal amount of the outstanding debt securities of the applicable series; and

if specified events of bankruptcy, insolvency or reorganization occur.

If an event of default with respect to debt securities of any series occurs and is continuing, other than an event of default specified in the last bullet point above, the trustee or the holders of at least 25% in aggregate principal amount of the outstanding debt securities of that series, by notice to us in writing, and to the trustee if notice is given by such holders, may declare the unpaid principal premium, if any, and accrued interest, if any, due and payable immediately. If an event of default specified in the

last bullet point above occurs with respect to us, the principal amount and accrued interest, if any, of each issue of debt securities then outstanding shall be due and payable without any notice or other action on the part of the trustee or any holder.

The holders of a majority in principal amount of the outstanding debt securities of an affected series may waive any default or event of default with respect to the series and its consequences, except defaults or events of default regarding payment of principal, premium, if any, or interest, unless we have cured the default or event of default in accordance with the indenture. Any waiver shall cure the default or event of default.

Subject to the terms of the indenture, if an event of default under an indenture shall occur and be continuing, the trustee will be under no obligation to exercise any of its rights or powers under such indenture at the request or direction of any of the holders of the applicable series of debt securities, unless such holders have offered the trustee reasonable indemnity. The holders of a majority in principal amount of the outstanding debt securities of any series will have the right to direct the time, method and place of conducting any proceeding for any remedy available to the trustee, or exercising any trust or power conferred on the trustee, with respect to the debt securities of that series, provided that:

- the direction so given by the holder is not in conflict with any law or the applicable indenture; and
- subject to its duties under the Trust Indenture Act, the trustee need not take any action that might involve it in personal liability or might be unduly prejudicial to the holders not involved in the proceeding.

A holder of the debt securities of any series will have the right to institute a proceeding under the indenture or to appoint a receiver or trustee, or to seek other remedies only if:

- the holder has given written notice to the trustee of a continuing event of default with respect to that series;
- the holders of at least 25% in aggregate principal amount of the outstanding debt securities of that series have made written request, and such holders have offered reasonable indemnity to the trustee to institute the proceeding as trustee; and
- the trustee does not institute the proceeding, and does not receive from the holders of a majority in aggregate principal amount of the outstanding debt securities of that series other conflicting directions within 90 days after the notice, request and offer.

These limitations do not apply to a suit instituted by a holder of debt securities if we default in the payment of the principal, premium, if any, or interest on, the debt securities.

We will periodically file statements with the trustee regarding our compliance with specified covenants in the indenture.

Modification of Indenture; Waiver

We and the trustee may change an indenture without the consent of any holders with respect to specific matters:

- to cure any ambiguity, defect or inconsistency in the indenture or in the debt securities of any series;
- to comply with the provisions described above under "Description of Debt Securities Consolidation, Merger or Sale;"

to provide for uncertificated debt securities in addition to or in place of certificated debt securities;

to add to our covenants, restrictions, conditions or provisions such new covenants, restrictions, conditions or provisions for the benefit of the holders of all or any series of debt securities, to make the occurrence, or the occurrence and the continuance, of a default in any such additional covenants, restrictions, conditions or provisions an event of default or to surrender any right or power conferred upon us in the indenture;

to add to, delete from or revise the conditions, limitations, and restrictions on the authorized amount, terms, or purposes of issue, authentication and delivery of debt securities, as set forth in the indenture;

to make any change that does not adversely affect the interests of any holder of debt securities of any series in any material respect;

to provide for the issuance of and establish the form and terms and conditions of the debt securities of any series as provided above under "Description of Debt Securities General" to establish the form of any certifications required to be furnished pursuant to the terms of the indenture or any series of debt securities, or to add to the rights of the holders of any series of debt securities;

to evidence and provide for the acceptance of appointment under any indenture by a successor trustee; or

to comply with any requirements of the SEC in connection with the qualification of any indenture under the Trust Indenture Act.

In addition, under the indenture, the rights of holders of a series of debt securities may be changed by us and the trustee with the written consent of the holders of a majority in aggregate principal amount of the outstanding debt securities of each series that is affected. However, unless we provide otherwise in the prospectus supplement applicable to a particular series of debt securities, we and the trustee may make the following changes only with the consent of each holder of any outstanding debt securities affected:

extending the fixed maturity of any debt securities of any series;

reducing the principal amount, reducing the rate of or extending the time of payment of interest, or reducing any premium payable upon the redemption of any series of any debt securities; or

reducing the percentage of debt securities, the holders of which are required to consent to any amendment, supplement, modification or waiver.

Discharge

Each indenture provides that we can elect to be discharged from our obligations with respect to one or more series of debt securities, except for specified obligations, including obligations to:

provide for payment;

register the transfer or exchange of debt securities of the series;

replace stolen, lost or mutilated debt securities of the series;

pay principal of and premium and interest on any debt securities of the series;

maintain paying agencies;

hold monies for payment in trust;

recover excess money held by the trustee;

compensate and indemnify the trustee; and

appoint any successor trustee.

In order to exercise our rights to be discharged, we must deposit with the trustee money or government obligations sufficient to pay all the principal of, any premium, if any, and interest on, the debt securities of the series on the dates payments are due.

Form, Exchange and Transfer

We will issue the debt securities of each series only in fully registered form without coupons and, unless we provide otherwise in the applicable prospectus supplement, in denominations of $1,000 and any integral multiple thereof. The indenture provides that we may issue debt securities of a series in temporary or permanent global form and as book-entry securities that will be deposited with, or on behalf of, The Depository Trust Company, or DTC, or another depositary named by us and identified in a prospectus supplement with respect to that series. To the extent the debt securities of a series are issued in global form and as book-entry, a description of terms relating to any book-entry securities will be set forth in the applicable prospectus supplement.

At the option of the holder, subject to the terms of the indenture and the limitations applicable to global securities described in the applicable prospectus supplement, the holder of the debt securities of any series can exchange the debt securities for other debt securities of the same series, in any authorized denomination and of like tenor and aggregate principal amount.

Subject to the terms of the indenture and the limitations applicable to global securities set forth in the applicable prospectus supplement, holders of the debt securities may present the debt securities for exchange or for registration of transfer, duly endorsed or with the form of transfer endorsed thereon duly executed if so required by us or the security registrar, at the office of the security registrar or at the office of any transfer agent designated by us for this purpose. Unless otherwise provided in the debt securities that the holder presents for transfer or exchange, we will impose no service charge for any registration of transfer or exchange, but we may require payment of any taxes or other governmental charges.

We will name in the applicable prospectus supplement the security registrar, and any transfer agent in addition to the security registrar, that we initially designate for any debt securities. We may at any time designate additional transfer agents or rescind the designation of any transfer agent or approve a change in the office through which any transfer agent acts, except that we will be required to maintain a transfer agent in each place of payment for the debt securities of each series.

If we elect to redeem the debt securities of any series, we will not be required to:

issue, register the transfer of, or exchange any debt securities of that series during a period beginning at the opening of business 15 days before the day of mailing of a notice of redemption of any debt securities that may be selected for redemption and ending at the close of business on the day of the mailing; or

register the transfer of or exchange any debt securities so selected for redemption, in whole or in part, except the unredeemed portion of any debt securities we are redeeming in part.

Information Concerning the Trustee

The trustee, other than during the occurrence and continuance of an event of default under an indenture, undertakes to perform only those duties as are specifically set forth in the applicable indenture. Upon an event of default under an indenture, the trustee must use the same degree of care as a prudent person would exercise or use in the conduct of his or her own affairs. Subject to this provision, the trustee is under no obligation to exercise any of the powers given it by the indenture at the request of any holder of debt securities unless it is offered reasonable security and indemnity against the costs, expenses and liabilities that it might incur.

Payment and Paying Agents

Unless we otherwise indicate in the applicable prospectus supplement, we will make payment of the interest on any debt securities on any interest payment date to the person in whose name the debt securities, or one or more predecessor securities, are registered at the close of business on the regular record date for the interest.

We will pay principal of and any premium and interest on the debt securities of a particular series at the office of the paying agents designated by us, except that unless we otherwise indicate in the applicable prospectus supplement, we will make interest payments by check that we will mail to the holder or by wire transfer to certain holders. Unless we otherwise indicate in the applicable prospectus supplement, we will designate the corporate trust office of the trustee as our sole paying agent for payments with respect to debt securities of each series. We will name in the applicable prospectus supplement any other paying agents that we initially designate for the debt securities of a particular series. We will maintain a paying agent in each place of payment for the debt securities of a particular series.

All money we pay to a paying agent or the trustee for the payment of the principal of or any premium or interest on any debt securities that remains unclaimed at the end of two years after such principal, premium or interest has become due and payable will be repaid to us, and the holder of the debt security thereafter may look only to us for payment thereof.

Governing Law

The indenture and the debt securities will be governed by and construed in accordance with the laws of the State of New York, except to the extent that the Trust Indenture Act of 1939 is applicable.

DESCRIPTION OF WARRANTS

The following description, together with the additional information we may include in any applicable prospectus supplement and free writing prospectus, summarizes the material terms and provisions of the warrants that we may offer under this prospectus, which may consist of warrants to purchase common stock, preferred stock or debt securities and may be issued in one or more series. Warrants may be offered independently or in combination with common stock, preferred stock or debt securities offered by any prospectus supplement. While the terms we have summarized below will apply generally to any warrants that we may offer under this prospectus, we will describe the particular terms of any series of warrants in more detail in the applicable prospectus supplement. The following description of warrants will apply to the warrants offered by this prospectus unless we provide otherwise in the applicable prospectus supplement. The applicable prospectus supplement for a particular series of warrants may specify different or additional terms.

We have filed forms of the warrant agreements and forms of warrant certificates containing the terms of the warrants that may be offered as exhibits to the registration statement of which this prospectus is a part. We will file as exhibits to the registration statement of which this prospectus is a

part, or will incorporate by reference from reports that we file with the SEC, the form of warrant and/or the warrant agreement and warrant certificate, as applicable, that contain the terms of the particular series of warrants we are offering, and any supplemental agreements, before the issuance of such warrants. The following summaries of material terms and provisions of the warrants are subject to, and qualified in their entirety by reference to, all the provisions of the form of warrant and/or the warrant agreement and warrant certificate, as applicable, and any supplemental agreements applicable to a particular series of warrants that we may offer under this prospectus. We urge you to read the applicable prospectus supplement related to the particular series of warrants that we may offer under this prospectus, as well as any related free writing prospectus, and the complete form of warrant and/or the warrant agreement and warrant certificate, as applicable, and any supplemental agreements, that contain the terms of the warrants.

General

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

the offering price and aggregate number of warrants offered;

the currency for which the warrants may be purchased;

if applicable, the designation and terms of the securities with which the warrants are issued and the number of warrants issued with each such security or each principal amount of such security;

in the case of warrants to purchase debt securities, the principal amount of debt securities purchasable upon exercise of one warrant and the price at, and currency in which, this principal amount of debt securities may be purchased upon such exercise;

in the case of warrants to purchase common stock or preferred stock, the number of shares of common stock or preferred stock, as the case may be, purchasable upon the exercise of one warrant and the price at which these shares may be purchased upon such exercise;

the effect of any merger, consolidation, sale or other disposition of our business on the warrant agreements and the warrants;

the terms of any rights to redeem or call the warrants;

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

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

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

a discussion of material or special U.S. federal income tax considerations, if any, of holding or exercising the warrants;

the terms of the securities issuable upon exercise of the warrants; and

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

Before exercising their warrants, holders of warrants will not have any of the rights of holders of the securities purchasable upon such exercise, including:

- in the case of warrants to purchase debt securities, the right to receive payments of principal of, or premium, if any, or interest on, the debt securities purchasable upon exercise or to enforce covenants in the applicable indenture; or

in the case of warrants to purchase common stock or preferred stock, the right to receive dividends, if any, or payments upon our liquidation, dissolution or winding up or to exercise voting rights, if any.

Exercise of Warrants

Each warrant will entitle the holder to purchase the securities that we specify in the applicable prospectus supplement at the exercise price that we describe in the applicable prospectus supplement. The warrants may be exercised as set forth in the prospectus supplement relating to the warrants offered. Unless we otherwise specify in the applicable prospectus supplement, warrants may be exercised at any time up to the close of business on the expiration date set forth in the prospectus supplement relating to the warrants offered thereby. After the close of business on the expiration date, unexercised warrants will become void.

Upon receipt of payment and the warrant or warrant certificate, as applicable, properly completed and duly executed at the corporate trust office of the warrant agent, if any, or any other office, including ours, indicated in the prospectus supplement, we will, as soon as practicable, issue and deliver the securities purchasable upon such exercise. If less than all of the warrants (or the warrants represented by such warrant certificate) are exercised, a new warrant or a new warrant certificate, as applicable, will be issued for the remaining warrants.

Governing Law

Unless we provide otherwise in the applicable prospectus supplement, the warrants and any warrant agreements will be governed by and construed in accordance with the laws of the State of New York.

Enforceability of Rights by Holders of Warrants

Each warrant agent, if any, will act solely as our agent under the applicable warrant agreement and will not assume any obligation or relationship of agency or trust with any holder of any warrant. A single bank or trust company may act as warrant agent for more than one issue of warrants. A warrant agent will have no duty or responsibility in case of any default by us under the applicable warrant agreement or warrant, including any duty or responsibility to initiate any proceedings at law or otherwise, or to make any demand upon us. Any holder of a warrant may, without the consent of the related warrant agent or the holder of any other warrant, enforce by appropriate legal action its right to exercise, and receive the securities purchasable upon exercise of, its warrants.

Outstanding Warrants

As of September 30, 2012, there were outstanding warrants to purchase 1,644,275 shares of our common stock. The warrants may be exercised for cash or, under certain circumstances with respect to some of these warrants, on a cashless basis, in which case we will deliver, upon exercise, the number of shares with respect to which the warrant is being exercised reduced by a number of shares having a value (as determined in accordance with the terms of the applicable warrant) equal to the aggregate exercise price of the shares with respect to which the warrant is being exercised.

LEGAL OWNERSHIP OF SECURITIES

We can issue securities in registered form or in the form of one or more global securities. We describe global securities in greater detail below. We refer to those persons who have securities registered in their own names on the books that we or any applicable trustee, depositary or warrant agent maintain for this purpose as the "holders" of those securities. These persons are the legal holders of the securities. We refer to those persons who, indirectly through others, own beneficial interests in

securities that are not registered in their own names, as "indirect holders" of those securities. As we discuss below, indirect holders are not legal holders, and investors in securities issued in book-entry form or in street name will be indirect holders.

Book-Entry Holders

We may issue securities in book-entry form only, as we will specify in the applicable prospectus supplement. This means securities may be represented by one or more global securities registered in the name of a financial institution that holds them as depositary on behalf of other financial institutions that participate in the depositary's book-entry system. These participating institutions, which are referred to as participants, in turn, hold beneficial interests in the securities on behalf of themselves or their customers.

Only the person in whose name a security is registered is recognized as the holder of that security. Securities issued in global form will be registered in the name of the depositary or its participants. Consequently, for securities issued in global form, we will recognize only the depositary as the holder of the securities, and we will make all payments on the securities to the depositary. The depositary passes along the payments it receives to its participants, which in turn pass the payments along to their customers who are the beneficial owners. The depositary and its participants do so under agreements they have made with one another or with their customers; they are not obligated to do so under the terms of the securities.

As a result, investors in a book-entry security will not own securities directly. Instead, they will own beneficial interests in a global security, through a bank, broker or other financial institution that participates in the depositary's book-entry system or holds an interest through a participant. As long as the securities are issued in global form, investors will be indirect holders, and not holders, of the securities.

Street Name Holders

We may terminate a global security or issue securities in non-global form. In these cases, investors may choose to hold their securities in their own names or in "street name." Securities held by an investor in street name would be registered in the name of a bank, broker or other financial institution that the investor chooses, and the investor would hold only a beneficial interest in those securities through an account he or she maintains at that institution.

For securities held in street name, we will recognize only the intermediary banks, brokers and other financial institutions in whose names the securities are registered as the holders of those securities, and we will make all payments on those securities to them. These institutions pass along the payments they receive to their customers who are the beneficial owners, but only because they agree to do so in their customer agreements or because they are legally required to do so. Investors who hold securities in street name will be indirect holders, not holders, of those securities.

Legal Holders

Our obligations, as well as the obligations of any applicable trustee and of any third parties employed by us or a trustee, run only to the legal holders of the securities. We do not have obligations to investors who hold beneficial interests in global securities, in street name or by any other indirect means. This will be the case whether an investor chooses to be an indirect holder of a security or has no choice because we are issuing the securities only in global form.

For example, once we make a payment or give a notice to the holder, we have no further responsibility for the payment or notice even if that holder is required, under agreements with depositary participants or customers or by law, to pass it along to the indirect holders but does not do

so. Similarly, we may want to obtain the approval of the holders to amend an indenture, to relieve us of the consequences of a default or of our obligation to comply with a particular provision of the indenture or for other purposes. In such an event, we would seek approval only from the holders, and not the indirect holders, of the securities. Whether and how the holders contact the indirect holders is up to the holders.

Special Considerations for Indirect Holders

If you hold securities through a bank, broker or other financial institution, either in book-entry form or in street name, you should check with your own institution to find out:

- the performance of third party service providers;
- how it handles securities payments and notices;
- whether it imposes fees or charges;
- how it would handle a request for the holders' consent, if ever required;
- whether and how you can instruct it to send you securities registered in your own name so you can be a holder, if that is permitted in the future;
- how it would exercise rights under the securities if there were a default or other event triggering the need for holders to act to protect their interests; and
- if the securities are in book-entry form, how the depositary's rules and procedures will affect these matters.

Global Securities

A global security is a security that represents one or any other number of individual securities held by a depositary. Generally, all securities represented by the same global securities will have the same terms.

Each security issued in book-entry form will be represented by a global security that we deposit with and register in the name of a financial institution or its nominee that we select. The financial institution that we select for this purpose is called the depositary. Unless we specify otherwise in the applicable prospectus supplement, DTC will be the depositary for all securities issued in book-entry form.

A global security may not be transferred to or registered in the name of anyone other than the depositary, its nominee or a successor depositary, unless special termination situations arise. We describe those situations below under the section entitled "Special Situations When a Global Security Will Be Terminated" in this prospectus. As a result of these arrangements, the depositary, or its nominee, will be the sole registered owner and holder of all securities represented by a global security, and investors will be permitted to own only beneficial interests in a global security. Beneficial interests must be held by means of an account with a broker, bank or other financial institution that in turn has an account with the depositary or with another institution that does. Thus, an investor whose security is represented by a global security will not be a holder of the security, but only an indirect holder of a beneficial interest in the global security.

If the prospectus supplement for a particular security indicates that the security will be issued in global form only, then the security will be represented by a global security at all times unless and until the global security is terminated. If termination occurs, we may issue the securities through another book-entry clearing system or decide that the securities may no longer be held through any book-entry clearing system.

Special Considerations for Global Securities

The rights of an indirect holder relating to a global security will be governed by the account rules of the investor's financial institution and of the depositary, as well as general laws relating to securities transfers. We do not recognize an indirect holder as a holder of securities and instead deal only with the depositary that holds the global security.

If securities are issued only in the form of a global security, an investor should be aware of the following:

- an investor cannot cause the securities to be registered in his or her name, and cannot obtain non-global certificates for his or her interest in the securities, except in the special situations we describe below;
- an investor will be an indirect holder and must look to his or her own bank or broker for payments on the securities and protection of his or her legal rights relating to the securities, as we describe above;
- an investor may not be able to sell interests in the securities to some insurance companies and to other institutions that are required by law to own their securities in non-book-entry form;
- an investor may not be able to pledge his or her interest in a global security in circumstances where certificates representing the securities must be delivered to the lender or other beneficiary of the pledge in order for the pledge to be effective;
- the depositary's policies, which may change from time to time, will govern payments, transfers, exchanges and other matters relating to an investor's interest in a global security;
- we and any applicable trustee have no responsibility for any aspect of the depositary's actions or for its records of ownership interests in a global security, nor do we or any applicable trustee supervise the depositary in any way;
- the depositary may, and we understand that DTC will, require that those who purchase and sell interests in a global security within its book-entry system use immediately available funds, and your broker or bank may require you to do so as well; and
- financial institutions that participate in the depositary's book-entry system, and through which an investor holds its interest in a global security, may also have their own policies affecting payments, notices and other matters relating to the securities.

There may be more than one financial intermediary in the chain of ownership for an investor. We do not monitor and are not responsible for the actions of any of those intermediaries.

Special Situations When a Global Security Will Be Terminated

In a few special situations described below, the global security will terminate and interests in it will be exchanged for physical certificates representing those interests. After that exchange, the choice of whether to hold securities directly or in street name will be up to the investor. Investors must consult their own banks or brokers to find out how to have their interests in securities transferred to their own name, so that they will be direct holders. We have described the rights of holders and street name investors above.

Unless we provide otherwise in the applicable prospectus supplement, the global security will terminate when the following special situations occur:

- if the depositary notifies us that it is unwilling, unable or no longer qualified to continue as depositary for that global security and we do not appoint another institution to act as depositary within 90 days;

if we notify any applicable trustee that we wish to terminate that global security; or

if an event of default has occurred with regard to securities represented by that global security and has not been cured or waived.

The applicable prospectus supplement may also list additional situations for terminating a global security that would apply only to the particular series of securities covered by the applicable prospectus supplement. When a global security terminates, the depositary, and not we or any applicable trustee, is responsible for deciding the names of the institutions that will be the initial direct holders.

PLAN OF DISTRIBUTION

We may sell the securities from time to time pursuant to underwritten public offerings, negotiated transactions, block trades or a combination of these methods. We may sell the securities to or through underwriters or dealers, through agents, or directly to one or more purchasers. We may distribute securities from time to time in one or more transactions:

at a fixed price or prices, which may be changed;

at market prices prevailing at the time of sale;

at prices related to such prevailing market prices; or

at negotiated prices.

A prospectus supplement or supplements (and any related free writing prospectus that we may authorize to be provided to you) will describe the terms of the offering of the securities, including, to the extent applicable:

the name or names of the underwriters, if any;

the purchase price of the securities or other consideration therefor, and the proceeds, if any, we will receive from the sale;

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

any agency fees or underwriting discounts and other items constituting agents' or underwriters' compensation;

any public offering price;

any discounts or concessions allowed or reallowed or paid to dealers; and

any securities exchange or market on which the securities may be listed.

Only underwriters named in the prospectus supplement will be underwriters of the securities offered by the prospectus supplement.

If underwriters are used in the sale, they will acquire the securities for their own account and may resell the securities from time to time in one or more transactions at a fixed public offering price or at varying prices determined at the time of sale. The obligations of the underwriters to purchase the securities will be subject to the conditions set forth in the applicable underwriting agreement. We may offer the securities to the

public through underwriting syndicates represented by managing underwriters or by underwriters without a syndicate. Subject to certain conditions, the underwriters will be obligated to purchase all of the securities offered by the prospectus supplement, other than securities covered by any over-allotment option. Any public offering price and any discounts or concessions allowed or reallowed or paid to dealers may change from time to time. We may use underwriters with whom we have a material relationship. We will describe in the prospectus supplement, naming the underwriter, the nature of any such relationship.

We may sell securities directly or through agents we designate from time to time. We will name any agent involved in the offering and sale of securities and we will describe any commissions we will pay the agent in the prospectus supplement. Unless the prospectus supplement states otherwise, our agent will act on a best-efforts basis for the period of its appointment.

We may authorize agents or underwriters to solicit offers by certain types of institutional investors to purchase securities from us at the public offering price set forth in the prospectus supplement pursuant to delayed delivery contracts providing for payment and delivery on a specified date in the future. We will describe the conditions to these contracts and the commissions we must pay for solicitation of these contracts in the prospectus supplement.

We may provide agents and underwriters with indemnification against civil liabilities, including liabilities under the Securities Act, or contribution with respect to payments that the agents or underwriters may make with respect to these liabilities. Agents and underwriters may engage in transactions with, or perform services for, us in the ordinary course of business.

All securities we may offer, other than common stock, will be new issues of securities with no established trading market. Any underwriters may make a market in these securities, but will not be obligated to do so and may discontinue any market making at any time without notice. We cannot guarantee the liquidity of the trading markets for any securities.

Any underwriter may engage in over-allotment, stabilizing transactions, short-covering transactions and penalty bids in accordance with Regulation M under the Exchange Act. Over-allotment involves sales in excess of the offering size, which create a short position. Stabilizing transactions permit bids to purchase the underlying security so long as the stabilizing bids do not exceed a specified maximum price. Syndicate-covering or other short-covering transactions involve purchases of the securities, either through exercise of the over-allotment option or in the open market after the distribution is completed, to cover short positions. Penalty bids permit the underwriters to reclaim a selling concession from a dealer when the securities originally sold by the dealer are purchased in a stabilizing or covering transaction to cover short positions. Those activities may cause the price of the securities to be higher than it would otherwise be. If commenced, the underwriters may discontinue any of the activities at any time.

Any underwriters that are qualified market makers on The NASDAQ Global Select Market may engage in passive market making transactions in the common stock on The NASDAQ Global Select Market in accordance with Regulation M under the Exchange Act, during the business day prior to the pricing of the offering, before the commencement of offers or sales of the common stock. Passive market makers must comply with applicable volume and price limitations and must be identified as passive market makers. In general, a passive market maker must display its bid at a price not in excess of the highest independent bid for such security; if all independent bids are lowered below the passive market maker's bid, however, the passive market maker's bid must then be lowered when certain purchase limits are exceeded. Passive market making may stabilize the market price of the securities at a level above that which might otherwise prevail in the open market and, if commenced, may be discontinued at any time.

In compliance with guidelines of the Financial Industry Regulatory Authority, or FINRA, the maximum consideration or discount to be received by any FINRA member or independent broker dealer may not exceed 8% of the aggregate amount of the securities offered pursuant to this prospectus and the applicable prospectus supplement.

LEGAL MATTERS

Unless otherwise indicated in the applicable prospectus supplement, the validity of the securities offered by this prospectus, and any supplement thereto, will be passed upon for us by Cooley LLP, Palo Alto, California.

EXPERTS

The consolidated financial statements of Geron Corporation appearing in Geron's Annual Report on Form 10-K for the year ended December 31, 2011, and the effectiveness of internal control over financial reporting as of December 31, 2011 have been audited by Ernst & Young LLP, independent registered public accounting firm, as set forth in their reports thereon, included therein, and incorporated herein by reference. Such consolidated financial statements are incorporated herein by reference in reliance upon such reports given on the authority of such firm as experts in accounting and auditing.

WHERE YOU CAN FIND MORE INFORMATION

This prospectus is part of the registration statement on Form S-3 we filed with the SEC under the Securities Act and does not contain all the information set forth in the registration statement. Whenever a reference is made in this prospectus to any of our contracts, agreements or other documents, the reference may not be complete and you should refer to the exhibits that are a part of the registration statement or the exhibits to the reports or other documents incorporated by reference into this prospectus for a copy of such contract, agreement or other document. Because we are subject to the information and reporting requirements of the Exchange Act, we file annual, quarterly and current reports, proxy statements and other information with the SEC. Our SEC filings are available to the public over the Internet at the SEC's website at http://www.sec.gov. You may also read and copy any document we file at the SEC's Public Reference Room at 100 F Street, N.E., Washington, D.C. 20549. Please call the SEC at 1-800-SEC-0330 for further information on the operation of the Public Reference Room.

INCORPORATION OF CERTAIN INFORMATION BY REFERENCE

The SEC allows us to "incorporate by reference" information from other documents that we file with it, which means that we can disclose important information to you by referring you to those documents. The information incorporated by reference is considered to be part of this prospectus. Information in this prospectus supersedes information incorporated by reference that we filed with the SEC prior to the date of this prospectus, while information that we file later with the SEC will automatically update and supersede the information in this prospectus. We incorporate by reference into this prospectus and the registration statement of which this prospectus is a part the information or documents listed below that we have filed with the SEC (Commission File No. 000-20859):

Geron's Annual Report on Form 10-K for the year ended December 31, 2011, filed with the SEC on March 7, 2012, as amended by our Annual Report on Form 10-K/A, Amendment No. 1, for the year ended December 31, 2011, filed with the SEC on March 27, 2012;

Geron's Quarterly Reports on Form 10-Q for the quarterly period ended March 31, 2012, filed with the SEC on May 7, 2012, and for the quarterly period ended June 30, 2012, filed with the SEC on August 3, 2012;

Geron's Current Reports on Form 8-K filed with the SEC on January 5, 2012 (other than the information furnished under Item 7.01 and the related exhibit), February 1, 2012, March 16, 2012, April 4, 2012, May 1, 2012, May 18, 2012, June 8, 2012, July 18, 2012, July 31, 2012 (other than the information furnished under Item 2.02 and the related exhibit), August 17, 2012,

September 10, 2012, September 17, 2012 (other than the information furnished under Item 7.01 and the related exhibit), September 28, 2012 and October 9, 2012;

the information specifically incorporated by reference into Geron's 2011 Annual Report on Form 10-K referred to above from Geron's revised definitive proxy statement relating to Geron's 2012 annual meeting of stockholders, filed with the SEC on April 24, 2012; and

the description of Geron's common stock set forth in Geron's registration statement on Form 8-A, filed with the SEC on June 13, 1996.

We also incorporate by reference any future filings (other than current reports furnished under Item 2.02 or Item 7.01 of Form 8-K and exhibits filed on such form that are related to such items unless such Form 8-K expressly provides to the contrary) made with the SEC pursuant to Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act, including those made after the date of the initial filing of the registration statement of which this prospectus is a part and prior to effectiveness of such registration statement, until we file a post-effective amendment that indicates the termination of the offering of the securities covered by this prospectus and will become a part of this prospectus from the date that such documents are filed with the SEC. Information in such future filings updates and supplements the information provided in this prospectus. Any statements in any such future filings will automatically be deemed to modify and supersede any information in any document we previously filed with the SEC that is incorporated or deemed to be incorporated herein by reference to the extent that statements in the later filed document modify or replace such earlier statements.

We will furnish without charge to you, on written or oral request, a copy of any or all of the documents incorporated by reference, including exhibits to these documents. You should direct any requests for documents to Graham K. Cooper, Chief Financial Officer, Geron Corporation, 149 Commonwealth Drive, Suite 2070, Menlo Park, California 94025, telephone: (650) 473-7700.

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22,500,000 Shares

Common Stock

PROSPECTUS SUPPLEMENT

BofA Merrill Lynch

Stifel

Lazard Capital Markets

Piper Jaffray

MLV & Co.

January 30, 2014